

# Submittal #26 05 00-002.C 26 05 00 - Basic Electrical Requirements

Hazen and Sawyer 5775 Peachtree Dunwoody Road, Suite D-520 Atlanta, Georgia 30342 Phone: (404) 459-6363 Project: 32457-011 - CCWA - WJ Hooper WPP Generator 70 Oakdale Drive Stockbridge, Georgia 30281

Distribution Summary				
Distributed on 03/11/2022 by Tyler Chow	()			
То:	Eddie McCallum <b>(Hazen and Sawyer - Atlanta)</b> , Jeff Winston <b>(Clayton County Water Authority)</b> , Jordan Tinnell <b>(Crowder Construction Company)</b> , Tyler Chow <b>(Hazen and Sawyer - Atlanta)</b> , Griffin Ghesquiere <b>(Hazen and Sawyer - Atlanta)</b>			
Message:	None			
Additional Attachments:	26 05 00-002-C Resubmittal Relay Setting.pdf			
NAME	RESPONSE	ATTACHMENTS	COMMENT	
Nick Meyer <b>(Hazen and Sawyer -</b> Atlanta)	Receipt Acknowledged		No comments, and no action required. This is a record document.	

# GPC Bulletin 18-23 & Found-As Left Relay Settings For 35MVATS

SPEC SECTION:	26 05 00 - Basic Electrical Requirements	CREATED BY:	
		DATE CREATED:	03/08/2022
ISSUE DATE:	03/09/2022	REVISION:	C
RESPONSIBLE CONTRACTOR:	Crowder Construction Company	RECEIVED FROM:	Jordan Tinnell
RECEIVED DATE:	03/08/2022	SUBMIT BY:	09/29/2021
FINAL DUE DATE:	10/06/2021	LOCATION:	
TYPE:		COST CODE:	
BALL IN COURT:			

#### **DISTRIBUTION:**

Jeff Winston (Clayton County Water Authority), Jordan Tinnell (Crowder Construction Company), Eddie McCallum (Hazen and Sawyer - Atlanta), Griffin Ghesquiere (Hazen and Sawyer - Atlanta), Tyler Chow (Hazen and Sawyer - Atlanta)

#### **DESCRIPTION:**

GPC Bulletin 18-23 & "As Found/As Left" Relay Settings – Resubmittal to Address Comments from Version B – Electronic Copy

#### ATTACHMENTS:

26 05 00-002-C Resubmittal Relay Setting.pdf

LETTER OF TRANSMITTAL



**CROWDER CONSTRUCTION COMPANY** 1080 Holcomb Bridge Road Building 200, Suite 180 Roswell, GA 30076 Phone (770) 761-5578 Fax (770) 761-5971

	То:	Hazen 5775 P Suite 2	azen & Sawyer 775 Peachtree Dunwoody Road uite 2-520		Date: 03/08/2022	Job No.: Hazen: 32457-010 Crowder: 40781		
		Atlanta	, GA 30034	-2		W.J. Hooper WPP S	Standby Power Genera	itor
	Attn: Tyler Chow, P.E.		Location: Stockbridge, GA					
	Ph:	404-45	9-6363			26 05 00-002-C		
	Cell:	626-78	0-7164			Specification Section: 26 05 00		
N	WE ARE SENDING YOU I Attached I Under separa			arate	cover via	the followin	ig items:	
		I Shop dra	wings	Prints		Plans	□ Samples	□ Specifications
		Copy of L	etter	Change order		☑ Other		
	COPIES	NO.				DESCRIPTION		
	1 GPC Bulletin 18-23 & "As Found/A Version B – Electronic Copy			d/As	Left" Relay Settings –	Resubmittal to Address	s Comments from	
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□ Return corrected prints	□ For Information Only	□ Other:
□ FOR BIDS DUE,		

TRANSMITTED BY: \_\_\_\_Ordan Tinnell \_\_\_\_\_ DATE: \_\_03/08/2022

# W.J. Hooper WPP Standby Generator

70 Oakdale Drive, Stockbridge, GA 30281

## Owner: Clayton County Water Authority Engineer: Hazen & Sawyer Submittal Prepared by: Crowder Construction Company

**Submittal Date:** 03/08/2022

Contractor:	Subcontractor:	Supplier:
Crowder Construction Company	N/A	Electrical Reliability Services Inc
1080 Holcomb Bridge Rd		2275 Northwest Parkway SE
Bldg. 200, Suite 180		Suite 180
Roswell, GA 30076		Marietta, GA 30067
Submittal No:	26 05 00-002-C	
Submittal Name:	GPC Bulletin 18-23 & "As	Found/As Left" Relay Settings –
	Resubmittal to Address C	omments from Version B
Product Manufacturer:	Electrical Reliability Servio	ces (ERS)
Ref. Specification No:	26 05 00	
Ref. Specification Title:	Basic Electrical Requirem	ents
Drawing Reference:	N/A	

<b>Crowder Construction Submittal Review:</b>				
For approval				
Approved				
Approved as Noted				
Revise and Resubmit				
For Information Only				
Crowder Construction has reviewed, checked, and approved this submittal for compliance with Contract Documents.				
Approval by Crowder Construction Company does not relieve suppliers or subcontractors of responsibility to comply with requirements of plans and specification and/or other contract document under and for which this information is submitted. Nor does our approval establish compliance with the design concept of the project.				
By: Jordan Tinnell				
Date: 03/08/2022				

### **Crowder Comments:**

This is the re-submittal to address the Engineers comments from version B and includes the changes made onsite to 52-G1(3/2/22).



# Submittal #26 05 00-002.B 26 05 00 - Basic Electrical Requirements

Hazen and Sawyer 5775 Peachtree Dunwoody Road, Suite D-520 Atlanta, Georgia 30342 Phone: (404) 459-6363 Project: 32457-011 - WJ Hooper WPP Generator - SDC 70 Oakdale Drive Stockbridge, Georgia 30281

Distribution Summary				
Distributed on 10/11/2021 by Tyler Chow	()			
То:	Eddie McCallum <b>(Hazen and Sawyer - Atlanta)</b> , Jeff Winston <b>(Clayton County Water Authority)</b> , Jordan Tinnell <b>(Crowder Construction Company)</b> , Tyler Chow <b>(Hazen and Sawyer - Atlanta)</b> , Griffin Ghesquiere <b>(Hazen and Sawyer - Atlanta)</b>			
Message:	None			
Additional Attachments:				
NAME	RESPONSE	ATTACHMENTS	COMMENT	
Nick Meyer (Hazen and Sawyer - Atlanta)	Revise and Resubmit		A few of the settings for 52-G1 will be revised in the near future and the as-left relay settings report will need to be updated then.	

## GPC Bulletin 18-23 & Found-As Left Relay Settings For 35MVATS

SPEC SECTION:	26 05 00 - Basic Electrical Requirements	CREATED BY:	
		DATE CREATED:	09/15/2021
ISSUE DATE:	09/15/2021	<b>REVISION:</b>	В
RESPONSIBLE CONTRACTOR:	Crowder Construction Company	RECEIVED FROM:	Jordan Tinnell
RECEIVED DATE:	09/15/2021	SUBMIT BY:	09/29/2021
FINAL DUE DATE:	10/06/2021	LOCATION:	
TYPE:		COST CODE:	

BALL IN COURT:

#### DISTRIBUTION:

Jeff Winston (Clayton County Water Authority), Jordan Tinnell (Crowder Construction Company), Eddie McCallum (Hazen and Sawyer - Atlanta), Griffin Ghesquiere (Hazen and Sawyer - Atlanta), Tyler Chow (Hazen and Sawyer - Atlanta)

#### **DESCRIPTION:**

#### ATTACHMENTS:

26 05 00-002-B Resubmittal Relay Setting.pdf

LETTER OF TRANSMITTAL



**CROWDER CONSTRUCTION COMPANY** 1080 Holcomb Bridge Road Building 200, Suite 180 Roswell, GA 30076 Phone (770) 761-5578 Fax (770) 761-5971

	To: Attn: Ph: Cell:	Hazen 5775 P Suite 2 Atlanta Tyler C 404-45 626-78	& Sawyer Peachtree Dunw 2-520 a, GA 300342 Chow, P.E. 69-6363 60-7164	oody Road	Date: 09/15/2021 Project: W.J. Hooper WPP S Location: Stockbridge, GA Submittal No: 26 05 00-002-B Specification Section: 26 05 00	Job No.: Hazen: 32457-010 Crowder: 40781 Standby Power Generato	r
V	NE ARE SENDING YOU  ☑ Attached   □ Under separa			□ Under separate	e cover via	the following i	items:
	$\checkmark$	í Shop dra	wings 🛛 Pri	nts	□ Plans	□ Samples	□ Specifications
		l Copy of L	.etter □ Ch	ange order	☑ Other		
	COPIES	NO.			DESCRIPTION		
1 GPC Bulletin 18-23 & "As Found/As Left" Relay Sett Version A – Electronic Copy			s Left" Relay Settings – I	Resubmittal to Address (	Comments from		

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$\Box$ FOR BIDS DUE,		

TRANSMITTED BY: <u>Jordan 7innell</u> DATE: <u>09/15/2021</u>

# W.J. Hooper WPP Standby Generator 70 Oakdale Drive, Stockbridge, GA 30281

## **Owner:** Clayton County Water Authority Engineer: Hazen & Sawyer Submittal Prepared by: Crowder Construction Company

**Submittal Date:** 09/15/2021

Contractor:	Subcontractor:	Supplier:
Crowder Construction Company	N/A	Electrical Reliability Services Inc
1080 Holcomb Bridge Rd		2275 Northwest Parkway SE
Bldg. 200, Suite 180		Suite 180
Roswell, GA 30076		Marietta, GA 30067
Submittal No:	26 05 00-002-B	
Submittal Name:	GPC Bulletin 18-23 & "As	Found/As Left" Relay Settings –
	Resubmittal to Address C	omments from Version A
Product Manufacturer:	Electrical Reliability Service	ces (ERS)
Ref. Specification No:	26 05 00	
Ref. Specification Title:	<b>Basic Electrical Requirem</b>	ents
Drawing Reference:	N/A	

<b>Crowder Construction Submittal Review:</b>				
For approval				
Approved				
Approved as Noted				
Revise and Resubmit				
For Information Only				
Crowder Construction has reviewed, check	ted, and approved this submittal for compliance with Contract Documents.			
Approval by Crowder Construction Company does not relieve suppliers or subcontractors of responsibility to comply with requirements of plans and specification and/or other contract document under and for which this information is submitted. Nor does our approval establish compliance with the design concept of the project.				
By: Jordan Tinnell				
Date: 09/15/2021				

### **Crowder Comments:**

This is the re-submittal to address the Engineers comments from version A.

## Engineers Comments from Version A:

- Include the abbreviated report files (approximately 2 pages each) that list only the protective elements that are actually set. Place these reports in front of the longer reports. These reports are bookmarked within the PDF and can be found on the pages below.
  - a. 52-F1 Summary Sheet found on Page 5
  - b. 52-G1 Summary Sheet found on Page 70
  - c. 52-GM Summary Sheet found on Page 135
  - d. 52-UM Summary Sheet found on Page 200
  - e. 52-TB Summary Sheet found on Page 262



August 2, 2021

Mr. Philip Beckham W.J. Hooper Plant Manager Clayton County Water Authority 1600 BATTLE CREEK RD Morrow, GA 30260

# **RE:** Open Transition Transfer Inspection and Witness Test Completed on 07/30/2021 at W.J. Hooper Plant located at 70 Oakdale Dr Stockbridge

Dear Mr. Beckham:

Thank you for making arrangements for the testing of the Georgia Power Company's Power Delivery Bulletin 18-23 Interface requirements for your Non-Utility Standby Generator(s) located at70 Oakdale Dr Stockbridge GA.

The inspection, on 07/30/2021 satisfied the interconnection requirements of Power Delivery Bulletin 18-23 open transition transfer.

W.J. Hooper Water Plant is now free to operate the standby generation system in open transition both from and to Georgia Power Company supply at 70 Oakdale Dr Stockbridge GA.

If you have any questions about the responsibilities in operating this generation, I would be happy to answer them for you. You can reach me at 404-654-7563.

Sincerely,

Eric Mikell Reliability Engineer Distribution Reliability 

# **SEL-751 Settings Report**

Group	Setting	Range	Default Value	Value	Delta	Description	Comments	Hidden
1	50P1P	Range = 0.25 to 100.00, OFF	10.00	34.50	True	Maximum Phase Overcurrent Trip Pickup (amps sec.)		False
1	50P1D	Range = 0.00 to 400.00, OFF	0.00	0.00	False	Maximum Phase Overcurrent Trip Delay (seconds)		False
1	50G1P	Range = 0.25 to 100.00, OFF	OFF	5.00	True	Residual Overcurrent Trip Pickup (amps sec.)		False
1	50G1D	Range = 0.00 to 400.00, OFF	0.50	0.00	True	Residual Overcurrent Trip Delay (seconds)		False
1	51P1P	Range = 0.25 to 24.00, OFF	6.00	3.00	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51P1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U4	True	TOC Curve Selection		False
1	51P1TD	Range = 0.50 to 15.00	3.00	1.59	True	TOC Time Dial		False
1	51G1P	Range = 0.25 to 24.00, OFF	0.50	2.50	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51G1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U3	False	TOC Curve Selection		False
1	51G1TD	Range = 0.50 to 15.00	1.50	1.50	False	TOC Time Dial		False
1	TR	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T OR ORED51T OR ORED81T OR REMTRIP OR OC OR SV04T	50P1T OR 51P1T	True	Trip (SELogic)		False
						1		
<b>6</b> (Group = 1	Group = 1) and ((Setting = 50P1D) or (Setting = 50P1P) or (Setting = 50G1D) or (Setting = 50G1P) or (Setting = 51G1C) or (Setting = 51G1P) or (Setting = 51P1C) or (Setting = 51P1P) o							

Table Of Contents	
Report Date: July 29, 2021 07:49:43 am	
Database: C:\Users\Kevin.myrick\OneDrive - Ve	ertiv Co\Documents\Jobs\WJ Hooper WPP\WJ-Hooper.rdb
Device Information (Current)	Device Information (Other)
Settings: 52-F1 AF (Current)	Settings: 52-F1 AL 7-26-21 (Other)
Device: 751 008	Device: 751 008
Part#: 751202CCCBC70851D10	Part#: 751202CCCBC70851D10
FID: SEL-751-R300-V3-Z008004-D20210104	FID: SEL-751-R300-V3-Z008004-D20210104
BFID: SLBT7XX-R600-V0-Z000000-D2020033	31 BFID: SLBT-751-RXXX-V0-Z007003-DXXXXXXXX
Hidden (H): 0/6313 Changed: 7/7 Unchange	ed: 0/7566 Missing: 0/0 Invalid (I): 0/0 Designer (D): 0/0

Page 2	of 2

Group 1			
Compared Settings			
Setting	52-F1 AF (Current)	52-F1 AL 7-26-21 (Other)	
50P1P	10.00	34.50	
51P1P	6.00	3.00	
51P1C	U3	U4	
<b>51P1TD</b>	3.00	1.59	
TR	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T OR SV08T	50P1T OR 5 1P 1 T	

Front Panel			
Compared Settings			
Setting	52-F1 AF (Current)	52-F1 AL 7-26-21 (Other)	
DP03	IN101, BREAKER, OPEN, CLOSED	IN101, BREAKER, CLOSED, OPEN	
DP05	1, "RELAY NOT IN SERVICE"	0	

# SEL-751 Settings Report

## **Overview Information**

File Name	52-F1 AL 7-26-21
RDB	WJ-Hooper.rdb
Device	SEL-751
Setting Version Number	008
Part Number	751202CCCBC70851D10
Firmware ID	SEL-751-R300-V3-Z008004-D20210104
SELBoot Firmware ID	SLBT7XX-R600-V0-Z000000-D20200331

## Settings

Global Group 1 Group 2 Group 3 Group 4 Logic 1	
Group 1 Group 2 Group 3 Group 4 Logic 1	
Group 2 Group 3 Group 4 Logic 1	
Group 3 Group 4 Logic 1	
Group 4	
Logic 1	
Logic 2	
Logic 3	
Logic 4	
Front Panel	
Report	
Port F	
Port 1	
Port 2	
Port 3	
Modbus User Map	
Settings Legend	
Visible Setting	
Hidden Setting	

Global			Top
Setting	Description	Range	Value
PHROT	Phase Rotation	Select: ABC, ACB	ABC
FNOM	Rated Frequency (Hz)	Select: 50, 60	60
DATE_F	Date Format	Select: MDY, YMD, DMY	MDY
METHRES	Meter Cutoff Threshold	Select: Y, N	Y
FAULT	Fault Condition (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50G1P OR 50N1P OR 51P1P OR 51QP OR 50Q1P OR TRIP
EMP	Messenger Points Enable	Range = $1$ to $32$ , N	Ν
TGR	Group Change Delay (seconds)	Range = $0$ to $400$	3
SS1	Select Settings Group1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
SS2	Select Settings Group2 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS3	Select Settings Group3 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS4	Select Settings Group4 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
EPMU	Enable Synchronized Phasor Measurement	Select: Y, N	Ν
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE
UTC_OFF	Offset From UTC (hours, in 0.25 hour increments)	Range = $-24.00$ to $24.00$	0.00
DST_BEGM	Month To Begin DST	Range = $1$ to $12$ , OFF	OFF
52ABF	52A Interlock in BF Logic	Select: Y, N	Ν
50BFP	Breaker-Failure Current Detector Pickup (amps sec.)	Range = $0.10$ to $10.00$	0.10
BFD	Breaker Failure Delay (seconds)	Range = $0.00$ to $2.00$	0.50
ATD	Auxiliary Timer Delay (seconds)	Range = 0.00 to 2.00, OFF	OFF
BFI	Breaker Failure Initiate (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG TRIP
BFISID	Breaker Failure Initiate Seal-In Delay (seconds)	Range = 0.00 to 2.00, OFF	0.00
BFRTD	Breaker Retrip Delay (seconds)	Range = 0.00 to 2.00, OFF	0.05
BFTR	Breaker Failure Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
BFULTR	Breaker Failure Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
50PAFP	Arc-Flash Maximum Phase Overcurrent Pickup (amps sec.)	Range = 0.50 to 100.00, OFF	OFF

AOUTSLOT	Select Arc-Flash Output Slot	Select: 101_3, 401_4, 301_4	101_3
AFSENS1	Arc-Flash Input 1 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS2	Arc-Flash Input 2 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS3	Arc-Flash Input 3 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS4	Arc-Flash Input 4 Sensor Type	Select: NONE, POINT, FIBER	NONE
AO401AQ	AO401 Analog Quantity (Off, 1 analog quantity)	Range = Maximum of 1 Analog Elements	OFF
DCLOP	DC Battery LO Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
DCHIP	DC Battery HI Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
IN101D	IN101 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN102D	IN102 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN301D	IN301 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN302D	IN302 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN303D	IN303 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN304D	IN304 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN401D	IN401 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN402D	IN402 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN403D	IN403 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
EBMON	Enable Breaker Monitor	Select: Y, N	N
RSTTRGT	Reset Targets (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTENRGY	Reset Energy (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTMXMN	Reset Max/Min (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTDEM	Reset Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTPKDEM	Reset Peak Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DSABLSET	Disable Settings (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TIME_SRC	IRIG Time Source	Select: IRIG1, IRIG2	IRIG1
89EN2P	Enable Two Position Disconnects	Range = $1$ to $8$ , N	8
89NM2P1	Disconnect 1 Name	Range = ASCII string with a maximum length of 16.	2P1
		Valid range = The legal	

89A2P1	Disconnect 1 N/O Contact (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	0
89B2P1	Disconnect 1 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P1
89A2P1D	Disconnect 1 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P1D	Disconnect 1 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P1D	Disconnect 1 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P1	Disconnect 1 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P1
89CB2P1	Disconnect 1 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89CR2P1	Disconnect 1 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P1 OR 89CS2P1 OR 89AL2P1
89CT2P1	Disconnect 1 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P1
89RO2P1	Disconnect 1 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P1
89OB2P1	Disconnect 1 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89OR2P1	Disconnect 1 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P1 OR 89OS2P1 OR 89AL2P1
89OT2P1	Disconnect 1 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P1
89NM2P2	Disconnect 2 Name	Range = ASCII string with a maximum length of 16.	2P2
89A2P2	Disconnect 2 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P2	Disconnect 2 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P2
89A2P2D	Disconnect 2 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P2D	Disconnect 2 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P2D	Disconnect 2 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P2	Disconnect 2 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P2
89CB2P2	Disconnect 2 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT	89AL2P2

		R_TRIG F_TRIG	
89CR2P2	Disconnect 2 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P2 OR 89CS2P2 OR 89AL2P2
89CT2P2	Disconnect 2 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P2
89RO2P2	Disconnect 2 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P2
89OB2P2	Disconnect 2 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P2
89OR2P2	Disconnect 2 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P2 OR 89OS2P2 OR 89AL2P2
89OT2P2	Disconnect 2 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P2
89NM2P3	Disconnect 3 Name	Range = ASCII string with a maximum length of 16.	2P3
89A2P3	Disconnect 3 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P3	Disconnect 3 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P3
89A2P3D	Disconnect 3 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P3D	Disconnect 3 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P3D	Disconnect 3 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P3	Disconnect 3 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P3
89CB2P3	Disconnect 3 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89CR2P3	Disconnect 3 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P3 OR 89CS2P3 OR 89AL2P3
89CT2P3	Disconnect 3 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P3
89RO2P3	Disconnect 3 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P3
89OB2P3	Disconnect 3 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89OR2P3	Disconnect 3 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P3 OR 89OS2P3 OR 89AL2P3

89OT2P3	Disconnect 3 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P3
89NM2P4	Disconnect 4 Name	Range = ASCII string with a maximum length of 16.	2P4
89A2P4	Disconnect 4 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P4	Disconnect 4 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P4
89A2P4D	Disconnect 4 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P4D	Disconnect 4 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P4D	Disconnect 4 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P4	Disconnect 4 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P4
89CB2P4	Disconnect 4 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89CR2P4	Disconnect 4 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P4 OR 89CS2P4 OR 89AL2P4
89CT2P4	Disconnect 4 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P4
89RO2P4	Disconnect 4 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P4
89OB2P4	Disconnect 4 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89OR2P4	Disconnect 4 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P4 OR 89OS2P4 OR 89AL2P4
89OT2P4	Disconnect 4 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P4
89NM2P5	Disconnect 5 Name	Range = ASCII string with a maximum length of 16.	2P5
89A2P5	Disconnect 5 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P5	Disconnect 5 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P5
89A2P5D	Disconnect 5 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P5D	Disconnect 5 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P5D	Disconnect 5 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00,	0.33

		OFF	
89RC2P5	Disconnect 5 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P5
89CB2P5	Disconnect 5 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89CR2P5	Disconnect 5 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P5 OR 89CS2P5 OR 89AL2P5
89CT2P5	Disconnect 5 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P5
89RO2P5	Disconnect 5 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P5
89OB2P5	Disconnect 5 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89OR2P5	Disconnect 5 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P5 OR 89OS2P5 OR 89AL2P5
89OT2P5	Disconnect 5 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P5
89NM2P6	Disconnect 6 Name	Range = ASCII string with a maximum length of 16.	2P6
89A2P6	Disconnect 6 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P6	Disconnect 6 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P6
89A2P6D	Disconnect 6 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P6D	Disconnect 6 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P6D	Disconnect 6 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P6	Disconnect 6 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P6
89CB2P6	Disconnect 6 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89CR2P6	Disconnect 6 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P6 OR 89CS2P6 OR 89AL2P6
89CT2P6	Disconnect 6 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P6
89RO2P6	Disconnect 6 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P6

89OB2P6	Disconnect 6 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89OR2P6	Disconnect 6 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P6 OR 89OS2P6 OR 89AL2P6
89OT2P6	Disconnect 6 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P6
89NM2P7	Disconnect 7 Name	Range = ASCII string with a maximum length of 16.	2P7
89A2P7	Disconnect 7 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P7	Disconnect 7 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P7
89A2P7D	Disconnect 7 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P7D	Disconnect 7 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P7D	Disconnect 7 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P7	Disconnect 7 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P7
89CB2P7	Disconnect 7 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89CR2P7	Disconnect 7 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P7 OR 89CS2P7 OR 89AL2P7
89CT2P7	Disconnect 7 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P7
89RO2P7	Disconnect 7 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P7
89OB2P7	Disconnect 7 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89OR2P7	Disconnect 7 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P7 OR 89OS2P7 OR 89AL2P7
89OT2P7	Disconnect 7 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P7
89NM2P8	Disconnect 8 Name	Range = ASCII string with a maximum length of 16.	2P8
89A2P8	Disconnect 8 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P8	Disconnect 8 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT	NOT 89A2P8

		R_TRIG F_TRIG	1
89A2P8D	Disconnect 8 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P8D	Disconnect 8 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P8D	Disconnect 8 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P8	Disconnect 8 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P8
89CB2P8	Disconnect 8 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89CR2P8	Disconnect 8 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P8 OR 89CS2P8 OR 89AL2P8
89CT2P8	Disconnect 8 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P8
89RO2P8	Disconnect 8 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P8
89OB2P8	Disconnect 8 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89OR2P8	Disconnect 8 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P8 OR 89OS2P8 OR 89AL2P8
89OT2P8	Disconnect 8 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P8
89EN3P	Enable Three Position Disconnects	Range = $1$ to $2$ , N	N
EN_LRC	Enable Local Remote Control	Select: Y, N	Ν
SC850BM	IEC 61850 Blocked Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SC850TM	IEC 61850 Test Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	SEL-751
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	52-FEEDER RELAY
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	400
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	400
PTR	PT Ratio	Range = 1.00 to 10000.00	35.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	35.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Y
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	34.50
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	5.00
50G1D	Residual Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50G1TC	Residual Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
		Range = $0.25$ to 100.00,	

50G4P	Residual Overcurrent Trip Pickup (amps sec.)	OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = 1 to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	3.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U4
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	1.59
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	2.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1

51G2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
EDIR	Enable Directional Control	Select: Y, AUTO, N	Ν
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	Ν
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	Ν
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	Ν
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	108.00
27PP1D	Phase-Phase Undervoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.50
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	12.00
27S1D	Channel VS Undervoltage Delay 1 (seconds)	Range = 0.00 to 120.00	0.00
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	Ν
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	132.00
59PP1D	Phase-Phase Overvoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	Υ
25VLO	Voltage Window - Low Threshold (volts)	Range = 0.00 to 300.00	108.00
25VHI	Voltage Window - High Threshold (volts)	Range = 0.00 to 300.00	132.00
25RCF	Voltage Ratio Correction Factor	Range = $0.50$ to $2.00$	1.00
25SF	Maximum Slip Frequency (Hz)	Range = $0.05$ to $0.50$	0.20
25ANG1	Maximum Angle 1 (degrees)	Range = $0$ to $80$	15
25ANG2	Maximum Angle 2 (degrees)	Range = $0$ to $80$	15
SYNCPH	Synchronism Check Phase (VAB,VBC,VCA or deg lag VAB)	Select: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, VAB, VBC, VCA	VAB
TCLOSD	Breaker Close Time for Angle Compensation (milliseconds)	Range = 1 to 1000, OFF	OFF
BSYNCH	Block Synchronism Check (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A

LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	59.00
81D1TD	Frequency1 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D1TC	Frequency1 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	61.00
81D2TD	Frequency2 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D2TC	Frequency2 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	1
81RVSUP	Voltage Supervision of Rate-of-Change of Frequency Elements (volts)	Range = 12.5 to 300.0, OFF	96.0
81RISUP	Current Supervision of Rate-of-Change of Frequency Elements (amps)	Range = 0.5 to 10.0, OFF	OFF
81R1TP	Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)	Range = 0.10 to 15.00, OFF	0.50
81R1TRND	Rate-of-Change of Frequency Trend 1	Select: INC, DEC, ABS	ABS
81R1TD	Rate-of-Change of Frequency Trip 1 Delay (seconds)	Range = $0.10$ to $60.00$	0.25
81R1DO	Rate-of-Change of Frequency Dropout 1 Delay (seconds)	Range = $0.00$ to $60.00$	0.00
81R1TC	Rate-of-Change of Frequency Torque Control 1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	N
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = $0.50$ to $16.00$ , OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00

EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	3P1
3PWR1P	Three Phase Power Element Pickup (VA)	Range = 1.0 to 6500.0, OFF	50.0
PWR1T	Power Element Type	Select: +WATTS, - WATTS, +VARS, -VARS	-WATTS
PWR1D	Power Element Time Delay (seconds)	Range = $0.0$ to 240.0	0.0
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to 400.0, OFF	OFF
TR	Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 51P1T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 50P1P OR 50G1P OR 50N1P)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	IN101
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
ZOSMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
ZOSANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to $100.00$ ,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	Ν
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Group 3			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = 0.10 to 510.00	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = 0.10 to 510.00	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	N
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to $100.00$ ,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25  to  24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25  to  24.00, OFF	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	Ν
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	Ν
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to 400.0, OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR
TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
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REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 3			Тор

Group 4			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Ν
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	Ν
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = $2.00$ to $300.00$ ,	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = $2.00$ to $300.00$ , OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 4			Тор

Logic 1 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	10
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	10
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA

SET08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.50
SV01	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T OR SV08T #DIRECT TRIP
SV02PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0 #UTILITY FAIL
SV03PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.50
SV03DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	25A1 OR (NOT SV02 AND 27S1) #SYNC CHECK OK
SV04PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM #PROTECTION RELAY FAIL
SV05PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.10
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV06PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV06DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
		Valid range = The legal	

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SV06	SV_Input (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	0
SV07PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV07DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV07	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV08PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	1.00
SV08DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV08	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0 #REVERSE POWER TRIP
SV09PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV09DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV09	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV10PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV10DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV10	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Ν
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Y
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV04T #PROTECTIVE RELAY ALARM TO PLC
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	N
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT	0

İ		R_TRIG F_TRIG	
OUT401FS	OUT401 Fail-Safe	Select: Y, N	N
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 51P1T OR 51G1T OR SV08T #DIRECT TRIP TO PLC
OUT402FS	OUT402 Fail-Safe	Select: Y, N	Ν
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT404FS	OUT404 Fail-Safe	Select: Y, N	N
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 1			Тор

Logic 2 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 2			Тор

Logic 3 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	3.00
SV02DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 3			Top

Logic 4 <u>Top</u>			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03

SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	N
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 4			Тор

Front Panel <u>Top</u>			
Setting	Description	Range	Value
EDP	Display Points Enable	Range = $1$ to $32$ , N	5
ELB	Local Bits Enable	Range = $1$ to $32$ , N	N
FP_TO	Front-Panel Timeout (mins)	Range = 1 to 30, OFF	15
FP_CONT	Front-Panel Contrast	Range = 1 to $16$	10
FP_AUTO	Front-Panel Automessages	Select: OVERRIDE, ROTATING	OVERRIDE
RSTLED	Reset Trip-Latched LEDs On Close	Select: Y, N	Ν
LEDENAC	ENABLED LED Asserted Color	Select: R, G, A	G
LEDTRPC	TRIP LED Asserted Color	Select: R, G, A	R
MAXACC	Maximum Access Level	Select: 1, 2	2
T01LEDL	Trip Latch T_LED	Select: Y, N	Y
T01LEDC	Target T01_LED Asserted Color (R,G,A)	Select: R, G, A	R
T01_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T #INSTANT OC
T02LEDL	Trip Latch T_LED	Select: Y, N	Y
T02LEDC	Target T02_LED Asserted Color (R,G,A)	Select: R, G, A	R
T02_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51AT OR 51BT OR 51CT OR 51P1T OR 51P2T #PHASE OC
T03LEDL	Trip Latch T_LED	Select: Y, N	Y
T03LEDC	Target T03_LED Asserted Color (R,G,A)	Select: R, G, A	R
T03_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51N1T OR 51G1T OR 51N2T OR 51G2T #GND/NEU OC
T04LEDL	Trip Latch T_LED	Select: Y, N	Y
T04LEDC	Target T04_LED Asserted Color (R,G,A)	Select: R, G, A	R
T04_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51QT #NEG SEQ OC
T05LEDL	Trip Latch T_LED	Select: Y, N	Y
T05LEDC	Target T05_LED Asserted Color (R,G,A)	Select: R, G, A	R
T05_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	81D1T OR 81D2T OR 81D3T OR 81D4T #OVER/UNDER FREQUENCY
T06LEDL	Trip Latch T_LED	Select: Y, N	N
T06LEDC	Target T06_LED Asserted Color (R,G,A)	Select: R, G, A	R
T06_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT	(BFT OR T06_LED) AND NOT TRGTR

	R_TRIG F_TRIG	#BREAKER FAIL
PB1A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB1B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Display Point (60 characters)		TID, " {16}"
Display Point (60 characters)		0
Display Point (60 characters)		IN101, BREAKER, CLOSED, OPEN
	PB1A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB1B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB2A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB2B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB3A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB3B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB3B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB4A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB4A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB4B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   Display Point (60 characters)   Display Point (60 characters)   Display Point (60 characters)   Display Point (60 characters)	R_TRIG F_TRIGPB1A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROEquation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGPB1B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROEquation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGPB2A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB2A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROEquation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGPB2B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB4A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB44_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB44_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB44_LED Asserted/Deasserted Colors (R,G,A,O)S

DP04	Display Point (60 characters)		0	
DP05	Display Point (60 characters)		)	
Front Panel <u>Top</u>				

Report Top			
Setting	Description	Range	Value
ER	Event Report Trigger (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG 51P1P OR R_TRIG 51G1P OR R_TRIG 51N1P OR R_TRIG 50P1P OR R_TRIG 50G1P OR R_TRIG 50N1P
LER	Length of Event Report (cycles)	Select: 15, 64, 180	15
PRE	Prefault Length (cycles)	Range = 1 to $10$	5
ESERDEL	Auto-Removal Enable	Select: Y, N	N
SER1	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	IN101, 51P1T, 51G1T, 51N1T, 50P1P, 50G1T, 50N1T
SER2	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	52A
SER3	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	SV05T, SV02T
SER4	(24 Relay Word bits)	Valid range = 0, NA or alist of relay elements.	SALARM, HALARM
EALIAS	Enable ALIAS Settings	Range = $1$ to 20, N	N
FMR1NAM	Fast Message Read Name1 (9 characters)	Range = $ASCII$ string with a maximum length of 9.	FMR1
FMR1	(24 analog quantities)	Valid range $= 0$ , NA or a list of relay elements.	NA
FMR2NAM	Fast Message Read Name2 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR2
FMR2	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR3NAM	Fast Message Read Name3 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR3
FMR3	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR4NAM	Fast Message Read Name4 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR4
FMR4	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
RA01TYPE	Remote Analog 01 type	Select: I, F, L	Ι
RA02TYPE	Remote Analog 02 type	Select: I, F, L	I
RA03TYPE	Remote Analog 03 type	Select: I, F, L	Ι
RA04TYPE	Remote Analog 04 type	Select: I, F, L	Ι
RA05TYPE	Remote Analog 05 type	Select: I, F, L	Ι
RA06TYPE	Remote Analog 06 type	Select: I, F, L	Ι

RA07TYPE	Remote Analog 07 type	Select: I, F, L	Ι
RA08TYPE	Remote Analog 08 type	Select: I, F, L	Ι
RA09TYPE	Remote Analog 09 type	Select: I, F, L	Ι
RA10TYPE	Remote Analog 10 type	Select: I, F, L	Ι
RA11TYPE	Remote Analog 11 type	Select: I, F, L	Ι
RA12TYPE	Remote Analog 12 type	Select: I, F, L	Ι
RA13TYPE	Remote Analog 13 type	Select: I, F, L	Ι
RA14TYPE	Remote Analog 14 type	Select: I, F, L	Ι
RA15TYPE	Remote Analog 15 type	Select: I, F, L	Ι
RA16TYPE	Remote Analog 16 type	Select: I, F, L	Ι
RA17TYPE	Remote Analog 17 type	Select: I, F, L	Ι
RA18TYPE	Remote Analog 18 type	Select: I, F, L	Ι
RA19TYPE	Remote Analog 19 type	Select: I, F, L	Ι
RA20TYPE	Remote Analog 20 type	Select: I, F, L	Ι
RA21TYPE	Remote Analog 21 type	Select: I, F, L	Ι
RA22TYPE	Remote Analog 22 type	Select: I, F, L	Ι
RA23TYPE	Remote Analog 23 type	Select: I, F, L	Ι
RA24TYPE	Remote Analog 24 type	Select: I, F, L	Ι
RA25TYPE	Remote Analog 25 type	Select: I, F, L	Ι
RA26TYPE	Remote Analog 26 type	Select: I, F, L	Ι
RA27TYPE	Remote Analog 27 type	Select: I, F, L	Ι
RA28TYPE	Remote Analog 28 type	Select: I, F, L	Ι
RA29TYPE	Remote Analog 29 type	Select: I, F, L	Ι
RA30TYPE	Remote Analog 30 type	Select: I, F, L	Ι
RA31TYPE	Remote Analog 31 type	Select: I, F, L	Ι
RA32TYPE	Remote Analog 32 type	Select: I, F, L	Ι
LDLIST	Load Profile List (17 Analog Quantities)	Range = Maximum of 17 Analog Elements	NA
LDAR	Load Profile Acquisition Rate (mins)	Select: 5, 10, 15, 30, 60	15
Report			Тор

Port F			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	N
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to 30	5
RTSCTS	Hardware Handshaking	Select: Y, N	N
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
Port F			Тор

Port 1 Top			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
EETHFWU	Enable Ethernet Firmware Upgrade	Select: Y, N	N
IPADDR	Device IP Address [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.154
SUBNETM	Subnet Mask [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	255.255.255.0
DEFRTR	Default Router Gateway [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.1
ЕТСРКА	Enable TCP Keep-Alive	Select: Y, N	Y
KAIDLE	TCP Keep-Alive Idle Range (seconds)	Range = $1$ to $20$	10
KAINTV	TCP Keep-Alive Interval Range (seconds)	Range = $1$ to $20$	1
KACNT	TCP Keep-Alive Count Range	Range = $1$ to $20$	6
ETELNET	Enable Telnet	Select: Y, N	Y
MAXACC	Maximum Access Level	Select: 1, 2, C	2
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
TPORT	Telnet Port	Range = 1025 to 65534, 23	23
TCBAN	Telnet Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	TERMINAL SERVER
TIDLE	Telnet Port Timeout (mins)	Range = $1$ to $30$	15
FASTOP	Fast Operate	Select: Y, N	Ν
EFTPSERV	Enable FTP	Select: Y, N	Y
FTPACC	FTP Maximum Access Level	Select: 1, 2, C	2
FTPUSER	FTP User Name (20 characters)	Range = ASCII string with a maximum length of 20.	FTPUSER
FTPCBAN	FTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	FTP SERVER
FTPIDLE	FTP Idle Time (mins)	Range = $5$ to $255$	5
E61850	Enable IEC 61850 Protocol	Select: Y, N	Y
EGSE	Enable IEC 61850 GOOSE	Select: Y, N	Y
EMMSFS	Enable MMS File Services	Select: Y, N	Y
E850MBC	Enable 61850 Mode/Behavior Control	Select: Y, N	Ν
EOFFMTX	Enable GOOSE Tx in Off Mode	Select: Y, N	Ν
EMOD	Enable Modbus Sessions	Select: 0-2	0
EHTTP	Enable HTTP Server	Select: Y, N	Υ
HTTPACC	HTTP Maximum Accesss Level	Select: 1, 2	2
HTTPPORT	HTTP Server TCP/IP Port Number	Range = 1 to $65534$	80
HTTPBAN	HTTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	THIS SYSTEM IS FOR THE USE OF AUTHORIZED PERSONNEL

			ONLY.
HTTPIDLE	HTTP Web Server Timeout (minutes)	Range $= 1$ to $60$	10
ESNTP	Enable SNTP Client	Select: OFF, UNICAST, MANYCAST, BROADCAST	OFF
EPTP	Enable PTP	Select: Y, N	Ν
Port 1			
			<u>Тор</u>

Port 2			Top
Setting	Description	Range	Value
Port 2	·		Тор

Port 3 Top			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU, MBA, MBB, MB8A, MB8B, MBTA, MBTB	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	Ν
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to $30$	5
RTSCTS	Hardware Handshaking	Select: Y, N	Ν
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
FASTOP	Fast Operate	Select: Y, N	Ν
Port 3			<u>Top</u>

Modbus User Map Top			
Setting	Description	Range	Value
MOD_001	USER REG#001 (8 characters)	Range = Maximum of 1 Digital Elements	IA_MAG
MOD_002	USER REG#002 (8 characters)	Range = Maximum of 1 Digital Elements	IB_MAG
MOD_003	USER REG#003 (8 characters)	Range = Maximum of 1 Digital Elements	IC_MAG
MOD_004	USER REG#004 (8 characters)	Range = Maximum of 1 Digital Elements	IN_MAG
MOD_005	USER REG#005 (8 characters)	Range = Maximum of 1 Digital Elements	IG_MAG
MOD_006	USER REG#006 (8 characters)	Range = Maximum of 1 Digital Elements	IAV
MOD_007	USER REG#007 (8 characters)	Range = Maximum of 1 Digital Elements	3I2
MOD_008	USER REG#008 (8 characters)	Range = Maximum of 1 Digital Elements	UBI
MOD_009	USER REG#009 (8 characters)	Range = Maximum of 1 Digital Elements	VAVE
MOD_010	USER REG#010 (8 characters)	Range = Maximum of 1 Digital Elements	3V2
MOD_011	USER REG#011 (8 characters)	Range = Maximum of 1 Digital Elements	UBV
MOD_012	USER REG#012 (8 characters)	Range = Maximum of 1 Digital Elements	Р
MOD_013	USER REG#013 (8 characters)	Range = Maximum of 1 Digital Elements	Q
MOD_014	USER REG#014 (8 characters)	Range = Maximum of 1 Digital Elements	S
MOD_015	USER REG#015 (8 characters)	Range = Maximum of 1 Digital Elements	PF
MOD_016	USER REG#016 (8 characters)	Range = Maximum of 1 Digital Elements	FREQ
MOD_017	USER REG#017 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIH
MOD_018	USER REG#018 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIL
MOD_019	USER REG#019 (8 characters)	Range = Maximum of 1 Digital Elements	МѠНЗРОН
MOD_020	USER REG#020 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3POL
MOD_021	USER REG#021 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIH
MOD_022	USER REG#022 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIL
		Range = Maximum of 1	

MOD_023	USER REG#023 (8 characters)	Digital Elements	MVRH3POH
MOD_024	USER REG#024 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3POL
MOD_025	USER REG#025 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PH
MOD_026	USER REG#026 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PL
MOD_027	USER REG#027 (8 characters)	Range = Maximum of 1 Digital Elements	RTDWDGMX
MOD_028	USER REG#028 (8 characters)	Range = Maximum of 1 Digital Elements	RTDBRGMX
MOD_029	USER REG#029 (8 characters)	Range = Maximum of 1 Digital Elements	RTDAMB
MOD_030	USER REG#030 (8 characters)	Range = Maximum of 1 Digital Elements	RTDOTHMX
MOD_031	USER REG#031 (8 characters)	Range = Maximum of 1 Digital Elements	IARMS
MOD_032	USER REG#032 (8 characters)	Range = Maximum of 1 Digital Elements	IBRMS
MOD_033	USER REG#033 (8 characters)	Range = Maximum of 1 Digital Elements	ICRMS
MOD_034	USER REG#034 (8 characters)	Range = Maximum of 1 Digital Elements	INRMS
MOD_035	USER REG#035 (8 characters)	Range = Maximum of 1 Digital Elements	IAMX
MOD_036	USER REG#036 (8 characters)	Range = Maximum of 1 Digital Elements	IAMN
MOD_037	USER REG#037 (8 characters)	Range = Maximum of 1 Digital Elements	IBMX
MOD_038	USER REG#038 (8 characters)	Range = Maximum of 1 Digital Elements	IBMN
MOD_039	USER REG#039 (8 characters)	Range = Maximum of 1 Digital Elements	ICMX
MOD_040	USER REG#040 (8 characters)	Range = Maximum of 1 Digital Elements	ICMN
MOD_041	USER REG#041 (8 characters)	Range = Maximum of 1 Digital Elements	INMX
MOD_042	USER REG#042 (8 characters)	Range = Maximum of 1 Digital Elements	INMN
MOD_043	USER REG#043 (8 characters)	Range = Maximum of 1 Digital Elements	IGMX
MOD_044	USER REG#044 (8 characters)	Range = Maximum of 1 Digital Elements	IGMN
MOD_045	USER REG#045 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMX
MOD_046	USER REG#046 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMN
MOD_047	USER REG#047 (8 characters)	Range = Maximum of 1 Digital Elements	KVAR3PMX
MOD_048	USER REG#048 (8 characters)	Range = Maximum of 1	KVAR3PMN

		Digital Elements	
MOD_049	USER REG#049 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMX
MOD_050	USER REG#050 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMN
MOD_051	USER REG#051 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMX
MOD_052	USER REG#052 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMN
MOD_053	USER REG#053 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_LO
MOD_054	USER REG#054 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_HI
MOD_055	USER REG#055 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_LO
MOD_056	USER REG#056 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_HI
MOD_057	USER REG#057 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_058	USER REG#058 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_059	USER REG#059 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_060	USER REG#060 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_061	USER REG#061 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_062	USER REG#062 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_063	USER REG#063 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_064	USER REG#064 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_065	USER REG#065 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_066	USER REG#066 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_067	USER REG#067 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_068	USER REG#068 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_069	USER REG#069 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_070	USER REG#070 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_071	USER REG#071 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_072	USER REG#072 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_073	USER REG#073 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_074	USER REG#074 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_075	USER REG#075 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_076	USER REG#076 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_077	USER REG#077 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_078	USER REG#078 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_079	USER REG#079 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_080	USER REG#080 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_081	USER REG#081 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_082	USER REG#082 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_083	USER REG#083 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_084	USER REG#084 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_085	USER REG#085 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_086	USER REG#086 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_087	USER REG#087 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_088	USER REG#088 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_089	USER REG#089 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_090	USER REG#090 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_091	USER REG#091 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_092	USER REG#092 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_093	USER REG#093 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_094	USER REG#094 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_095	USER REG#095 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_096	USER REG#096 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_097	USER REG#097 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_098	USER REG#098 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_099	USER REG#099 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_100	USER REG#100 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_101	USER REG#101 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_102	USER REG#102 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_103	USER REG#103 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_104	USER REG#104 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_105	USER REG#105 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_106	USER REG#106 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_107	USER REG#107 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_108	USER REG#108 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_109	USER REG#109 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_110	USER REG#110 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_111	USER REG#111 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_112	USER REG#112 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_113	USER REG#113 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_114	USER REG#114 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_115	USER REG#115 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_116	USER REG#116 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_117	USER REG#117 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_118	USER REG#118 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_119	USER REG#119 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_120	USER REG#120 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_121	USER REG#121 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_122	USER REG#122 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_123	USER REG#123 (8 characters)	Range = Maximum of 1	NA

		Digital Elements		
MOD_124	USER REG#124 (8 characters)	Range = Maximum of 1 Digital Elements	NA	
MOD_125	USER REG#125 (8 characters)	Range = Maximum of 1 Digital Elements	NA	
Modbus User Map <u>Top</u>				
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## SEL-700G Settings Report

Group	Setting U	Range	Default Value	Value	Delta	Description	Comments	Hidden
1	TR3	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV06 OR SV07	87U OR 87R OR 87N1T OR 87N2T OR 50PX1T	True	Trip 3 (Generator Lockout Relay) Equation (SELogic)		False
1	87NTC	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1	1	False	Ground Differential Element Torque Control (SELogic)		True
1	87N2P	Range = 0.30 to 15.00, OFF	OFF	OFF	False	87N Level 2 Differential Pickup (amps)		True
1	87N2D	Range = 0.00 to 400.00	0.00	0.00	False	87N Level 2 Differential Time Delay (seconds)		True
1	87N1P	Range = 0.30 to 15.00	2.50	2.50	False	87N Level 1 Differential Pickup (amps)		True
1	87N1D	Range = 0.00 to 400.00	0.10	0.10	False	87N Level 1 Differential Time Delay (seconds)		True
1	87AP	Range = 0.05 to 1.00, OFF	0.15	0.15	False	Differential Current Alarm PU (TAP)		False
1	87AD	Range = 1.00 to 120.00	5.00	5.00	False	Differential Current Alarm Delay (seconds)		False
1	50PX1P	Range = 0.50 to 96.00, OFF	OFF	4.58	True	X Side Phase Inst Overcurrent Trip Level (amps)		False
1	50PX1D	Range = 0.00 to 400.00, OFF	0.00	0.51	True	X Side Phase Inst Overcurrent Trip Delay (seconds)		False
6 (Group LIK	Group LIKE 1%) and ((Setting = 50PX1D) or (Setting = 50PX1P) or (Setting = 87NTC) or (Setting = 87N2P) or (Setting = 87N2D) or (Setting = 87N1D) or (Setting = 87AP) or (Setting = 87AD							

Table Of Contents	5					
Report Date: March 08	8, 2022 09:12:48 a	m				
Database: C:\Users	Kevin.myrick\On	eDrive - Vert	iv Co\Doc	uments\Jobs\WJ	Hooper WPP\WJ-I	Hooper.rdb
<b>Device Information (</b>	Current)		Device I	nformation (Ot	her)	
Settings: 52-G1 AL 3-	-2-2022 (Current)		Settings:	51-G1 AL 7-26	-2021 (Other)	
Device: 700G 007			Device:	700G 007		
Part#: 0700G02CC	CCC6X850310		Part#:	0700G02CCCC	C6X850310	
FID: SEL-700G-F	R301-V1-Z007004	-D20210104	FID:	SEL-700G-R30	1-V1-Z007004-D2	0210104
BFID: SLBT7XX-F	R600-V0-Z000000	-D20200331	BFID:	SLBT-700G-RX	XXX-V0-Z006003-	DXXXXXXXX
Hidden (H): 0/6946	Changed: 5/5	Unchanged:	0/8189	Missing: 0/0	Invalid (I): 0/0	Designer (D): 0/0

	Page 2 of 2
Group 1	

Compared Settings					
Setting	52-G1 AL 3-2-2022 (Current)	51-G1 AL 7-26-2021 (Other)			
50PX1P	2 5.00	4.58			
50PX1D	0.50	0.51			
50GX1P	1.67	2.50			
50GX1D	1.50	0.00			
TR3	87U OR 87R OR 87N1T OR 87N2T OR 50PX1T OR 67GX1T	87U OR 87R OR 87N1T OR 87N2T OR 50PX1T			

## SEL-751 Settings Report

## **Overview Information**

File Name	52-GM AL 7-26-21
RDB	WJ-Hooper.rdb
Device	SEL-751
Setting Version Number	008
Part Number	751202CCCBC70851D10
Firmware ID	SEL-751-R300-V3-Z008004-D20210104
SELBoot Firmware ID	SLBT7XX-R600-V0-Z000000-D20200331

## Settings

Global		
Group 1		
Group 2		
Group 3		
Group 4		
Logic 1		
Logic 2		
Logic 3		
Logic 4		
Front Panel		
Report		
Port F		
Port 1		
Port 2		
Port 3		
Modbus User Map		
Settings Legend		
Visible Setting		
Hidden Setting		
Invalid Setting		

Global			Top
Setting	Description	Range	Value
PHROT	Phase Rotation	Select: ABC, ACB	ABC
FNOM	Rated Frequency (Hz)	Select: 50, 60	60
DATE_F	Date Format	Select: MDY, YMD, DMY	MDY
METHRES	Meter Cutoff Threshold	Select: Y, N	Y
FAULT	Fault Condition (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50G1P OR 50N1P OR 51P1P OR 51QP OR 50Q1P OR TRIP
EMP	Messenger Points Enable	Range = $1$ to $32$ , N	Ν
TGR	Group Change Delay (seconds)	Range = $0$ to $400$	3
SS1	Select Settings Group1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
SS2	Select Settings Group2 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS3	Select Settings Group3 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS4	Select Settings Group4 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
EPMU	Enable Synchronized Phasor Measurement	Select: Y, N	Ν
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE
UTC_OFF	Offset From UTC (hours, in 0.25 hour increments)	Range = $-24.00$ to $24.00$	0.00
DST_BEGM	Month To Begin DST	Range = $1$ to $12$ , OFF	OFF
52ABF	52A Interlock in BF Logic	Select: Y, N	Ν
50BFP	Breaker-Failure Current Detector Pickup (amps sec.)	Range = $0.10$ to $10.00$	0.10
BFD	Breaker Failure Delay (seconds)	Range = $0.00$ to $2.00$	0.50
ATD	Auxiliary Timer Delay (seconds)	Range = 0.00 to 2.00, OFF	OFF
BFI	Breaker Failure Initiate (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG TRIP
BFISID	Breaker Failure Initiate Seal-In Delay (seconds)	Range = 0.00 to 2.00, OFF	0.00
BFRTD	Breaker Retrip Delay (seconds)	Range = 0.00 to 2.00, OFF	0.05
BFTR	Breaker Failure Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
BFULTR	Breaker Failure Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
50PAFP	Arc-Flash Maximum Phase Overcurrent Pickup (amps sec.)	Range = 0.50 to 100.00, OFF	OFF

AOUTSLOT	Select Arc-Flash Output Slot	Select: 101_3, 401_4, 301_4	101_3
AFSENS1	Arc-Flash Input 1 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS2	Arc-Flash Input 2 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS3	Arc-Flash Input 3 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS4	Arc-Flash Input 4 Sensor Type	Select: NONE, POINT, FIBER	NONE
AO401AQ	AO401 Analog Quantity (Off, 1 analog quantity)	Range = Maximum of 1 Analog Elements	OFF
DCLOP	DC Battery LO Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
DCHIP	DC Battery HI Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
IN101D	IN101 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN102D	IN102 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN301D	IN301 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN302D	IN302 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN303D	IN303 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN304D	IN304 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN401D	IN401 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN402D	IN402 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN403D	IN403 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
EBMON	Enable Breaker Monitor	Select: Y, N	N
RSTTRGT	Reset Targets (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTENRGY	Reset Energy (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTMXMN	Reset Max/Min (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTDEM	Reset Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTPKDEM	Reset Peak Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DSABLSET	Disable Settings (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TIME_SRC	IRIG Time Source	Select: IRIG1, IRIG2	IRIG1
89EN2P	Enable Two Position Disconnects	Range = $1$ to $8$ , N	8
89NM2P1	Disconnect 1 Name	Range = ASCII string with a maximum length of 16.	2P1
		Valid range = The legal	

89A2P1	Disconnect 1 N/O Contact (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	0
89B2P1	Disconnect 1 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P1
89A2P1D	Disconnect 1 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P1D	Disconnect 1 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P1D	Disconnect 1 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P1	Disconnect 1 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P1
89CB2P1	Disconnect 1 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89CR2P1	Disconnect 1 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P1 OR 89CS2P1 OR 89AL2P1
89CT2P1	Disconnect 1 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P1
89RO2P1	Disconnect 1 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P1
89OB2P1	Disconnect 1 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89OR2P1	Disconnect 1 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P1 OR 89OS2P1 OR 89AL2P1
89OT2P1	Disconnect 1 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P1
89NM2P2	Disconnect 2 Name	Range = ASCII string with a maximum length of 16.	2P2
89A2P2	Disconnect 2 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P2	Disconnect 2 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P2
89A2P2D	Disconnect 2 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P2D	Disconnect 2 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P2D	Disconnect 2 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P2	Disconnect 2 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P2
89CB2P2	Disconnect 2 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT	89AL2P2

		R_TRIG F_TRIG	
89CR2P2	Disconnect 2 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P2 OR 89CS2P2 OR 89AL2P2
89CT2P2	Disconnect 2 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P2
89RO2P2	Disconnect 2 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P2
89OB2P2	Disconnect 2 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P2
89OR2P2	Disconnect 2 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P2 OR 89OS2P2 OR 89AL2P2
89OT2P2	Disconnect 2 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P2
89NM2P3	Disconnect 3 Name	Range = ASCII string with a maximum length of 16.	2P3
89A2P3	Disconnect 3 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P3	Disconnect 3 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P3
89A2P3D	Disconnect 3 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P3D	Disconnect 3 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P3D	Disconnect 3 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P3	Disconnect 3 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P3
89CB2P3	Disconnect 3 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89CR2P3	Disconnect 3 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P3 OR 89CS2P3 OR 89AL2P3
89CT2P3	Disconnect 3 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P3
89RO2P3	Disconnect 3 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P3
89OB2P3	Disconnect 3 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89OR2P3	Disconnect 3 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P3 OR 89OS2P3 OR 89AL2P3

89OT2P3	Disconnect 3 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P3
89NM2P4	Disconnect 4 Name	Range = ASCII string with a maximum length of 16.	2P4
89A2P4	Disconnect 4 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P4	Disconnect 4 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P4
89A2P4D	Disconnect 4 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P4D	Disconnect 4 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P4D	Disconnect 4 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P4	Disconnect 4 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P4
89CB2P4	Disconnect 4 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89CR2P4	Disconnect 4 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P4 OR 89CS2P4 OR 89AL2P4
89CT2P4	Disconnect 4 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P4
89RO2P4	Disconnect 4 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P4
89OB2P4	Disconnect 4 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89OR2P4	Disconnect 4 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P4 OR 89OS2P4 OR 89AL2P4
89OT2P4	Disconnect 4 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P4
89NM2P5	Disconnect 5 Name	Range = ASCII string with a maximum length of 16.	2P5
89A2P5	Disconnect 5 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P5	Disconnect 5 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P5
89A2P5D	Disconnect 5 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P5D	Disconnect 5 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P5D	Disconnect 5 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00,	0.33

		OFF	
89RC2P5	Disconnect 5 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P5
89CB2P5	Disconnect 5 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89CR2P5	Disconnect 5 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P5 OR 89CS2P5 OR 89AL2P5
89CT2P5	Disconnect 5 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P5
89RO2P5	Disconnect 5 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P5
89OB2P5	Disconnect 5 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89OR2P5	Disconnect 5 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P5 OR 89OS2P5 OR 89AL2P5
89OT2P5	Disconnect 5 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P5
89NM2P6	Disconnect 6 Name	Range = ASCII string with a maximum length of 16.	2P6
89A2P6	Disconnect 6 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P6	Disconnect 6 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P6
89A2P6D	Disconnect 6 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P6D	Disconnect 6 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P6D	Disconnect 6 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P6	Disconnect 6 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P6
89CB2P6	Disconnect 6 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89CR2P6	Disconnect 6 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P6 OR 89CS2P6 OR 89AL2P6
89CT2P6	Disconnect 6 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P6
89RO2P6	Disconnect 6 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P6

89OB2P6	Disconnect 6 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89OR2P6	Disconnect 6 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P6 OR 89OS2P6 OR 89AL2P6
89OT2P6	Disconnect 6 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P6
89NM2P7	Disconnect 7 Name	Range = ASCII string with a maximum length of 16.	2P7
89A2P7	Disconnect 7 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P7	Disconnect 7 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P7
89A2P7D	Disconnect 7 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P7D	Disconnect 7 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P7D	Disconnect 7 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P7	Disconnect 7 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P7
89CB2P7	Disconnect 7 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89CR2P7	Disconnect 7 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P7 OR 89CS2P7 OR 89AL2P7
89CT2P7	Disconnect 7 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P7
89RO2P7	Disconnect 7 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P7
89OB2P7	Disconnect 7 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89OR2P7	Disconnect 7 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P7 OR 89OS2P7 OR 89AL2P7
89OT2P7	Disconnect 7 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P7
89NM2P8	Disconnect 8 Name	Range = ASCII string with a maximum length of 16.	2P8
89A2P8	Disconnect 8 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P8	Disconnect 8 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT	NOT 89A2P8

		R_TRIG F_TRIG	1
89A2P8D	Disconnect 8 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P8D	Disconnect 8 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P8D	Disconnect 8 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P8	Disconnect 8 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P8
89CB2P8	Disconnect 8 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89CR2P8	Disconnect 8 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P8 OR 89CS2P8 OR 89AL2P8
89CT2P8	Disconnect 8 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P8
89RO2P8	Disconnect 8 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P8
89OB2P8	Disconnect 8 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89OR2P8	Disconnect 8 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P8 OR 89OS2P8 OR 89AL2P8
89OT2P8	Disconnect 8 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P8
89EN3P	Enable Three Position Disconnects	Range = $1$ to $2$ , N	N
EN_LRC	Enable Local Remote Control	Select: Y, N	Ν
SC850BM	IEC 61850 Blocked Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SC850TM	IEC 61850 Test Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Group 1 Top			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	SEL-751
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	52-GM RELAY
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	240
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	240
PTR	PT Ratio	Range = 1.00 to 10000.00	35.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = $1.00$ to $10000.00$	35.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Y
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	34.50
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	5.00
50G1D	Residual Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50G1TC	Residual Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
		Range = $0.25$ to $100.00$ ,	

50G4P	Residual Overcurrent Trip Pickup (amps sec.)	OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	5.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.03
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	2.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
	1	<u></u>	1,

51G2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1 \text{ to } 3, \text{ N}$	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	108.00
27PP1D	Phase-Phase Undervoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	12.00
27S1D	Channel VS Undervoltage Delay 1 (seconds)	Range = 0.00 to 120.00	0.00
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	132.00
59PP1D	Phase-Phase Overvoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	Υ
25VLO	Voltage Window - Low Threshold (volts)	Range = $0.00$ to $300.00$	108.00
25VHI	Voltage Window - High Threshold (volts)	Range = $0.00$ to $300.00$	132.00
25RCF	Voltage Ratio Correction Factor	Range = $0.50$ to $2.00$	1.00
25SF	Maximum Slip Frequency (Hz)	Range = $0.05$ to $0.50$	0.20
25ANG1	Maximum Angle 1 (degrees)	Range = $0$ to $80$	15
25ANG2	Maximum Angle 2 (degrees)	Range = $0$ to $80$	15
SYNCPH	Synchronism Check Phase (VAB,VBC,VCA or deg lag VAB)	Select: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, VAB, VBC, VCA	VAB
TCLOSD	Breaker Close Time for Angle Compensation (milliseconds)	Range = 1 to 1000, OFF	OFF
BSYNCH	Block Synchronism Check (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A

SLGTPPower Factor Lag Trip PickupRange = 0.05 to 0.99, OFFOFFSSLDTPPower Factor Lag Alarm PickupRange = 0.05 to 0.99, OFFOFFSSLDAPPower Factor Lag Alarm PickupRange = 0.05 to 0.99, OFFOFFSSLDAPPower Factor Lag Alarm PickupRange = 0.05 to 0.99, OFFOFFSID1TDPrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TDPrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TDPrequency1 Torque Control Equation (SELogic)Valid range = The legal operators: AND 0R NOT181D2TPFrequency2 Trip Pickup (Hz)OFF61.0081D2TDPrequency2 Trip Delay (seconds)Range = 0.00 to 400.000.0081D2TDFrequency2 Trip Delay (seconds)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency6 Trip Pickup (Hz)Range = 0.10 to 15.00, OFF0.6081D4TPRa	LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SLDTP Power Factor Lead Trip Pickup Range = 0.05 to 0.99, OFF OFF   S5LGAP Power Factor Lead Alarm Pickup Range = 0.05 to 0.99, OFF OFF   S1DAP Power Factor Lead Alarm Pickup Range = 15.00 to 70.00, OFF S9,00   S1D1TP Frequency1 Trip Delay (seconds) Range = 10.05 to 0.99, OFF OFF   S1D1TD Frequency1 Trip Delay (seconds) Range = 10.00 to 400.00 0.00   81D1TD Frequency1 Trip Delay (seconds) Range = 15.00 to 70.00, OFF 61.00   S1D2TP Frequency2 Trip Delay (seconds) Range = 15.00 to 70.00, OFF 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 15.00 to 70.00, OFF 61.00   81D2TD Frequency2 Torque Control Equation (SELogic) Valid range = The legal operators: AND OR NOT R. TRIG F_TRIG 1   81D3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D4TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Picku	55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
SSLGAP Power Factor Lag Alarm Pickup Range = 0.05 to 0.99, OFF OFF   SSLDAP Power Factor Lad Alarm Pickup Range = 1.00 to 0.00, 00F OFF   81D1TP Frequency1 Trip Pickup (Hz) Range = 15.00 to 70.00, 0FF 59.00   81D1TD Frequency1 Trip Delay (seconds) Range = 10.00 to 400.00 0.00   81D1TC Frequency1 Torque Control Equation (SELogic) Valid range = The legal operators: AND 0R NOT R_TRIG F_TRIG 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 15.00 to 70.00, 0FF 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 15.00 to 70.00, 0FF 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 15.00 to 70.00, 0FF 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 15.00 to 70.00, 0FF 0FF   81D3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, 0FF 0FF   81D4TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, 0FF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, 0FF 0FF   81D4TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, 0FF 0FF   81D5TP Frequency6 Trip Pic	55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
S5LDAPPower Factor Lead Alarm PickupRange = 0.05 to 0.99, OFFOFF81D1TPFrequency1 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF\$9,0081D1TDFrequency1 Trip Delay (seconds)Range = 15.00 to 70.00, OFF0.0081D1TCFrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TCFrequency1 Trip Delay (seconds)Range = 15.00 to 70.00, OFF61.0081D2TPFrequency2 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Trip Delay (seconds)Range = 15.00 to 70.00, OFF0.0081D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG181D3TPFrequency2 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81R1TDRate-of-Change of Frequency ElementsSelect: N. 1.4181RSUPValtage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.00 to 60.000.2581R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.00 to 60.000.25	55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TPFrequency1 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF59.0081D1TDFrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TCFrequency1 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT181D2TPFrequency2 Trip Dickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Trip Dickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG181D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D8TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81R1TDRate-of-Change of Frequency ElementsSelect: N, 1.4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (curvis)Range = 0.5 to 10.0, OFF0FF81R1TDRate-of-Change of Frequency Trip 1 Dickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Dickup (seconds)Range = 0.00 to 60.000.2581R1TDRate-of-Change of Frequency Trip 1 Dickup (seconds)Range = 0	55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TD   Frequency1 Trip Delay (seconds)   Range = 0.00 to 400.00   0.00     81D1TC   Frequency1 Torque Control Equation (SELogic)   Valid range = The legal operators: AND OR NOT <u>R TRIG F_TRIG</u> 1     81D2TP   Frequency2 Trip Delay (seconds)   Range = 15.00 to 70.00, OFF   61.00     81D2TD   Frequency2 Trip Delay (seconds)   Range = 0.00 to 400.00   0.00     81D2TD   Frequency2 Trip Delay (seconds)   Range = 15.00 to 70.00, OFF   61.00     81D2TD   Frequency2 Torque Control Equation (SELogic)   Valid range = The legal operators: AND OR NOT <u>R_TRIG F_TRIG</u> 0     81D3TP   Frequency3 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0   0     81D4TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0   0     81D5TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0   0     81D6TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0   0     81D5TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0   0     81N5TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0	81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	59.00
81D1TC Frequency1 Torque Control Equation (SELogic) Valid range = The legal operators: AND OR NOT R. TRIG F TRIG   81D2TP Frequency2 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF   81D2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   81D2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   81D2TC Frequency2 Torque Control Equation (SELogic) Valid range = The legal operators: AND OR NOT R 1   81D3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D4TP Frequency4 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D6TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81RSUP Voltage Supervision of Rate-of-Change of Frequency Range = 0.00 to 15.00, OFF 0FF   81RSUP Elements (volts) Ranee -0.10 to 15.00, OFF 0FF   81RTND Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec) Range = 0.10 to 15.00, OFF 0FF   81R1TD Rate-of-Change of	81D1TD	Frequency1 Trip Delay (seconds)	Range = 0.00 to 400.00	0.00
81D2TP Frequency2 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   81D2TC Frequency2 Torque Control Equation (SELogic) Valid range = The legal operators: AND OR NOT R 1   81D3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D4TP Frequency4 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency5 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency5 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81R1TP Readenate Acte-of-Change of Frequency Elements Select: N. 1-4 1   81R1TP Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec) <td>81D1TC</td> <td>Frequency1 Torque Control Equation (SELogic)</td> <td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td> <td>1</td>	81D1TC	Frequency1 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   81D2TC Frequency2 Torque Control Equation (SELogic) Valid range = The legal operators: AND OR NOT R.TRIG F_TRIG 1   81D3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D4TP Frequency4 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency5 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D6TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D6TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D6TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D8TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81R1 Enable Rate-of-Change of Frequency Elements Select: N, 1-4 1   81RVSUP Voltage Supervision of Rate-of-Change of Frequency Range = 0.5 to 10.0, OFF 0FF   81R1SUP Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec) Range = 0.10 to 50.00, O-50 0.50   81R1TD Rate-of-Change of Frequency Trip 1 Delay (seconds) Range = 0.00 to 60.00 0.00   81R1TD<	81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	61.00
81D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R TRIG F TRIG181D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPElements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (volts)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 50.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = 0.10 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)NN1EDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: THM, ROL5.005.00PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.000312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF <t< td=""><td>81D2TD</td><td>Frequency2 Trip Delay (seconds)</td><td>Range = <math>0.00</math> to <math>400.00</math></td><td>0.00</td></t<>	81D2TD	Frequency2 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, 	81D2TC	Frequency2 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency 	81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, 	81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
$81D6TP$ Frequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF $E81R$ Enable Rate-of-Change of Frequency ElementsSelect: N, 1-41 $81RVSUP$ Voltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.0 $81RISUP$ Current Supervision of Rate-of-Change of Frequency 	81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4I81RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, 	81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, 	E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	1
81RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1D0Rate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81RVSUP	Voltage Supervision of Rate-of-Change of Frequency Elements (volts)	Range = 12.5 to 300.0, OFF	96.0
81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TRNDRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, 	81RISUP	Current Supervision of Rate-of-Change of Frequency Elements (amps)	Range = 0.5 to 10.0, OFF	OFF
81R1TRNDRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, 	81R1TP	Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)	Range = 0.10 to 15.00, OFF	0.50
81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, 	81R1TRND	Rate-of-Change of Frequency Trend 1	Select: INC, DEC, ABS	ABS
81R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1TD	Rate-of-Change of Frequency Trip 1 Delay (seconds)	Range = $0.10$ to $60.00$	0.25
81R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1DO	Rate-of-Change of Frequency Dropout 1 Delay (seconds)	Range = $0.00$ to $60.00$	0.00
E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1TC	Rate-of-Change of Frequency Torque Control 1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	N
DMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF $5.00$ GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$ 312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$	EDEM	Demand Metering	Select: THM, ROL	THM
PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
	3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00

EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	3P1
3PWR1P	Three Phase Power Element Pickup (VA)	Range = 1.0 to 6500.0, OFF	50.0
PWR1T	Power Element Type	Select: +WATTS, - WATTS, +VARS, -VARS	-WATTS
PWR1D	Power Element Time Delay (seconds)	Range = $0.0$ to 240.0	0.0
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to 400.0, OFF	OFF
TR	Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 51P1T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 50P1P OR 50G1P OR 50N1P)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	IN101
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 1 <u>Top</u>			

Group 2			<u>Top</u>
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
ZOSMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
ZOSANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to $100.00$ ,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	Ν
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Group 3			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = 0.10 to 510.00	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = 0.00 to 90.00	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	N
51CCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P2RS	EM Reset Delay	Select: Y, N	N
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 3			Тор

Group 4			Top
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Ν
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	Ν
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = $2.00$ to $300.00$ ,	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = $2.00$ to $300.00$ , OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 4			
Logic 1 Top			
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Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	10
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	10
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA

RST08         Valid range = The legal operators: ADD OR NOT R_TRIG F_TRIG         NA           SET09         (SELogic)         Valid range = The legal operators: ADD OR NOT R_TRIG F_TRIG         NA           RST09         (SELogic)         Valid range = The legal operators: ADD OR NOT R_TRIG F_TRIG         NA           RST09         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           SET10         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           SV110         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           SV01PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV01DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV01D         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV02DO         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV02DO         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV02DV         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV02DV         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV03DD	SET08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET09     (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     NA       RST09     (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     NA       SET10     (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     NA       RST10     (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     NA       RST10     (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     NA       RST10     (SELogic)     Valid range = 0.00 to 3000.00     0.00       SV01PU     SV_Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV01DD     SV_Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       SV01     SV_Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     SOPIT OR SOGI OR SONIT OR SIPIT OR SOGI       SV02PU     SV_Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV02DO     SV_Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV021     SV_Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     (27PF1 OR 59PF dIJVE LINE SII       SV021     SV_Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV0320     SV_Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     (27PF1 OR 59PF dIJVE LINE SII   <	RST08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST09         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           SET10         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           RST10         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           RST10         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           SV01PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV01DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV01         SV_Input (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         SOPIT OR SOGI OR SONIT OR SIPIT OR SOGI           SV01         SV_Input (SELogic)         Range = 0.00 to 3000.00         0.00           SV02         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV02         SV_Input (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         (27PP1 OR SPPF H_IVE LINE SII           SV03PU         SV_Input (SELogic)         Range = 0.00 to 3000.00         0.00           SV03PU         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV03DD         SV_Timer Dropout (seconds)         R	SET09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET10(SELogic)Valid range - The legal operators: AND OR NOT R_TRIG F_TRIGNARST10(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNASV01PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV01DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV01SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSOPIT OR 50CI OR 50NIT OR 50CI OR 51NIT R DOR NOT R_TRIG F_TRIGSOPIT OR 50CI OR 51NIT OR 50CI OR 51NIT OR 51CI OR 51NIT OR 51CI OR 51NIT OR 51CI DOR 51NIT OR 50CISV02SV_Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV02DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(27PPI OR 59PF #LIVE LINE SII SV03PUSV03PUSV_Imput (SELogic)Range = 0.00 to 3000.000.00SV03DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DSV_Imput (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOT SV02 ANI 27S1 #SYNC CHECK OKSV04SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DSV_Timer Dropout (seconds)Range = The legal operators: AND OR NOT R_TRIG F_TRIGHALARM OR SALARM #ROTECTION REL	RST09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST10         (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         NA           SV01PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV01DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV01DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV01         SV_Input (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         SOP1T OR 50G1 OR 51N1T OR 51P1T OR 51G1 OR 51N1T #DIRECT TRIF           SV02PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV02DO         SV_Input (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         (27PP1 OR 59PF #LIVE LINE SII SV02           SV02         SV_Input (SELogic)         Valid range = 0.00 to 3000.00         0.00           SV03PU         SV_Imput (SELogic)         Range = 0.00 to 3000.00         0.00           SV033         SV_Imput (SELogic)         Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG         (NOT SV02 ANI 27S1) #SYNC C_TRIC F_TRIG           SV04         SV_Input (SELogic)         Valid range = 0.00 to 3000.00         0.00           SV044         SV_Input (SELogic)         Range = 0.00 to 3000.00         0.00           SV05         SV_Input	SET10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV01DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV01SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGS0P1T OR 50G1 OR 51N1T OR DIPT OR 51G1 OR 51N1T OR DIPT OR 51G1 OR 51N1T OR DIPT OR 51G1 OR 51N1T GRSV02SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV02SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05SV_Timer Pickup (seconds)	RST10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV01SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG $50P1T OR 50G1$ OR 51N1T 0R $\#D1P OR 51G1$ OR 51N1T 17 $\#D1P OR 51G1$ SV02PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.00 $0.00$ SV02DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV02SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG $(27PP1 OR 59PF$ $\#LIVE LINE SIISV03DUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03DSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DUSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DUSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DUSV_Timer Pickup (seconds)Range$	SV01PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV01 $SV_{-}$ Input (SELogic) $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIGSOP1T OR 50G1OR 50N1T ORS1D1T OR 51G1OR 51N1T#DIRECT TRIPSV02PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV02DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG(27PP1 OR 59PF#LIVE LINE SIISV03PUSV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV03DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTP_{-} TRIG(NOT SV02 ANI27S1) #SYNCCHECK OKSV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Input (SELogic)Range = 0.00 to 3000.$	SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV02DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(27PP1 OR 59PF #LIVE LINE SITSV03DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(NOT SV02 ANI 27S1) #SYNC CHECK OKSV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV04DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Range = 0.00 to 3000.000.00SV05DOSV_Timer P	SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T #DIRECT TRIP
SV02DO       SV_ Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV02       SV_ Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       (27PP1 OR 59PF #LIVE LINE SII         SV03PU       SV_ Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV03DO       SV_ Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV03DO       SV_ Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV03       SV_ Input (SELogic)       Range = 0.00 to 3000.00       0.00         SV03       SV_ Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       (NOT SV02 ANI 27S1) #SYNC CHECK OK         SV04PU       SV_ Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV04DO       SV_ Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV04       SV_ Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       HALARM OR SALARM #PROTECTION R_LAY FAIL         SV05       SV_ Input (SELogic)       Range = 0.00 to 3000.00       0.00         SV05DO       SV_ Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV05       SV_ Input (SELogic)       Qaid range = The legal operators: AND OR NOT R_TRIG F_TRIG       0	SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV02 $SV_{-}$ Input (SELogic) $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG(27PP1 OR 59PF#LIVE LINE SIISV03PUSV03PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG(NOT SV02 ANI27S1) #SYNCSV04SV_{-} Input (seconds)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DOSV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG0SV06PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06PUSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00<$	SV02DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(NOT SV02 ANI 27S1) #SYNC CHECK OKSV04SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGHALARM OR SALARM #PROTECTION RELAY FAILSV04SV_Input (SELogic)Valid range = 0.00 to 3000.000.00SV05DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV06PUSV_Input (SELogic)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00 <td>SV02</td> <td>SV_Input (SELogic)</td> <td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td> <td>(27PP1 OR 59PP1) #LIVE LINE SIDE</td>	SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(27PP1 OR 59PP1) #LIVE LINE SIDE
SV03DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_ Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ (NOT SV02 ANI 27S1) #SYNC CHECK OKSV04PUSV_ Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_ Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ HALARM OR SALARM #PROTECTION RELAY FAILSV04SV_ Input (SELogic)Valid range = 0.00 to 3000.000.00SV05DOSV_ Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_ Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV05DOSV_ Input (SELogic)Valid range = 0.00 to 3000.000.00SV05DOSV_ Input (SELogic)Range = 0.00 to 3000.000.00SV05DOSV_ Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV06PUSV_ Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV03PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV03 $SV_n Input (SELogic)$ Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ (NOT SV02 ANI 27S1) #SYNC CHECK OKSV04PU $SV_T Imer Pickup (seconds)$ Range = 0.00 to 3000.000.00 $SV04DO$ $SV_T Imer Dropout (seconds)$ Range = 0.00 to 3000.000.00 $SV04DO$ $SV_T Imer Dropout (seconds)$ Range = 0.00 to 3000.000.00 $SV04$ $SV_T Imer Dropout (seconds)$ Range = 0.00 to 3000.000.00 $SV04$ $SV_T Input (SELogic)$ $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIGHALARM ORSALARMPROTECTIONRELAY FAILSV05PUSV_T Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_T Imer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_I Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG0SV06PUSV_T Imput (SELogic)Range = 0.00 to 3000.000.00SV06PUSV_T Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_T Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_T Imer Dropout (seconds)Range = 0.00 to 3000.000.00$	SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ HALARM OR SALARM #PROTECTION RELAY FAILSV05PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV05SV_ Input (SELogic)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(NOT SV02 AND 27S1) #SYNC CHECK OK
SV04DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ HALARM OR SALARM #PROTECTION RELAY FAILSV05PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ 0SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04 $SV_{-}$ Input (SELogic) $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIGHALARM ORSALARM#PROTECTIONRELAY FAILSV05PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG0SV06PUSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00$	SV04DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV05PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM #PROTECTION RELAY FAIL
SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG $0$ SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.00 $0.00$ SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$	SV05PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV05       SV_ Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       0         SV06PU       SV_ Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV06DO       SV_ Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         Valid range = The legal       Valid range = The legal       Valid range = The legal	SV05DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV06PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV06DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           Valid range = The legal         Valid range = The legal         Valid range = The legal	SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV06DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         Valid range = The legal       Valid range = The legal       Valid range = The legal	SV06PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
Valid range = The legal	SV06DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV06     SV_ Input (SELogic)     operators: AND OR NOT     0       R_TRIG F_TRIG     0	SV06	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

SV07DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV07         SV_Input (SELogic)         Valid range = The legal operators: AND OR NOT RTRIG         0           SV08PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         1.00           SV08DO         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV08BU         SV_Input (SELogic)         Valid range = The legal operators: AND OR NOT RTRIG         0 #REVERSE POWER TRIP           SV09DU         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV09DU         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV010E         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV010E         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV10PU         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV10PU         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV10PU         SV_Timer Dropout (seconds)         Range = 0.00 to 3000.00         0.00           SV10PU         SV_Timer Pickup (seconds)         Range = 0.00 to 3000.00         0.00           SV10PU <td< th=""><th>SV07PU</th><th>SV_ Timer Pickup (seconds)</th><th>Range = 0.00 to 3000.00</th><th>0.00</th></td<>	SV07PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00																																																																																
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Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NN <tr <="" td=""><td>SV10DO</td><td>SV_ Timer Dropout (seconds)</td><td>Range = <math>0.00</math> to <math>3000.00</math></td><td>0.00</td></tr> <tr><td>OUT101FSOUT101 Fail-SafeSelect: Y, NNOUT101(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG GTRIPOUT102SU102 Fail-SafeSelect: Y, NNOUT102(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC OUT303 Fail-SafeOUT304SElogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelec</td><td>SV10</td><td>SV_Input (SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>0</td></tr> <tr><td>OUT101(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGTRIPOUT102FSOUT102 Fail-SafeSelect: Y, NNOUT102(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE mperators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE mperators: AND OR NOT R_TRIG F_TRIGOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUTFOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304(SELogic)Operators: AND OR NOT R_TRIG F_TR</br></br></td><td>OUT101FS</td><td>OUT101 Fail-Safe</td><td>Select: Y, N</td><td>Ν</td></tr> <tr><td>OUT102FSOUT102 Fail-SafeSelect: Y, NNOUT102(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT103(SELogic)Select: Y, NNOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Sultarage = The legal operators: AND OR NOT R_TRIG F_TRIGSv03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSv03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSv03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304(SELogic)Valid range = The legal operat</td><td>OUT101</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>TRIP</td></tr> <tr><td>OUT102(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0</br></br></td><td>OUT102FS</td><td>OUT102 Fail-Safe</td><td>Select: Y, N</td><td>N</td></tr> <tr><td>OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Select: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT303(SELogic)Select: Y, NNOUT303OUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Select: Y, NNOUT304(SELogic)Select: Y, NNOUT304(SELogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304Selogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304OUT304 Fail-SafeSelect: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT102</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>0</td></tr> <tr><td>OUT103<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV04T</math> #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV03T \#SYNC</math> CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV03T \#SYNC</math> CLOSE CIRCUITOUT302<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV03T \#SYNC</math> CHECK TO PLCOUT303<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>N</math>OUT303<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>N</math>OUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>N</math>OUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>0</math>OUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>0</math>OUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>0</math>OUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>0</math>OUT401FS<math>OUT401</math> Fail-Safe<math>Select: Y, N</math><math>N</math></math></math></math></math></math></math></math></math></math></math></math></td><td>OUT103FS</td><td>OUT103 Fail-Safe</td><td>Select: Y, N</td><td>Y</td></tr> <tr><td>OUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOUT304OUT401 Fail-SafeSelect: Y, NN</td><td>OUT103</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>SV04T #PROTECTIVE RELAY ALARM TO PLC</td></tr> <tr><td>OUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Select: Y, NNOUT303(SELogic)Select: Y, NNOUT304(SELogic)Select: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304SELogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT301FS</td><td>OUT301 Fail-Safe</td><td>Select: Y, N</td><td>Ν</td></tr> <tr><td>OUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG 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NNOUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math>0OUT304OUT304 Fail-SafeSelect: Y, NNOUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math>0OUT401FSOUT401 Fail-SafeSelect: Y, NN</math></math></math></td><td>OUT302</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>SV03T #SYNC CHECK TO PLC</td></tr> <tr><td>OUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT303FS</td><td>OUT303 Fail-Safe</td><td>Select: Y, N</td><td>Ν</td></tr> <tr><td>OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT303</td><td>(SELogic)</td><td>Valid range = The legal operators: 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OUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304OUT401 Fail-SafeSelect: Y, NN	OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν																																																																																
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OUT401FS OUT401 Fail-Safe Select: Y, N N	OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0																																																																																
	OUT401FS	OUT401 Fail-Safe	Select: Y, N	N																																																																																

OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 51P1T OR 51G1T OR SV08T #DIRECT TRIP TO PLC
OUT402FS	OUT402 Fail-Safe	Select: Y, N	Ν
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 1			Top

Logic 2			Тор
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 2			Тор

Logic 3			Тор
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	3.00
SV02DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 3			Top

Logic 4			Top
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03

SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	N
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 4			Тор

Front Panel <u>Top</u>			
Setting	Description	Range	Value
EDP	Display Points Enable	Range = $1$ to $32$ , N	5
ELB	Local Bits Enable	Range = 1 to 32, N	N
FP_TO	Front-Panel Timeout (mins)	Range = 1 to 30, OFF	15
FP_CONT	Front-Panel Contrast	Range = 1 to $16$	10
FP_AUTO	Front-Panel Automessages	Select: OVERRIDE, ROTATING	OVERRIDE
RSTLED	Reset Trip-Latched LEDs On Close	Select: Y, N	Ν
LEDENAC	ENABLED LED Asserted Color	Select: R, G, A	G
LEDTRPC	TRIP LED Asserted Color	Select: R, G, A	R
MAXACC	Maximum Access Level	Select: 1, 2	2
T01LEDL	Trip Latch T_LED	Select: Y, N	Y
T01LEDC	Target T01_LED Asserted Color (R,G,A)	Select: R, G, A	R
T01_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T #INSTANT OC
T02LEDL	Trip Latch T_LED	Select: Y, N	Y
T02LEDC	Target T02_LED Asserted Color (R,G,A)	Select: R, G, A	R
T02_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51AT OR 51BT OR 51CT OR 51P1T OR 51P2T #PHASE OC
T03LEDL	Trip Latch T_LED	Select: Y, N	Y
T03LEDC	Target T03_LED Asserted Color (R,G,A)	Select: R, G, A	R
T03_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51N1T OR 51G1T OR 51N2T OR 51G2T #GND/NEU OC
T04LEDL	Trip Latch T_LED	Select: Y, N	Y
T04LEDC	Target T04_LED Asserted Color (R,G,A)	Select: R, G, A	R
T04_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51QT #GND/NEU OC
T05LEDL	Trip Latch T_LED	Select: Y, N	Y
T05LEDC	Target T05_LED Asserted Color (R,G,A)	Select: R, G, A	R
T05_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	81D1T OR 81D2T OR 81D3T OR 81D4T #OVER/UNDER FREQUENCY
T06LEDL	Trip Latch T_LED	Select: Y, N	N
T06LEDC	Target T06_LED Asserted Color (R,G,A)	Select: R, G, A	R
T06_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT	(BFT OR T06_LED) AND NOT TRGTR

		R_TRIG F_TRIG	#BREAKER FAIL
PB1ALEDC	PB1A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB1A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB1BLEDC	PB1B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB1B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2ALEDC	PB2A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB2A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2BLEDC	PB2B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB2B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3ALEDC	PB3A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB3A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3BLEDC	PB3B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB3B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4ALEDC	PB4A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB4A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4BLEDC	PB4B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB4B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DP01	Display Point (60 characters)		TID, "{16}"
DP02	Display Point (60 characters)		0
DP03	Display Point (60 characters)		IN101, BREAKER, CLOSED, OPEN

DP04	Display Point (60 characters)		0
DP05	Display Point (60 characters)		)
Front Panel <u>Top</u>			

Report <u>Top</u>			
Setting	Description	Range	Value
ER	Event Report Trigger (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG 51P1P OR R_TRIG 51G1P OR R_TRIG 51N1P OR R_TRIG 50P1P OR R_TRIG 50G1P OR R_TRIG 50N1P
LER	Length of Event Report (cycles)	Select: 15, 64, 180	15
PRE	Prefault Length (cycles)	Range = $1$ to $10$	5
ESERDEL	Auto-Removal Enable	Select: Y, N	N
SER1	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	IN101, OUT301, 51P1T, 51G1T, 51N1T, 50P1P, 50G1T, 50N1T, SV08
SER2	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	52A
SER3	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	SV05T, SV02T
SER4	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	SALARM, HALARM
EALIAS	Enable ALIAS Settings	Range = $1$ to $20$ , N	Ν
FMR1NAM	Fast Message Read Name1 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR1
FMR1	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR2NAM	Fast Message Read Name2 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR2
FMR2	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR3NAM	Fast Message Read Name3 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR3
FMR3	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR4NAM	Fast Message Read Name4 (9 characters)	Range = ASCII string with a maximum length of $9$ .	FMR4
FMR4	(24 analog quantities)	Valid range $= 0$ , NA or a list of relay elements.	NA
RA01TYPE	Remote Analog 01 type	Select: I, F, L	I
RA02TYPE	Remote Analog 02 type	Select: I, F, L	Ι
RA03TYPE	Remote Analog 03 type	Select: I, F, L	I
RA04TYPE	Remote Analog 04 type	Select: I, F, L	Ι
RA05TYPE	Remote Analog 05 type	Select: I, F, L	Ι

Select: I, F, LSelect: I, F, L	I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I
Select: I, F, LSelect: I, F, L	I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I
Select: I, F, L         Select: I, F, L	I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I       I
Select: I, F, LSelect: I, F, L	I       I       I       I       I       I       I       I       I       I       I       I       I       I
Select: I, F, L	I       I       I       I       I       I       I       I       I       I       I       I       I       I
Select: I, F, L	I       I       I       I       I       I       I       I       I       I
Select: I, F, L	I       I       I       I       I       I       I       I
Select: I, F, L	
Select: I, F, L	I       I       I       I       I
Select: I, F, L Select: I, F, L Select: I, F, L Select: I, F, L	
Select: I, F, L Select: I, F, L Select: I, F, L	I I I
Select: I, F, L Select: I, F, L	
Select: I, F, L	
Select: I, F, L	Ι
Select: I, F, L	Ι
Select: I, F, L	I
Select: I, F, L	I
Select: I, F, L	Ι
Select: I, F, L	I
Select: I, F, L	I
Select: I, F, L	Ι
Range = Maximum of 17 Analog Elements	NA
Select: 5, 10, 15, 30, 60	15
	Select: I, F, LSelect: 5, 10, 15, 30, 60

Port F			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	N
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = $0$ to $30$	0
RTSCTS	Hardware Handshaking	Select: Y, N	N
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
Port F			Тор

Port 1 <u>Top</u>			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
EETHFWU	Enable Ethernet Firmware Upgrade	Select: Y, N	N
IPADDR	Device IP Address [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.153
SUBNETM	Subnet Mask [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	255.255.255.0
DEFRTR	Default Router Gateway [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.1
ЕТСРКА	Enable TCP Keep-Alive	Select: Y, N	Y
KAIDLE	TCP Keep-Alive Idle Range (seconds)	Range = $1$ to $20$	10
KAINTV	TCP Keep-Alive Interval Range (seconds)	Range = $1$ to $20$	1
KACNT	TCP Keep-Alive Count Range	Range = $1$ to $20$	6
ETELNET	Enable Telnet	Select: Y, N	Υ
MAXACC	Maximum Access Level	Select: 1, 2, C	2
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
TPORT	Telnet Port	Range = 1025 to 65534, 23	23
TCBAN	Telnet Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	TERMINAL SERVER
TIDLE	Telnet Port Timeout (mins)	Range = $1$ to $30$	15
FASTOP	Fast Operate	Select: Y, N	Ν
EFTPSERV	Enable FTP	Select: Y, N	Υ
FTPACC	FTP Maximum Access Level	Select: 1, 2, C	2
FTPUSER	FTP User Name (20 characters)	Range = ASCII string with a maximum length of 20.	FTPUSER
FTPCBAN	FTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	FTP SERVER
FTPIDLE	FTP Idle Time (mins)	Range = $5$ to $255$	5
E61850	Enable IEC 61850 Protocol	Select: Y, N	Υ
EGSE	Enable IEC 61850 GOOSE	Select: Y, N	Y
EMMSFS	Enable MMS File Services	Select: Y, N	Υ
E850MBC	Enable 61850 Mode/Behavior Control	Select: Y, N	Ν
EOFFMTX	Enable GOOSE Tx in Off Mode	Select: Y, N	Ν
EMOD	Enable Modbus Sessions	Select: 0-2	0
EHTTP	Enable HTTP Server	Select: Y, N	Υ
HTTPACC	HTTP Maximum Accesss Level	Select: 1, 2	2
HTTPPORT	HTTP Server TCP/IP Port Number	Range = 1 to $65534$	80
HTTPBAN	HTTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	THIS SYSTEM IS FOR THE USE OF AUTHORIZED PERSONNEL

			ONLY.
HTTPIDLE	HTTP Web Server Timeout (minutes)	Range $= 1$ to $60$	10
ESNTP	Enable SNTP Client	Select: OFF, UNICAST, MANYCAST, BROADCAST	OFF
EPTP	Enable PTP	Select: Y, N	Ν
Port 1			
			<u>Тор</u>

Port 2			Top
Setting	Description	Range	Value
Port 2	·		Тор

Port 3			Top
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU, MBA, MBB, MB8A, MB8B, MBTA, MBTB	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	Ν
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to $30$	5
RTSCTS	Hardware Handshaking	Select: Y, N	Ν
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
FASTOP	Fast Operate	Select: Y, N	Ν
Port 3			<u>Тор</u>

Modbus U	Modbus User Map Top			
Setting	Description	Range	Value	
MOD_001	USER REG#001 (8 characters)	Range = Maximum of 1 Digital Elements	IA_MAG	
MOD_002	USER REG#002 (8 characters)	Range = Maximum of 1 Digital Elements	IB_MAG	
MOD_003	USER REG#003 (8 characters)	Range = Maximum of 1 Digital Elements	IC_MAG	
MOD_004	USER REG#004 (8 characters)	Range = Maximum of 1 Digital Elements	IN_MAG	
MOD_005	USER REG#005 (8 characters)	Range = Maximum of 1 Digital Elements	IG_MAG	
MOD_006	USER REG#006 (8 characters)	Range = Maximum of 1 Digital Elements	IAV	
MOD_007	USER REG#007 (8 characters)	Range = Maximum of 1 Digital Elements	3I2	
MOD_008	USER REG#008 (8 characters)	Range = Maximum of 1 Digital Elements	UBI	
MOD_009	USER REG#009 (8 characters)	Range = Maximum of 1 Digital Elements	VAVE	
MOD_010	USER REG#010 (8 characters)	Range = Maximum of 1 Digital Elements	3V2	
MOD_011	USER REG#011 (8 characters)	Range = Maximum of 1 Digital Elements	UBV	
MOD_012	USER REG#012 (8 characters)	Range = Maximum of 1 Digital Elements	Р	
MOD_013	USER REG#013 (8 characters)	Range = Maximum of 1 Digital Elements	Q	
MOD_014	USER REG#014 (8 characters)	Range = Maximum of 1 Digital Elements	S	
MOD_015	USER REG#015 (8 characters)	Range = Maximum of 1 Digital Elements	PF	
MOD_016	USER REG#016 (8 characters)	Range = Maximum of 1 Digital Elements	FREQ	
MOD_017	USER REG#017 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIH	
MOD_018	USER REG#018 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIL	
MOD_019	USER REG#019 (8 characters)	Range = Maximum of 1 Digital Elements	МѠНЗРОН	
MOD_020	USER REG#020 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3POL	
MOD_021	USER REG#021 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIH	
MOD_022	USER REG#022 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIL	
		Range = Maximum of 1		

MOD_023	USER REG#023 (8 characters)	Digital Elements	MVRH3POH
MOD_024	USER REG#024 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3POL
MOD_025	USER REG#025 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PH
MOD_026	USER REG#026 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PL
MOD_027	USER REG#027 (8 characters)	Range = Maximum of 1 Digital Elements	RTDWDGMX
MOD_028	USER REG#028 (8 characters)	Range = Maximum of 1 Digital Elements	RTDBRGMX
MOD_029	USER REG#029 (8 characters)	Range = Maximum of 1 Digital Elements	RTDAMB
MOD_030	USER REG#030 (8 characters)	Range = Maximum of 1 Digital Elements	RTDOTHMX
MOD_031	USER REG#031 (8 characters)	Range = Maximum of 1 Digital Elements	IARMS
MOD_032	USER REG#032 (8 characters)	Range = Maximum of 1 Digital Elements	IBRMS
MOD_033	USER REG#033 (8 characters)	Range = Maximum of 1 Digital Elements	ICRMS
MOD_034	USER REG#034 (8 characters)	Range = Maximum of 1 Digital Elements	INRMS
MOD_035	USER REG#035 (8 characters)	Range = Maximum of 1 Digital Elements	IAMX
MOD_036	USER REG#036 (8 characters)	Range = Maximum of 1 Digital Elements	IAMN
MOD_037	USER REG#037 (8 characters)	Range = Maximum of 1 Digital Elements	IBMX
MOD_038	USER REG#038 (8 characters)	Range = Maximum of 1 Digital Elements	IBMN
MOD_039	USER REG#039 (8 characters)	Range = Maximum of 1 Digital Elements	ICMX
MOD_040	USER REG#040 (8 characters)	Range = Maximum of 1 Digital Elements	ICMN
MOD_041	USER REG#041 (8 characters)	Range = Maximum of 1 Digital Elements	INMX
MOD_042	USER REG#042 (8 characters)	Range = Maximum of 1 Digital Elements	INMN
MOD_043	USER REG#043 (8 characters)	Range = Maximum of 1 Digital Elements	IGMX
MOD_044	USER REG#044 (8 characters)	Range = Maximum of 1 Digital Elements	IGMN
MOD_045	USER REG#045 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMX
MOD_046	USER REG#046 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMN
MOD_047	USER REG#047 (8 characters)	Range = Maximum of 1 Digital Elements	KVAR3PMX
MOD_048	USER REG#048 (8 characters)	Range = Maximum of 1	KVAR3PMN

		Digital Elements	
MOD_049	USER REG#049 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMX
MOD_050	USER REG#050 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMN
MOD_051	USER REG#051 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMX
MOD_052	USER REG#052 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMN
MOD_053	USER REG#053 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_LO
MOD_054	USER REG#054 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_HI
MOD_055	USER REG#055 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_LO
MOD_056	USER REG#056 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_HI
MOD_057	USER REG#057 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_058	USER REG#058 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_059	USER REG#059 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_060	USER REG#060 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_061	USER REG#061 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_062	USER REG#062 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_063	USER REG#063 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_064	USER REG#064 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_065	USER REG#065 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_066	USER REG#066 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_067	USER REG#067 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_068	USER REG#068 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_069	USER REG#069 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_070	USER REG#070 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_071	USER REG#071 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_072	USER REG#072 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_073	USER REG#073 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_074	USER REG#074 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_075	USER REG#075 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_076	USER REG#076 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_077	USER REG#077 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_078	USER REG#078 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_079	USER REG#079 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_080	USER REG#080 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_081	USER REG#081 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_082	USER REG#082 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_083	USER REG#083 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_084	USER REG#084 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_085	USER REG#085 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_086	USER REG#086 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_087	USER REG#087 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_088	USER REG#088 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_089	USER REG#089 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_090	USER REG#090 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_091	USER REG#091 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_092	USER REG#092 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_093	USER REG#093 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_094	USER REG#094 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_095	USER REG#095 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_096	USER REG#096 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_097	USER REG#097 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_098	USER REG#098 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_099	USER REG#099 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_100	USER REG#100 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_101	USER REG#101 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_102	USER REG#102 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_103	USER REG#103 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_104	USER REG#104 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_105	USER REG#105 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_106	USER REG#106 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_107	USER REG#107 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_108	USER REG#108 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_109	USER REG#109 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_110	USER REG#110 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_111	USER REG#111 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_112	USER REG#112 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_113	USER REG#113 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_114	USER REG#114 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_115	USER REG#115 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_116	USER REG#116 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_117	USER REG#117 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_118	USER REG#118 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_119	USER REG#119 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_120	USER REG#120 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_121	USER REG#121 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_122	USER REG#122 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_123	USER REG#123 (8 characters)	Range = Maximum of 1	NA

		Digital Elements		
MOD_124	USER REG#124 (8 characters)	Range = Maximum of 1 Digital Elements	NA	
MOD_125	USER REG#125 (8 characters)	Range = Maximum of 1 Digital Elements	NA	
Modbus User Map <u>Top</u>				

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## **SEL-751 Settings Report**

Group U	Setting	Range	Default Value	Value	Delta	Description	Comments	Hidden
1	50P1P	Range = 0.25 to 100.00, OFF	10.00	34.50	True	Maximum Phase Overcurrent Trip Pickup (amps sec.)		False
1	50P1D	Range = 0.00 to 400.00, OFF	0.00	0.00	False	Maximum Phase Overcurrent Trip Delay (seconds)		False
1	50N1P	Range = 0.25 to 100.00, OFF	OFF	OFF	False	Neutral Overcurrent Trip Pickup (amps sec.)		False
1	50N1D	Range = 0.00 to 400.00, OFF	0.50	0.50	False	Neutral Overcurrent Trip Delay (seconds)		True
1	50G1P	Range = 0.25 to 100.00, OFF	OFF	5.00	True	Residual Overcurrent Trip Pickup (amps sec.)		False
1	50G1D	Range = 0.00 to 400.00, OFF	0.50	0.00	True	Residual Overcurrent Trip Delay (seconds)		False
1	51P1P	Range = 0.25 to 24.00, OFF	6.00	5.00	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51P1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U3	False	TOC Curve Selection		False
1	51P1TD	Range = 0.50 to 15.00	3.00	1.03	True	TOC Time Dial		False
1	51G1P	Range = 0.25 to 24.00, OFF	0.50	2.50	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51G1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U3	False	TOC Curve Selection		False
1	51G1TD	Range = 0.50 to 15.00	1.50	1.50	False	TOC Time Dial		False
1	TR	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T OR ORED51T OR ORED81T OR REMTRIP OR OC OR SV04T	50P1T OR 51P1T	True	Trip (SELogic)		False

Group = 1) and ((Setting = 50G1P) or (Setting = 50G1D) or (Setting = 50N1D) or (Setting = 50N1P) or (Setting = 50P1D) or (Setting = 50P1P) or (Setting = 51G1P) or (Setting = 51G1TD) or (Setting = 51G1C) o...

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Report Date: July 29, 2021 08:03:24 am	
Database: C:\Users\Kevin.myrick\OneDrive - Verti	tiv Co\Documents\Jobs\WJ Hooper WPP\WJ-Hooper.rdb
Device Information (Current)	Device Information (Other)
Settings: 52-GM AF (Current)	Settings: 52-GM AL 7-26-21 (Other)
Device: 751 008	Device: 751 008
Part#: 751202CCCBC70851D10	Part#: 751202CCCBC70851D10
FID: SEL-751-R300-V3-Z008004-D20210104	FID: SEL-751-R300-V3-Z008004-D20210104
BFID: SLBT7XX-R600-V0-Z000000-D20200331	BFID: SLBT-751-RXXX-V0-Z007003-DXXXXXXXX
Hidden (H): 0/6313 Changed: 7/7 Unchanged:	: 0/7566 Missing: 0/0 Invalid (I): 0/0 Designer (D): 0/0

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Group 1			
Compared Settings			
Setting	52-GM AF (Current)	52-GM AL 7-26-21 (Other)	
50P1P	10.00	34.50	
51P1P	6.00	5.00	
51P1TD	3.00	1.03	
TR	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T	50P1T OR 5 1P 1T	

Front Panel			
Compared Settings			
Setting	52-GM AF (Current)	52-GM AL 7-26-21 (Other)	
DP03	IN101, BREAKER, OPEN, CLOSED	IN101, BREAKER, CLOSED, OPEN	
DP05	1, "RELAY NOT IN SERVICE"	0	

Port F				
Compared	Compared Settings			
Setting	52-GM AF (Current)	52-GM AL 7-26-21 (Other)		
T_OUT	5	0		

## SEL-751 Settings Report

## **Overview Information**

File Name	52-GM AL 7-26-21
RDB	WJ-Hooper.rdb
Device	SEL-751
Setting Version Number	008
Part Number	751202CCCBC70851D10
Firmware ID	SEL-751-R300-V3-Z008004-D20210104
SELBoot Firmware ID	SLBT7XX-R600-V0-Z000000-D20200331

## Settings

Global Group 1 Group 2 Group 3 Group 4 Logic 1 Logic 2 Logic 3 Logic 4 Front Panel Report Port F Port F Port 1 Port 2 Port 3 Modbus User Map	
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Front Panel Report Port F Port 1 Port 2 Port 3 Modbus User Map Settings Legend	
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Port F Port 1 Port 2 Port 3 Modbus User Map Settings Legend	
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Port 3 Modbus User Map Settings Legend	
Modbus User Map Settings Legend	
Settings Legend	
Settings Legend	
Visible Setting	
Hidden Setting	
Invalid Setting	

Global				
Setting	Description	Range	Value	
PHROT	Phase Rotation	Select: ABC, ACB	ABC	
FNOM	Rated Frequency (Hz)	Select: 50, 60	60	
DATE_F	Date Format	Select: MDY, YMD, DMY	MDY	
METHRES	Meter Cutoff Threshold	Select: Y, N	Y	
FAULT	Fault Condition (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50G1P OR 50N1P OR 51P1P OR 51QP OR 50Q1P OR TRIP	
EMP	Messenger Points Enable	Range = $1$ to $32$ , N	Ν	
TGR	Group Change Delay (seconds)	Range = $0$ to $400$	3	
SS1	Select Settings Group1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1	
SS2	Select Settings Group2 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
SS3	Select Settings Group3 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
SS4	Select Settings Group4 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
EPMU	Enable Synchronized Phasor Measurement	Select: Y, N	Ν	
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE	
UTC_OFF	Offset From UTC (hours, in 0.25 hour increments)	Range = $-24.00$ to $24.00$	0.00	
DST_BEGM	Month To Begin DST	Range = $1$ to $12$ , OFF	OFF	
52ABF	52A Interlock in BF Logic	Select: Y, N	Ν	
50BFP	Breaker-Failure Current Detector Pickup (amps sec.)	Range = $0.10$ to $10.00$	0.10	
BFD	Breaker Failure Delay (seconds)	Range = $0.00$ to $2.00$	0.50	
ATD	Auxiliary Timer Delay (seconds)	Range = 0.00 to 2.00, OFF	OFF	
BFI	Breaker Failure Initiate (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG TRIP	
BFISID	Breaker Failure Initiate Seal-In Delay (seconds)	Range = 0.00 to 2.00, OFF	0.00	
BFRTD	Breaker Retrip Delay (seconds)	Range = 0.00 to 2.00, OFF	0.05	
BFTR	Breaker Failure Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
BFULTR	Breaker Failure Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
50PAFP	Arc-Flash Maximum Phase Overcurrent Pickup (amps sec.)	Range = 0.50 to 100.00, OFF	OFF	

AOUTSLOT	Select Arc-Flash Output Slot	Select: 101_3, 401_4, 301_4	101_3
AFSENS1	Arc-Flash Input 1 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS2	Arc-Flash Input 2 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS3	Arc-Flash Input 3 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS4	Arc-Flash Input 4 Sensor Type	Select: NONE, POINT, FIBER	NONE
AO401AQ	AO401 Analog Quantity (Off, 1 analog quantity)	Range = Maximum of 1 Analog Elements	OFF
DCLOP	DC Battery LO Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
DCHIP	DC Battery HI Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
IN101D	IN101 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN102D	IN102 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN301D	IN301 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN302D	IN302 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN303D	IN303 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN304D	IN304 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN401D	IN401 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN402D	IN402 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN403D	IN403 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
EBMON	Enable Breaker Monitor	Select: Y, N	N
RSTTRGT	Reset Targets (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTENRGY	Reset Energy (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTMXMN	Reset Max/Min (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTDEM	Reset Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTPKDEM	Reset Peak Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DSABLSET	Disable Settings (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TIME_SRC	IRIG Time Source	Select: IRIG1, IRIG2	IRIG1
89EN2P	Enable Two Position Disconnects	Range = $1$ to $8$ , N	8
89NM2P1	Disconnect 1 Name	Range = ASCII string with a maximum length of 16.	2P1
		Valid range = The legal	
89A2P1	Disconnect 1 N/O Contact (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	0
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89B2P1	Disconnect 1 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P1
89A2P1D	Disconnect 1 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P1D	Disconnect 1 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P1D	Disconnect 1 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P1	Disconnect 1 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P1
89CB2P1	Disconnect 1 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89CR2P1	Disconnect 1 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P1 OR 89CS2P1 OR 89AL2P1
89CT2P1	Disconnect 1 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P1
89RO2P1	Disconnect 1 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P1
89OB2P1	Disconnect 1 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89OR2P1	Disconnect 1 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P1 OR 89OS2P1 OR 89AL2P1
89OT2P1	Disconnect 1 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P1
89NM2P2	Disconnect 2 Name	Range = ASCII string with a maximum length of 16.	2P2
89A2P2	Disconnect 2 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P2	Disconnect 2 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P2
89A2P2D	Disconnect 2 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P2D	Disconnect 2 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P2D	Disconnect 2 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P2	Disconnect 2 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P2
89CB2P2	Disconnect 2 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT	89AL2P2

		R_TRIG F_TRIG	
89CR2P2	Disconnect 2 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P2 OR 89CS2P2 OR 89AL2P2
89CT2P2	Disconnect 2 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P2
89RO2P2	Disconnect 2 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P2
89OB2P2	Disconnect 2 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P2
89OR2P2	Disconnect 2 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P2 OR 89OS2P2 OR 89AL2P2
89OT2P2	Disconnect 2 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P2
89NM2P3	Disconnect 3 Name	Range = ASCII string with a maximum length of 16.	2P3
89A2P3	Disconnect 3 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P3	Disconnect 3 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P3
89A2P3D	Disconnect 3 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P3D	Disconnect 3 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P3D	Disconnect 3 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P3	Disconnect 3 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P3
89CB2P3	Disconnect 3 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89CR2P3	Disconnect 3 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P3 OR 89CS2P3 OR 89AL2P3
89CT2P3	Disconnect 3 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P3
89RO2P3	Disconnect 3 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P3
89OB2P3	Disconnect 3 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89OR2P3	Disconnect 3 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P3 OR 89OS2P3 OR 89AL2P3

89OT2P3	Disconnect 3 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P3
89NM2P4	Disconnect 4 Name	Range = ASCII string with a maximum length of 16.	2P4
89A2P4	Disconnect 4 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P4	Disconnect 4 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P4
89A2P4D	Disconnect 4 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P4D	Disconnect 4 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P4D	Disconnect 4 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P4	Disconnect 4 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P4
89CB2P4	Disconnect 4 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89CR2P4	Disconnect 4 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P4 OR 89CS2P4 OR 89AL2P4
89CT2P4	Disconnect 4 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P4
89RO2P4	Disconnect 4 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P4
89OB2P4	Disconnect 4 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89OR2P4	Disconnect 4 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P4 OR 89OS2P4 OR 89AL2P4
89OT2P4	Disconnect 4 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P4
89NM2P5	Disconnect 5 Name	Range = ASCII string with a maximum length of 16.	2P5
89A2P5	Disconnect 5 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P5	Disconnect 5 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P5
89A2P5D	Disconnect 5 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P5D	Disconnect 5 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P5D	Disconnect 5 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00,	0.33

		OFF	
89RC2P5	Disconnect 5 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P5
89CB2P5	Disconnect 5 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89CR2P5	Disconnect 5 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P5 OR 89CS2P5 OR 89AL2P5
89CT2P5	Disconnect 5 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P5
89RO2P5	Disconnect 5 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P5
89OB2P5	Disconnect 5 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89OR2P5	Disconnect 5 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P5 OR 89OS2P5 OR 89AL2P5
89OT2P5	Disconnect 5 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P5
89NM2P6	Disconnect 6 Name	Range = ASCII string with a maximum length of 16.	2P6
89A2P6	Disconnect 6 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P6	Disconnect 6 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P6
89A2P6D	Disconnect 6 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P6D	Disconnect 6 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P6D	Disconnect 6 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P6	Disconnect 6 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P6
89CB2P6	Disconnect 6 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89CR2P6	Disconnect 6 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P6 OR 89CS2P6 OR 89AL2P6
89CT2P6	Disconnect 6 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P6
89RO2P6	Disconnect 6 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P6

89OB2P6	Disconnect 6 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89OR2P6	Disconnect 6 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P6 OR 89OS2P6 OR 89AL2P6
89OT2P6	Disconnect 6 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P6
89NM2P7	Disconnect 7 Name	Range = ASCII string with a maximum length of 16.	2P7
89A2P7	Disconnect 7 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P7	Disconnect 7 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P7
89A2P7D	Disconnect 7 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P7D	Disconnect 7 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P7D	Disconnect 7 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P7	Disconnect 7 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P7
89CB2P7	Disconnect 7 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89CR2P7	Disconnect 7 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P7 OR 89CS2P7 OR 89AL2P7
89CT2P7	Disconnect 7 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P7
89RO2P7	Disconnect 7 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P7
89OB2P7	Disconnect 7 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89OR2P7	Disconnect 7 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P7 OR 89OS2P7 OR 89AL2P7
89OT2P7	Disconnect 7 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P7
89NM2P8	Disconnect 8 Name	Range = ASCII string with a maximum length of 16.	2P8
89A2P8	Disconnect 8 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P8	Disconnect 8 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT	NOT 89A2P8

		R_TRIG F_TRIG	1
89A2P8D	Disconnect 8 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P8D	Disconnect 8 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P8D	Disconnect 8 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P8	Disconnect 8 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P8
89CB2P8	Disconnect 8 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89CR2P8	Disconnect 8 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P8 OR 89CS2P8 OR 89AL2P8
89CT2P8	Disconnect 8 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P8
89RO2P8	Disconnect 8 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P8
89OB2P8	Disconnect 8 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89OR2P8	Disconnect 8 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P8 OR 89OS2P8 OR 89AL2P8
89OT2P8	Disconnect 8 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P8
89EN3P	Enable Three Position Disconnects	Range = $1$ to $2$ , N	N
EN_LRC	Enable Local Remote Control	Select: Y, N	Ν
SC850BM	IEC 61850 Blocked Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SC850TM	IEC 61850 Test Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	SEL-751
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	52-GM RELAY
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	240
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	240
PTR	PT Ratio	Range = 1.00 to 10000.00	35.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = $1.00$ to $10000.00$	35.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Y
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	34.50
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	5.00
50G1D	Residual Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50G1TC	Residual Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
		Range = $0.25$ to $100.00$ ,	

50G4P	Residual Overcurrent Trip Pickup (amps sec.)	OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	5.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.03
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	2.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
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51G2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1 \text{ to } 3, \text{ N}$	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	108.00
27PP1D	Phase-Phase Undervoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	12.00
27S1D	Channel VS Undervoltage Delay 1 (seconds)	Range = 0.00 to 120.00	0.00
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	132.00
59PP1D	Phase-Phase Overvoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	Υ
25VLO	Voltage Window - Low Threshold (volts)	Range = $0.00$ to $300.00$	108.00
25VHI	Voltage Window - High Threshold (volts)	Range = $0.00$ to $300.00$	132.00
25RCF	Voltage Ratio Correction Factor	Range = $0.50$ to $2.00$	1.00
25SF	Maximum Slip Frequency (Hz)	Range = $0.05$ to $0.50$	0.20
25ANG1	Maximum Angle 1 (degrees)	Range = $0$ to $80$	15
25ANG2	Maximum Angle 2 (degrees)	Range = $0$ to $80$	15
SYNCPH	Synchronism Check Phase (VAB,VBC,VCA or deg lag VAB)	Select: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, VAB, VBC, VCA	VAB
TCLOSD	Breaker Close Time for Angle Compensation (milliseconds)	Range = 1 to 1000, OFF	OFF
BSYNCH	Block Synchronism Check (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A

SLGTPPower Factor Lag Trip PickupRange = 0.05 to 0.99, OFFOFFSSLDTPPower Factor Lag Alarm PickupRange = 0.05 to 0.99, OFFOFFSSLDAPPower Factor Lag Alarm PickupRange = 0.05 to 0.99, OFFOFFSSLDAPPower Factor Lag Alarm PickupRange = 0.05 to 0.99, OFFOFFSID1TDPrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TDPrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TDPrequency1 Torque Control Equation (SELogic)Valid range = The legal operators: AND 0R NOT181D2TPFrequency2 Trip Pickup (Hz)OFF61.0081D2TDPrequency2 Trip Delay (seconds)Range = 0.00 to 400.000.0081D2TDFrequency2 Trip Delay (seconds)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0.0FF81D3TPFrequency6 Trip Pickup (Hz)Range = 0.10 to 15.00, OFF0.6081D4TPRa	LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SLDTP     Power Factor Lead Trip Pickup     Range = 0.05 to 0.99, OFF     OFF       S5LGAP     Power Factor Lead Alarm Pickup     Range = 0.05 to 0.99, OFF     OFF       S1DAP     Power Factor Lead Alarm Pickup     Range = 15.00 to 70.00, OFF     S9,00       S1D1TP     Frequency1 Trip Delay (seconds)     Range = 10.05 to 0.99, OFF     OFF       S1D1TD     Frequency1 Trip Delay (seconds)     Range = 10.00 to 400.00     0.00       81D1TD     Frequency1 Trip Delay (seconds)     Range = 15.00 to 70.00, OFF     61.00       S1D2TP     Frequency2 Trip Delay (seconds)     Range = 15.00 to 70.00, OFF     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 15.00 to 70.00, OFF     61.00       81D2TD     Frequency2 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT R. TRIG F_TRIG     1       81D3TP     Frequency3 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D4TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Picku	55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
SSLGAP     Power Factor Lag Alarm Pickup     Range = 0.05 to 0.99, OFF     OFF       SSLDAP     Power Factor Lad Alarm Pickup     Range = 1.00 to 0.00, 00F     OFF       81D1TP     Frequency1 Trip Pickup (Hz)     Range = 15.00 to 70.00, 0FF     59.00       81D1TD     Frequency1 Trip Delay (seconds)     Range = 10.00 to 400.00     0.00       81D1TC     Frequency1 Torque Control Equation (SELogic)     Valid range = The legal operators: AND 0R NOT R_TRIG F_TRIG     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 15.00 to 70.00, 0FF     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 15.00 to 70.00, 0FF     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 15.00 to 70.00, 0FF     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 15.00 to 70.00, 0FF     0FF       81D3TP     Frequency3 Trip Pickup (Hz)     Range = 15.00 to 70.00, 0FF     0FF       81D4TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, 0FF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, 0FF     0FF       81D4TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, 0FF     0FF       81D5TP     Frequency6 Trip Pic	55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
S5LDAPPower Factor Lead Alarm PickupRange = 0.05 to 0.99, OFFOFF81D1TPFrequency1 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF\$9,0081D1TDFrequency1 Trip Delay (seconds)Range = 15.00 to 70.00, OFF0.0081D1TCFrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TCFrequency1 Trip Delay (seconds)Range = 15.00 to 70.00, OFF61.0081D2TPFrequency2 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Trip Delay (seconds)Range = 15.00 to 70.00, OFF0.0081D3TPFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG181D3TPFrequency2 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81R1TDRate-of-Change of Frequency ElementsSelect: N. 1.4181RSUPValtage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.00 to 60.000.2581R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.00 to 60.000.25	55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TPFrequency1 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF59.0081D1TDFrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TCFrequency1 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT181D2TPFrequency2 Trip Dickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Trip Dickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG181D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81D8TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF0FF81R1TDRate-of-Change of Frequency ElementsSelect: N, 1.4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (curvis)Range = 0.5 to 10.0, OFF0FF81R1TDRate-of-Change of Frequency Trip 1 Dickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Dickup (seconds)Range = 0.00 to 60.000.2581R1TDRate-of-Change of Frequency Trip 1 Dickup (seconds)Range = 0	55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TD       Frequency1 Trip Delay (seconds)       Range = 0.00 to 400.00       0.00         81D1TC       Frequency1 Torque Control Equation (SELogic)       Valid range = The legal operators: AND OR NOT <u>R TRIG F_TRIG</u> 1         81D2TP       Frequency2 Trip Delay (seconds)       Range = 15.00 to 70.00, OFF       61.00         81D2TD       Frequency2 Trip Delay (seconds)       Range = 0.00 to 400.00       0.00         81D2TD       Frequency2 Trip Delay (seconds)       Range = 15.00 to 70.00, OFF       61.00         81D2TD       Frequency2 Torque Control Equation (SELogic)       Valid range = The legal operators: AND OR NOT <u>R_TRIG F_TRIG</u> 0         81D3TP       Frequency3 Trip Pickup (Hz)       Range = 15.00 to 70.00, OFF       0       0         81D4TP       Frequency6 Trip Pickup (Hz)       Range = 15.00 to 70.00, OFF       0       0         81D5TP       Frequency6 Trip Pickup (Hz)       Range = 15.00 to 70.00, OFF       0       0         81D6TP       Frequency6 Trip Pickup (Hz)       Range = 15.00 to 70.00, OFF       0       0         81D5TP       Frequency6 Trip Pickup (Hz)       Range = 15.00 to 70.00, OFF       0       0         81N5TP       Frequency6 Trip Pickup (Hz)       Range = 15.00 to 70.00, OFF       0	81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	59.00
81D1TC     Frequency1 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT R. TRIG F TRIG       81D2TP     Frequency2 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF       81D2TD     Frequency2 Trip Delay (seconds)     Range = 0.00 to 400.00     0.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 0.00 to 400.00     0.00       81D2TC     Frequency2 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT R     1       81D3TP     Frequency3 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D4TP     Frequency4 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D6TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81RSUP     Voltage Supervision of Rate-of-Change of Frequency     Range = 0.00 to 15.00, OFF     0FF       81RISUP     Current Supervision of Rate-of-Change of Frequency     Range = 0.10 to 15.00, OFF     0FF       81R1TD     Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)     Range = 0.10 to 15.00, OFF     0FF       81R	81D1TD	Frequency1 Trip Delay (seconds)	Range = 0.00 to 400.00	0.00
81D2TP     Frequency2 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 0.00 to 400.00     0.00       81D2TC     Frequency2 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT R     1       81D3TP     Frequency3 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D4TP     Frequency4 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency5 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency5 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81R1TP     Readenate Acte-of-Change of Frequency Elements     Select: N. 1-4     1       81R1TP     Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec) <td>81D1TC</td> <td>Frequency1 Torque Control Equation (SELogic)</td> <td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td> <td>1</td>	81D1TC	Frequency1 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D2TD     Frequency2 Trip Delay (seconds)     Range = 0.00 to 400.00     0.00       81D2TC     Frequency2 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT R.TRIG F_TRIG     1       81D3TP     Frequency3 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D4TP     Frequency4 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D5TP     Frequency5 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D6TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D6TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D6TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81D8TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0FF       81R1     Enable Rate-of-Change of Frequency Elements     Select: N, 1-4     1       81RVSUP     Voltage Supervision of Rate-of-Change of Frequency     Range = 0.5 to 10.0, OFF     0FF       81R1SUP     Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)     Range = 0.10 to 50.00, O-50     0.50       81R1TD     Rate-of-Change of Frequency Trip 1 Delay (seconds)     Range = 0.00 to 60.00     0.00       81R1TD<	81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	61.00
81D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R TRIG F TRIG181D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPElements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (volts)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 50.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = 0.10 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)NN1EDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: THM, ROL5.005.00PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.000312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF <t< td=""><td>81D2TD</td><td>Frequency2 Trip Delay (seconds)</td><td>Range = <math>0.00</math> to <math>400.00</math></td><td>0.00</td></t<>	81D2TD	Frequency2 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, 	81D2TC	Frequency2 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency 	81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, 	81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
$81D6TP$ Frequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF $E81R$ Enable Rate-of-Change of Frequency ElementsSelect: N, 1-41 $81RVSUP$ Voltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.0 $81RISUP$ Current Supervision of Rate-of-Change of Frequency 	81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4I81RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, 	81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF96.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, 	E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	1
81RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1D0Rate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81RVSUP	Voltage Supervision of Rate-of-Change of Frequency Elements (volts)	Range = 12.5 to 300.0, OFF	96.0
81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TRNDRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, 	81RISUP	Current Supervision of Rate-of-Change of Frequency Elements (amps)	Range = 0.5 to 10.0, OFF	OFF
81R1TRNDRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, 	81R1TP	Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)	Range = 0.10 to 15.00, OFF	0.50
81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, 	81R1TRND	Rate-of-Change of Frequency Trend 1	Select: INC, DEC, ABS	ABS
81R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1TD	Rate-of-Change of Frequency Trip 1 Delay (seconds)	Range = $0.10$ to $60.00$	0.25
81R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1DO	Rate-of-Change of Frequency Dropout 1 Delay (seconds)	Range = $0.00$ to $60.00$	0.00
E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1TC	Rate-of-Change of Frequency Torque Control 1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	N
DMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF $5.00$ GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$ 312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$	EDEM	Demand Metering	Select: THM, ROL	THM
PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
	3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00

EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	3P1
3PWR1P	Three Phase Power Element Pickup (VA)	Range = 1.0 to 6500.0, OFF	50.0
PWR1T	Power Element Type	Select: +WATTS, - WATTS, +VARS, -VARS	-WATTS
PWR1D	Power Element Time Delay (seconds)	Range = $0.0$ to 240.0	0.0
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to 400.0, OFF	OFF
TR	Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 51P1T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 50P1P OR 50G1P OR 50N1P)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	IN101
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 1 <u>Top</u>			

Group 2			<u>Top</u>
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
ZOSMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
ZOSANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to $100.00$ ,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	Ν
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Group 3			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = 0.10 to 510.00	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = 0.00 to 90.00	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	N
51CCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P2RS	EM Reset Delay	Select: Y, N	N
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 3			Тор

Group 4			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Ν
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	Ν
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = $2.00$ to $300.00$ ,	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = $2.00$ to $300.00$ , OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 4			Тор

Logic 1 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	10
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	10
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA

RST08       Valid range = The legal operators: ADD OR NOT R_TRIG F_TRIG       NA         SET09       (SELogic)       Valid range = The legal operators: ADD OR NOT R_TRIG F_TRIG       NA         RST09       (SELogic)       Valid range = The legal operators: ADD OR NOT R_TRIG F_TRIG       NA         RST09       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         SET10       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         SV110       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         SV01PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV01DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV01D       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV02DO       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV02DO       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV02DV       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV02DV       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV03DD	SET08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET09   (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   NA     RST09   (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   NA     SET10   (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   NA     RST10   (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   NA     RST10   (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   NA     RST10   (SELogic)   Valid range = 0.00 to 3000.00   0.00     SV01PU   SV_Timer Pickup (seconds)   Range = 0.00 to 3000.00   0.00     SV01DD   SV_Timer Dropout (seconds)   Range = 0.00 to 3000.00   0.00     SV01   SV_Input (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   SOPIT OR SOGI OR SONIT OR SIPIT OR SOGI     SV02PU   SV_Timer Pickup (seconds)   Range = 0.00 to 3000.00   0.00     SV02DO   SV_Timer Pickup (seconds)   Range = 0.00 to 3000.00   0.00     SV021   SV_Input (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   (27PF1 OR 59PF dIJVE LINE SII     SV021   SV_Timer Pickup (seconds)   Range = 0.00 to 3000.00   0.00     SV0320   SV_Input (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   (27PF1 OR 59PF dIJVE LINE SII <	RST08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST09       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         SET10       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         RST10       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         RST10       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         SV01PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV01DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV01       SV_Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       SOPIT OR SOGI OR SONIT OR SIPIT OR SOGI         SV01       SV_Input (SELogic)       Range = 0.00 to 3000.00       0.00         SV02       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV02       SV_Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       (27PP1 OR SPPF H_IVE LINE SII         SV03PU       SV_Input (SELogic)       Range = 0.00 to 3000.00       0.00         SV03PU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV03DD       SV_Timer Dropout (seconds)       R	SET09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET10(SELogic)Valid range - The legal operators: AND OR NOT R_TRIG F_TRIGNARST10(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNASV01PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV01DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV01SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSOPIT OR 50CI OR 50NIT OR 50CI OR 51NIT R DOR NOT R_TRIG F_TRIGSOPIT OR 50CI OR 51NIT OR 50CI OR 51NIT OR 51CI OR 51NIT OR 51CI OR 51NIT OR 51CI DOR 51NIT OR 50CISV02SV_Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV02DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(27PPI OR 59PF #LIVE LINE SII SV03PUSV03PUSV_Imput (SELogic)Range = 0.00 to 3000.000.00SV03DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DSV_Imput (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOT SV02 ANI 27S1 #SYNC CHECK OKSV04SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DSV_Timer Dropout (seconds)Range = The legal operators: AND OR NOT R_TRIG F_TRIGHALARM OR SALARM #PROTECTION RE	RST09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST10       (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       NA         SV01PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV01DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV01DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV01       SV_Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       SOP1T OR 50G1 OR 51N1T OR 51P1T OR 51G1 OR 51N1T #DIRECT TRIF         SV02PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV02DO       SV_Input (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       (27PP1 OR 59PF #LIVE LINE SII SV02         SV02       SV_Input (SELogic)       Valid range = 0.00 to 3000.00       0.00         SV03PU       SV_Imput (SELogic)       Range = 0.00 to 3000.00       0.00         SV033       SV_Imput (SELogic)       Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG       (NOT SV02 ANI 27S1) #SYNC C_TRIC F_TRIG         SV04       SV_Input (SELogic)       Valid range = 0.00 to 3000.00       0.00         SV044       SV_Input (SELogic)       Range = 0.00 to 3000.00       0.00         SV05       SV_Input	SET10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV01DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV01SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGS0P1T OR 50G1 OR 51N1T OR DIPT OR 51G1 OR 51N1T OR DIPT OR 51G1 OR 51N1T OR DIPT OR 51G1 OR 51N1T GR DIPT OR 51N1 TRE DIPT OR 51N1 TRE DIPT OR 51N1 TRE	RST10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV01SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG $50P1T OR 50G1$ OR 51N1T 0R $\#D1P OR 51G1$ OR 51N1T 17 $\#D1P OR 51G1$ SV02PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.00 $0.00$ SV02DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV02SV_Input (SELogic)Valid range = The legal 	SV01PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV01 $SV_{-}$ Input (SELogic) $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIGSOP1T OR 50G1OR 50N1T ORS1D1T OR 51G1OR 51N1T#DIRECT TRIPSV02PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV02DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG(27PP1 OR 59PF#LIVE LINE SIISV03PUSV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV03DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTP_{-} TRIG F_TRIG(NOT SV02 ANI27S1) #SYNCCHECK OKSV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_{-} Input (SELogic)Range = 0.00 to 3000.0$	SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV02DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV02SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(27PP1 OR 59PF #LIVE LINE SITSV03DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(NOT SV02 ANI 27S1) #SYNC CHECK OKSV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV04DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Range = 0.00 to 3000.000.00SV05DOSV_Timer P	SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T #DIRECT TRIP
SV02DO     SV_ Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       SV02     SV_ Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     (27PP1 OR 59PF #LIVE LINE SII       SV03PU     SV_ Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV03DO     SV_ Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV03DO     SV_ Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       SV03     SV_ Input (SELogic)     Range = 0.00 to 3000.00     0.00       SV03     SV_ Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     (NOT SV02 ANI 27S1) #SYNC CHECK OK       SV04PU     SV_ Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV04DO     SV_ Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       SV04     SV_ Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     HALARM OR SALARM #PROTECTION R_LAY FAIL       SV05     SV_ Input (SELogic)     Range = 0.00 to 3000.00     0.00       SV05DO     SV_ Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       SV05     SV_ Input (SELogic)     Qaid range = The legal operators: AND OR NOT R_TRIG F_TRIG     0	SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV02 $SV_{-}$ Input (SELogic) $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG(27PP1 OR 59PF#LIVE LINE SIISV03PUSV03PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG(NOT SV02 ANI27S1) #SYNCSV04SV_{-} Input (seconds)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04DOSV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV04DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_{-} Input (SELogic)Range = 0.00 to 3000.000.00SV05SV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG0SV06PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06PUSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00<$	SV02DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV03DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG(NOT SV02 ANI 27S1) #SYNC CHECK OKSV04SV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGHALARM OR SALARM #PROTECTION RELAY FAILSV04SV_Input (SELogic)Valid range = 0.00 to 3000.000.00SV05DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV06PUSV_Input (SELogic)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00 <td>SV02</td> <td>SV_Input (SELogic)</td> <td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td> <td>(27PP1 OR 59PP1) #LIVE LINE SIDE</td>	SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(27PP1 OR 59PP1) #LIVE LINE SIDE
SV03DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV03SV_ Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ (NOT SV02 ANI 27S1) #SYNC CHECK OKSV04PUSV_ Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_ Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ HALARM OR SALARM #PROTECTION RELAY FAILSV04SV_ Input (SELogic)Valid range = 0.00 to 3000.000.00SV05DOSV_ Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_ Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05DOSV_ Input (SELogic)Valid range = The legal 	SV03PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV03 $SV_n Input (SELogic)$ Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ (NOT SV02 ANI 27S1) #SYNC CHECK OKSV04PU $SV_T Imer Pickup (seconds)$ Range = 0.00 to 3000.000.00 $SV04DO$ $SV_T Imer Dropout (seconds)$ Range = 0.00 to 3000.000.00 $SV04DO$ $SV_T Imer Dropout (seconds)$ Range = 0.00 to 3000.000.00 $SV04$ $SV_T Imer Dropout (seconds)$ Range = 0.00 to 3000.000.00 $SV04$ $SV_T Input (SELogic)$ $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIGHALARM ORSALARMPROTECTIONRELAY FAILSV05PUSV_T Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_T Imer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_I Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG0SV06PUSV_T Imput (SELogic)Range = 0.00 to 3000.000.00SV06PUSV_T Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_T Imer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_T Imer Dropout (seconds)Range = 0.00 to 3000.000.00$	SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV04DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ HALARM OR SALARM #PROTECTION RELAY FAILSV05PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV05SV_ Input (SELogic)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(NOT SV02 AND 27S1) #SYNC CHECK OK
SV04DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV04SV_Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ HALARM OR SALARM #PROTECTION RELAY FAILSV05PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT $R_TRIG F_TRIG$ 0SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04 $SV_{-}$ Input (SELogic) $Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIGHALARM ORSALARM#PROTECTIONRELAY FAILSV05PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_{-} Input (SELogic)Valid range = The legaloperators: AND OR NOTR_TRIG F_TRIG0SV06PUSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06PUSV_{-} Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_{-} Timer Dropout (seconds)Range = 0.00 to 3000.000.00$	SV04DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV05PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00	SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM #PROTECTION RELAY FAIL
SV05DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV05SV_Input (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG $0$ SV06PUSV_Timer Pickup (seconds)Range = 0.00 to 3000.00 $0.00$ SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$ SV06DOSV_Timer Dropout (seconds)Range = 0.00 to 3000.00 $0.00$	SV05PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV05     SV_ Input (SELogic)     Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG     0       SV06PU     SV_ Timer Pickup (seconds)     Range = 0.00 to 3000.00     0.00       SV06DO     SV_ Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       Valid range = The legal     Valid range = The legal     Valid range = The legal	SV05DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV06PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV06DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         Valid range = The legal       Valid range = The legal       Valid range = The legal	SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV06DO     SV_Timer Dropout (seconds)     Range = 0.00 to 3000.00     0.00       Valid range = The legal     Valid range = The legal     Valid range = The legal	SV06PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
Valid range = The legal	SV06DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV06   SV_ Input (SELogic)   operators: AND OR NOT   0     R_TRIG F_TRIG   0	SV06	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

SV07DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV07       SV_Input (SELogic)       Valid range = The legal operators: AND OR NOT RTRIG       0         SV08PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       1.00         SV08DO       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV08BU       SV_Input (SELogic)       Valid range = The legal operators: AND OR NOT RTRIG       0 #REVERSE POWER TRIP         SV09DU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV09PU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV09DU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV10PU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV10PU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV10PU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV10PU       SV_Timer Dropout (seconds)       Range = 0.00 to 3000.00       0.00         SV10PU       SV_Timer Pickup (seconds)       Range = 0.00 to 3000.00       0.00         SV10PU <td< th=""><th>SV07PU</th><th>SV_ Timer Pickup (seconds)</th><th>Range = 0.00 to 3000.00</th><th>0.00</th></td<>	SV07PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00																																																																																
SV07SV_Input (SELogic)Valid range T he kegal optations: AND OR NOT R TRIG F_TRIG F_TRIG R TRIG F_TRIG F_TRIG R TRIG F_TRIG F_TRIG R TRIG F_TRIG F_TRIG R TRIG F_TRIG F_TRIG D 00 to 3000.000.00SV08D0SV_Timer Dropout (seconds)Range = 0.00 to 3000.000.00SV08SV_Input (SELogic)Valid range = The legal optators: AND OR NOT R_TRIG F_TRIG F_TRIG R_TRIG F_TRIG F_TRIGp#RFVFRSE POWER TRIP R_TRIG F_TRIG TANDAR NOT R_TRIG	SV07DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00																																																																																
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Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NN <tr <="" td=""><td>SV10DO</td><td>SV_ Timer Dropout (seconds)</td><td>Range = <math>0.00</math> to <math>3000.00</math></td><td>0.00</td></tr> <tr><td>OUT101FSOUT101 Fail-SafeSelect: Y, NNOUT101(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG GTRIPOUT102SU102 Fail-SafeSelect: Y, NNOUT102(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE 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Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT103(SELogic)Select: Y, NNOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Sultarage = The legal operators: AND OR NOT R_TRIG F_TRIGSv03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSv03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSv03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0<td>OUT101</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>TRIP</td></td></tr> <tr><td>OUT102(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT103FSOUT103 Fail-SafeSelect: Y, NYOUT103(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV04T #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG 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NNOUT304(SELogic)Select: Y, NNOUT304(SELogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304Selogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304OUT304 Fail-SafeSelect: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT102</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>0</td></tr> <tr><td>OUT103<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV04T</math> #PROTECTIVE RELAY ALARM TO PLCOUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV03T \#SYNC</math> CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math><math>SV03T \#SYNC</math> CLOSE CIRCUITOUT302<math>(SELogic)</math><math>Valid range = The 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N</math><math>N</math></math></math></math></math></math></math></math></math></math></math></math></td><td>OUT103FS</td><td>OUT103 Fail-Safe</td><td>Select: Y, N</td><td>Y</td></tr> <tr><td>OUT301FSOUT301 Fail-SafeSelect: Y, NNOUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGNOUT304OUT401 Fail-SafeSelect: Y, NN</td><td>OUT103</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>SV04T #PROTECTIVE RELAY ALARM TO PLC</td></tr> <tr><td>OUT301(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CLOSE CIRCUITOUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Select: Y, NNOUT303(SELogic)Select: Y, NNOUT304(SELogic)Select: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304SELogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT304Selogic)Select: Y, NNOUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT301FS</td><td>OUT301 Fail-Safe</td><td>Select: Y, N</td><td>Ν</td></tr> <tr><td>OUT302FSOUT302 Fail-SafeSelect: Y, NNOUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304OUT401 Fail-SafeSelect: Y, NN</td><td>OUT301</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>SV03T #SYNC CLOSE CIRCUIT</td></tr> <tr><td>OUT302(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGSV03T #SYNC CHECK TO PLCOUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Select: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304OUT304 Fail-SafeSelect: Y, NNOUT304OUT401 Fail-SafeSelect: Y, NNOUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT302FS</td><td>OUT302 Fail-Safe</td><td>Select: Y, N</td><td>Ν</td></tr> <tr><td>OUT303FSOUT303 Fail-SafeSelect: Y, NNOUT303<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math>0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math>0OUT304OUT304 Fail-SafeSelect: Y, NNOUT304<math>(SELogic)</math><math>Valid range = The legaloperators: AND OR NOT<math>R_TRIG F_TRIG</math>0OUT401FSOUT401 Fail-SafeSelect: Y, NN</math></math></math></td><td>OUT302</td><td>(SELogic)</td><td>Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG</td><td>SV03T #SYNC CHECK TO PLC</td></tr> <tr><td>OUT303(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT303FS</td><td>OUT303 Fail-Safe</td><td>Select: Y, N</td><td>Ν</td></tr> <tr><td>OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT401FSOUT401 Fail-SafeSelect: Y, NN</td><td>OUT303</td><td>(SELogic)</td><td>Valid range = 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OUT304FSOUT304 Fail-SafeSelect: Y, NNOUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT401FSOUT401 Fail-SafeSelect: Y, NN	OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0																																																																																
OUT304(SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG0OUT401FSOUT401 Fail-SafeSelect: Y, NN	OUT304FS	OUT304 Fail-Safe	Select: Y, N	N																																																																																
OUT401FS OUT401 Fail-Safe Select: Y, N N	OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0																																																																																
	OUT401FS	OUT401 Fail-Safe	Select: Y, N	N																																																																																

OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 51P1T OR 51G1T OR SV08T #DIRECT TRIP TO PLC
OUT402FS	OUT402 Fail-Safe	Select: Y, N	Ν
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 1			Top

Logic 2 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 2			Тор
Logic 3			
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Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	3.00
SV02DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 3			Top

Logic 4			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03

SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	N
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 4			Тор

Front Panel <u>Top</u>			
Setting	Description	Range	Value
EDP	Display Points Enable	Range = $1$ to $32$ , N	5
ELB	Local Bits Enable	Range = 1 to 32, N	N
FP_TO	Front-Panel Timeout (mins)	Range = 1 to 30, OFF	15
FP_CONT	Front-Panel Contrast	Range = 1 to $16$	10
FP_AUTO	Front-Panel Automessages	Select: OVERRIDE, ROTATING	OVERRIDE
RSTLED	Reset Trip-Latched LEDs On Close	Select: Y, N	Ν
LEDENAC	ENABLED LED Asserted Color	Select: R, G, A	G
LEDTRPC	TRIP LED Asserted Color	Select: R, G, A	R
MAXACC	Maximum Access Level	Select: 1, 2	2
T01LEDL	Trip Latch T_LED	Select: Y, N	Y
T01LEDC	Target T01_LED Asserted Color (R,G,A)	Select: R, G, A	R
T01_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T #INSTANT OC
T02LEDL	Trip Latch T_LED	Select: Y, N	Y
T02LEDC	Target T02_LED Asserted Color (R,G,A)	Select: R, G, A	R
T02_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51AT OR 51BT OR 51CT OR 51P1T OR 51P2T #PHASE OC
T03LEDL	Trip Latch T_LED	Select: Y, N	Y
T03LEDC	Target T03_LED Asserted Color (R,G,A)	Select: R, G, A	R
T03_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51N1T OR 51G1T OR 51N2T OR 51G2T #GND/NEU OC
T04LEDL	Trip Latch T_LED	Select: Y, N	Y
T04LEDC	Target T04_LED Asserted Color (R,G,A)	Select: R, G, A	R
T04_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51QT #GND/NEU OC
T05LEDL	Trip Latch T_LED	Select: Y, N	Y
T05LEDC	Target T05_LED Asserted Color (R,G,A)	Select: R, G, A	R
T05_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	81D1T OR 81D2T OR 81D3T OR 81D4T #OVER/UNDER FREQUENCY
T06LEDL	Trip Latch T_LED	Select: Y, N	N
T06LEDC	Target T06_LED Asserted Color (R,G,A)	Select: R, G, A	R
T06_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT	(BFT OR T06_LED) AND NOT TRGTR

		R_TRIG F_TRIG	#BREAKER FAIL
PB1ALEDC	PB1A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB1A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB1BLEDC	PB1B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB1B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2ALEDC	PB2A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB2A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2BLEDC	PB2B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB2B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3ALEDC	PB3A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB3A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3BLEDC	PB3B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB3B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4ALEDC	PB4A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB4A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4BLEDC	PB4B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB4B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DP01	Display Point (60 characters)		TID, "{16}"
DP02	Display Point (60 characters)		0
DP03	Display Point (60 characters)		IN101, BREAKER, CLOSED, OPEN

DP04	Display Point (60 characters)	0
DP05	Display Point (60 characters)	)
Front Pane	el	Тор

Report <u>Top</u>			
Setting	Description	Range	Value
ER	Event Report Trigger (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG 51P1P OR R_TRIG 51G1P OR R_TRIG 51N1P OR R_TRIG 50P1P OR R_TRIG 50G1P OR R_TRIG 50N1P
LER	Length of Event Report (cycles)	Select: 15, 64, 180	15
PRE	Prefault Length (cycles)	Range = $1$ to $10$	5
ESERDEL	Auto-Removal Enable	Select: Y, N	N
SER1	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	IN101, OUT301, 51P1T, 51G1T, 51N1T, 50P1P, 50G1T, 50N1T, SV08
SER2	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	52A
SER3	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	SV05T, SV02T
SER4	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	SALARM, HALARM
EALIAS	Enable ALIAS Settings	Range = $1$ to $20$ , N	Ν
FMR1NAM	Fast Message Read Name1 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR1
FMR1	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR2NAM	Fast Message Read Name2 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR2
FMR2	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR3NAM	Fast Message Read Name3 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR3
FMR3	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR4NAM	Fast Message Read Name4 (9 characters)	Range = ASCII string with a maximum length of $9$ .	FMR4
FMR4	(24 analog quantities)	Valid range $= 0$ , NA or a list of relay elements.	NA
RA01TYPE	Remote Analog 01 type	Select: I, F, L	I
RA02TYPE	Remote Analog 02 type	Select: I, F, L	Ι
RA03TYPE	Remote Analog 03 type	Select: I, F, L	Ι
RA04TYPE	Remote Analog 04 type	Select: I, F, L	Ι
RA05TYPE	Remote Analog 05 type	Select: I, F, L	Ι

Select: I, F, LSelect: I, F, L	I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I
Select: I, F, LSelect: I, F, L	I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I
Select: I, F, L     Select: I, F, L	I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I   I
Select: I, F, LSelect: I, F, L	I   I   I   I   I   I   I   I   I   I   I   I   I   I
Select: I, F, L	I   I   I   I   I   I   I   I   I   I   I   I   I   I
Select: I, F, L	I   I   I   I   I   I   I   I   I   I
Select: I, F, L	I   I   I   I   I   I   I   I
Select: I, F, L	
Select: I, F, L	I   I   I   I   I
Select: I, F, L Select: I, F, L Select: I, F, L Select: I, F, L	
Select: I, F, L Select: I, F, L Select: I, F, L	I I I
Select: I, F, L Select: I, F, L	
Select: I, F, L	
Select: I, F, L	Ι
Select: I, F, L	Ι
Select: I, F, L	I
Select: I, F, L	I
Select: I, F, L	Ι
Select: I, F, L	I
Select: I, F, L	I
Select: I, F, L	Ι
Range = Maximum of 17 Analog Elements	NA
Select: 5, 10, 15, 30, 60	15
	Select: I, F, LSelect: 5, 10, 15, 30, 60

Port F			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	N
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = $0$ to $30$	0
RTSCTS	Hardware Handshaking	Select: Y, N	N
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
Port F			Тор

Port 1 Top				
Setting	Description	Range	Value	
EPORT	Enable Port	Select: Y, N	Y	
EETHFWU	Enable Ethernet Firmware Upgrade	Select: Y, N	N	
IPADDR	Device IP Address [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.153	
SUBNETM	Subnet Mask [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	255.255.255.0	
DEFRTR	Default Router Gateway [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.1	
ЕТСРКА	Enable TCP Keep-Alive	Select: Y, N	Y	
KAIDLE	TCP Keep-Alive Idle Range (seconds)	Range = $1$ to $20$	10	
KAINTV	TCP Keep-Alive Interval Range (seconds)	Range = $1$ to $20$	1	
KACNT	TCP Keep-Alive Count Range	Range = $1$ to $20$	6	
ETELNET	Enable Telnet	Select: Y, N	Υ	
MAXACC	Maximum Access Level	Select: 1, 2, C	2	
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH	
TPORT	Telnet Port	Range = 1025 to 65534, 23	23	
TCBAN	Telnet Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	TERMINAL SERVER	
TIDLE	Telnet Port Timeout (mins)	Range = $1$ to $30$	15	
FASTOP	Fast Operate	Select: Y, N	Ν	
EFTPSERV	Enable FTP	Select: Y, N	Υ	
FTPACC	FTP Maximum Access Level	Select: 1, 2, C	2	
FTPUSER	FTP User Name (20 characters)	Range = ASCII string with a maximum length of 20.	FTPUSER	
FTPCBAN	FTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	FTP SERVER	
FTPIDLE	FTP Idle Time (mins)	Range = $5$ to $255$	5	
E61850	Enable IEC 61850 Protocol	Select: Y, N	Υ	
EGSE	Enable IEC 61850 GOOSE	Select: Y, N	Y	
EMMSFS	Enable MMS File Services	Select: Y, N	Υ	
E850MBC	Enable 61850 Mode/Behavior Control	Select: Y, N	Ν	
EOFFMTX	Enable GOOSE Tx in Off Mode	Select: Y, N	Ν	
EMOD	Enable Modbus Sessions	Select: 0-2	0	
EHTTP	Enable HTTP Server	Select: Y, N	Υ	
HTTPACC	HTTP Maximum Accesss Level	Select: 1, 2	2	
HTTPPORT	HTTP Server TCP/IP Port Number	Range = 1 to $65534$	80	
HTTPBAN	HTTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	THIS SYSTEM IS FOR THE USE OF AUTHORIZED PERSONNEL	

			ONLY.
HTTPIDLE	HTTP Web Server Timeout (minutes)	Range $= 1$ to $60$	10
ESNTP	Enable SNTP Client	Select: OFF, UNICAST, MANYCAST, BROADCAST	OFF
EPTP	Enable PTP	Select: Y, N	Ν
Port 1			
			<u>Тор</u>

Port 2			Top
Setting	Description	Range	Value
Port 2	·		Тор

Port 3 Top			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU, MBA, MBB, MB8A, MB8B, MBTA, MBTB	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	Ν
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to $30$	5
RTSCTS	Hardware Handshaking	Select: Y, N	Ν
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
FASTOP	Fast Operate	Select: Y, N	Ν
Port 3			<u>Top</u>

Modbus User Map			
Setting	Description	Range	Value
MOD_001	USER REG#001 (8 characters)	Range = Maximum of 1 Digital Elements	IA_MAG
MOD_002	USER REG#002 (8 characters)	Range = Maximum of 1 Digital Elements	IB_MAG
MOD_003	USER REG#003 (8 characters)	Range = Maximum of 1 Digital Elements	IC_MAG
MOD_004	USER REG#004 (8 characters)	Range = Maximum of 1 Digital Elements	IN_MAG
MOD_005	USER REG#005 (8 characters)	Range = Maximum of 1 Digital Elements	IG_MAG
MOD_006	USER REG#006 (8 characters)	Range = Maximum of 1 Digital Elements	IAV
MOD_007	USER REG#007 (8 characters)	Range = Maximum of 1 Digital Elements	3I2
MOD_008	USER REG#008 (8 characters)	Range = Maximum of 1 Digital Elements	UBI
MOD_009	USER REG#009 (8 characters)	Range = Maximum of 1 Digital Elements	VAVE
MOD_010	USER REG#010 (8 characters)	Range = Maximum of 1 Digital Elements	3V2
MOD_011	USER REG#011 (8 characters)	Range = Maximum of 1 Digital Elements	UBV
MOD_012	USER REG#012 (8 characters)	Range = Maximum of 1 Digital Elements	Р
MOD_013	USER REG#013 (8 characters)	Range = Maximum of 1 Digital Elements	Q
MOD_014	USER REG#014 (8 characters)	Range = Maximum of 1 Digital Elements	S
MOD_015	USER REG#015 (8 characters)	Range = Maximum of 1 Digital Elements	PF
MOD_016	USER REG#016 (8 characters)	Range = Maximum of 1 Digital Elements	FREQ
MOD_017	USER REG#017 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIH
MOD_018	USER REG#018 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIL
MOD_019	USER REG#019 (8 characters)	Range = Maximum of 1 Digital Elements	МѠНЗРОН
MOD_020	USER REG#020 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3POL
MOD_021	USER REG#021 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIH
MOD_022	USER REG#022 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIL
		Range = Maximum of 1	

MOD_023	USER REG#023 (8 characters)	Digital Elements	MVRH3POH
MOD_024	USER REG#024 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3POL
MOD_025	USER REG#025 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PH
MOD_026	USER REG#026 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PL
MOD_027	USER REG#027 (8 characters)	Range = Maximum of 1 Digital Elements	RTDWDGMX
MOD_028	USER REG#028 (8 characters)	Range = Maximum of 1 Digital Elements	RTDBRGMX
MOD_029	USER REG#029 (8 characters)	Range = Maximum of 1 Digital Elements	RTDAMB
MOD_030	USER REG#030 (8 characters)	Range = Maximum of 1 Digital Elements	RTDOTHMX
MOD_031	USER REG#031 (8 characters)	Range = Maximum of 1 Digital Elements	IARMS
MOD_032	USER REG#032 (8 characters)	Range = Maximum of 1 Digital Elements	IBRMS
MOD_033	USER REG#033 (8 characters)	Range = Maximum of 1 Digital Elements	ICRMS
MOD_034	USER REG#034 (8 characters)	Range = Maximum of 1 Digital Elements	INRMS
MOD_035	USER REG#035 (8 characters)	Range = Maximum of 1 Digital Elements	IAMX
MOD_036	USER REG#036 (8 characters)	Range = Maximum of 1 Digital Elements	IAMN
MOD_037	USER REG#037 (8 characters)	Range = Maximum of 1 Digital Elements	IBMX
MOD_038	USER REG#038 (8 characters)	Range = Maximum of 1 Digital Elements	IBMN
MOD_039	USER REG#039 (8 characters)	Range = Maximum of 1 Digital Elements	ICMX
MOD_040	USER REG#040 (8 characters)	Range = Maximum of 1 Digital Elements	ICMN
MOD_041	USER REG#041 (8 characters)	Range = Maximum of 1 Digital Elements	INMX
MOD_042	USER REG#042 (8 characters)	Range = Maximum of 1 Digital Elements	INMN
MOD_043	USER REG#043 (8 characters)	Range = Maximum of 1 Digital Elements	IGMX
MOD_044	USER REG#044 (8 characters)	Range = Maximum of 1 Digital Elements	IGMN
MOD_045	USER REG#045 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMX
MOD_046	USER REG#046 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMN
MOD_047	USER REG#047 (8 characters)	Range = Maximum of 1 Digital Elements	KVAR3PMX
MOD_048	USER REG#048 (8 characters)	Range = Maximum of 1	KVAR3PMN

		Digital Elements	
MOD_049	USER REG#049 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMX
MOD_050	USER REG#050 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMN
MOD_051	USER REG#051 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMX
MOD_052	USER REG#052 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMN
MOD_053	USER REG#053 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_LO
MOD_054	USER REG#054 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_HI
MOD_055	USER REG#055 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_LO
MOD_056	USER REG#056 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_HI
MOD_057	USER REG#057 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_058	USER REG#058 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_059	USER REG#059 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_060	USER REG#060 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_061	USER REG#061 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_062	USER REG#062 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_063	USER REG#063 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_064	USER REG#064 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_065	USER REG#065 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_066	USER REG#066 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_067	USER REG#067 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_068	USER REG#068 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_069	USER REG#069 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_070	USER REG#070 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_071	USER REG#071 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_072	USER REG#072 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_073	USER REG#073 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_074	USER REG#074 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_075	USER REG#075 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_076	USER REG#076 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_077	USER REG#077 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_078	USER REG#078 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_079	USER REG#079 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_080	USER REG#080 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_081	USER REG#081 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_082	USER REG#082 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_083	USER REG#083 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_084	USER REG#084 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_085	USER REG#085 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_086	USER REG#086 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_087	USER REG#087 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_088	USER REG#088 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_089	USER REG#089 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_090	USER REG#090 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_091	USER REG#091 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_092	USER REG#092 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_093	USER REG#093 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_094	USER REG#094 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_095	USER REG#095 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_096	USER REG#096 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_097	USER REG#097 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_098	USER REG#098 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_099	USER REG#099 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_100	USER REG#100 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_101	USER REG#101 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_102	USER REG#102 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_103	USER REG#103 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_104	USER REG#104 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_105	USER REG#105 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_106	USER REG#106 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_107	USER REG#107 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_108	USER REG#108 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_109	USER REG#109 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_110	USER REG#110 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_111	USER REG#111 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_112	USER REG#112 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_113	USER REG#113 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_114	USER REG#114 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_115	USER REG#115 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_116	USER REG#116 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_117	USER REG#117 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_118	USER REG#118 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_119	USER REG#119 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_120	USER REG#120 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_121	USER REG#121 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_122	USER REG#122 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_123	USER REG#123 (8 characters)	Range = Maximum of 1	NA

		Digital Elements			
MOD_124	USER REG#124 (8 characters)	Range = Maximum of 1 Digital Elements	NA		
MOD_125	USER REG#125 (8 characters)	Range = Maximum of 1 Digital Elements	NA		
Modbus User Map <u>Top</u>					

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## **SEL-751 Settings Report**

Group	Setting	Range	Default Value	Value	Delta	Description	Comments	Hidden
1	50P1P	Range = 0.25 to 100.00, OFF	10.00	69.00	True	Maximum Phase Overcurrent Trip Pickup (amps sec.)		False
1	50P1D	Range = 0.00 to 400.00, OFF	0.00	0.00	False	Maximum Phase Overcurrent Trip Delay (seconds)		False
1	50G1P	Range = 0.25 to 100.00, OFF	OFF	20.00	True	Residual Overcurrent Trip Pickup (amps sec.)		False
1	50G1D	Range = 0.00 to 400.00, OFF	0.50	0.00	True	Residual Overcurrent Trip Delay (seconds)		False
1	51P1P	Range = 0.25 to 24.00, OFF	6.00	3.00	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51P1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U4	True	TOC Curve Selection		False
1	51P1TD	Range = 0.50 to 15.00	3.00	3.00	False	TOC Time Dial		False
1	51G1P	Range = 0.25 to 24.00, OFF	0.50	1.25	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51G1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U2	True	TOC Curve Selection		False
1	51G1TD	Range = 0.50 to 15.00	1.50	2.17	True	TOC Time Dial		False
1	TR	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T OR ORED51T OR ORED81T OR REMTRIP OR OC OR SV04T	50P1T OR 50G1T OR 51P1T OR 51G1T	True	Trip (SELogic)		False
				1				1

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Report Date: July 29, 2021 08:11:02 am	
Database: C:\Users\Kevin.myrick\OneDrive - Verti	v Co\Documents\Jobs\WJ Hooper WPP\WJ-Hooper.rdb
Device Information (Current)	Device Information (Other)
Settings: 52-UM AF (Current)	Settings: 52-UM AL 7-26-21 (Other)
Device: 751 008	Device: 751 008
Part#: 751202CCCBC70851D10	Part#: 751202CCCBC70851D10
FID: SEL-751-R300-V3-Z008004-D20210104	FID: SEL-751-R300-V3-Z008004-D20210104
BFID: SLBT7XX-R600-V0-Z000000-D20200331	BFID: SLBT-751-RXXX-V0-Z007003-DXXXXXXXX
Hidden (H): 0/6383 Changed: 9/11 Unchanged	: 0/7562 Missing: 0/0 Invalid (I): 0/0 Designer (D): 0/0

	Group 1				
Compared	Compared Settings				
Setting	52-UM AF (Current)	52-UM AL 7-26-21 (Other)			
50P1P	10.00	69.00			
50G1P	5.00	20.00			
51P1P	6.00	3.00			
51P1C	U3	U4			
51G1P	2. 50	1.25			
51G1C	U3	U2			
51G1TD	1.50	2.17			
TR	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T OR SV08T	50P1T OR 50G1T OR 5 1P1T OR 51G 1 T			

	Front Panel			
Compared	Compared Settings			
Setting	52-UM AF (Current)	52-UM AL 7-26-21 (Other)		
DP04	1, "RELAY NOT IN SERVICE"	0		

## SEL-751 Settings Report

## **Overview Information**

File Name	52-UM AL 7-26-21
RDB	WJ-Hooper.rdb
Device	SEL-751
Setting Version Number	008
Part Number	751202CCCBC70851D10
Firmware ID	SEL-751-R300-V3-Z008004-D20210104
SELBoot Firmware ID	SLBT7XX-R600-V0-Z000000-D20200331

## Settings

<u>Global</u>		
<u>Group 1</u>		
<u>Group 2</u>		
Group 3		
<u>Group 4</u>		
Logic 1		
Logic 2		
Logic 3		
Logic 4		
Front Panel		
<u>Report</u>		
Port F		
Port 1		
Port 2		
Port 3		
Modbus User Map		
Settings Legend		
Visible Setting		
Hidden Setting		
Involid Setting		
Invaliu Settilig		

Global			
Setting	Description	Range	Value
PHROT	Phase Rotation	Select: ABC, ACB	ABC
FNOM	Rated Frequency (Hz)	Select: 50, 60	60
DATE_F	Date Format	Select: MDY, YMD, DMY	MDY
METHRES	Meter Cutoff Threshold	Select: Y, N	Y
FAULT	Fault Condition (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50G1P OR 50N1P OR 51P1P OR 51QP OR 50Q1P OR TRIP
EMP	Messenger Points Enable	Range = $1$ to $32$ , N	Ν
TGR	Group Change Delay (seconds)	Range = $0$ to $400$	3
SS1	Select Settings Group1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
SS2	Select Settings Group2 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS3	Select Settings Group3 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SS4	Select Settings Group4 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
EPMU	Enable Synchronized Phasor Measurement	Select: Y, N	Ν
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE
UTC_OFF	Offset From UTC (hours, in 0.25 hour increments)	Range = -24.00 to 24.00	0.00
DST_BEGM	Month To Begin DST	Range = $1$ to $12$ , OFF	OFF
52ABF	52A Interlock in BF Logic	Select: Y, N	Ν
50BFP	Breaker-Failure Current Detector Pickup (amps sec.)	Range = $0.10$ to $10.00$	0.10
BFD	Breaker Failure Delay (seconds)	Range = $0.00$ to $2.00$	0.50
ATD	Auxiliary Timer Delay (seconds)	Range = 0.00 to 2.00, OFF	OFF
BFI	Breaker Failure Initiate (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG TRIP
BFISID	Breaker Failure Initiate Seal-In Delay (seconds)	Range = 0.00 to 2.00, OFF	0.00
BFRTD	Breaker Retrip Delay (seconds)	Range = $0.00$ to $2.00$ , OFF	0.05
BFTR	Breaker Failure Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
BFULTR	Breaker Failure Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
50PAFP	Arc-Flash Maximum Phase Overcurrent Pickup (amps sec.)	Range = 0.50 to 100.00, OFF	OFF

AOUTSLOT	Select Arc-Flash Output Slot	Select: 101_3, 401_4, 301_4	101_3
AFSENS1	Arc-Flash Input 1 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS2	Arc-Flash Input 2 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS3	Arc-Flash Input 3 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS4	Arc-Flash Input 4 Sensor Type	Select: NONE, POINT, FIBER	NONE
AO401AQ	AO401 Analog Quantity (Off, 1 analog quantity)	Range = Maximum of 1 Analog Elements	OFF
DCLOP	DC Battery LO Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
DCHIP	DC Battery HI Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
IN101D	IN101 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN102D	IN102 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN301D	IN301 Debounce (milliseconds)	Range = 0 to $65000$ , AC	10
IN302D	IN302 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN303D	IN303 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN304D	IN304 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN401D	IN401 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN402D	IN402 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN403D	IN403 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
EBMON	Enable Breaker Monitor	Select: Y, N	N
RSTTRGT	Reset Targets (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTENRGY	Reset Energy (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTMXMN	Reset Max/Min (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTDEM	Reset Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTPKDEM	Reset Peak Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DSABLSET	Disable Settings (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TIME_SRC	IRIG Time Source	Select: IRIG1, IRIG2	IRIG1
89EN2P	Enable Two Position Disconnects	Range = $1$ to $8$ , N	8
89NM2P1	Disconnect 1 Name	Range = ASCII string with a maximum length of 16.	2P1
		Valid range = The legal	

89A2P1	Disconnect 1 N/O Contact (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	0
89B2P1	Disconnect 1 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P1
89A2P1D	Disconnect 1 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P1D	Disconnect 1 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P1D	Disconnect 1 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P1	Disconnect 1 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P1
89CB2P1	Disconnect 1 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89CR2P1	Disconnect 1 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P1 OR 89CS2P1 OR 89AL2P1
89CT2P1	Disconnect 1 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P1
89RO2P1	Disconnect 1 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P1
89OB2P1	Disconnect 1 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89OR2P1	Disconnect 1 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P1 OR 89OS2P1 OR 89AL2P1
89OT2P1	Disconnect 1 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P1
89NM2P2	Disconnect 2 Name	Range = ASCII string with a maximum length of 16.	2P2
89A2P2	Disconnect 2 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P2	Disconnect 2 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P2
89A2P2D	Disconnect 2 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P2D	Disconnect 2 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P2D	Disconnect 2 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P2	Disconnect 2 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P2
89CB2P2	Disconnect 2 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT	89AL2P2

		R_TRIG F_TRIG	
89CR2P2	Disconnect 2 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P2 OR 89CS2P2 OR 89AL2P2
89CT2P2	Disconnect 2 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P2
89RO2P2	Disconnect 2 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P2
89OB2P2	Disconnect 2 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P2
89OR2P2	Disconnect 2 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P2 OR 89OS2P2 OR 89AL2P2
89OT2P2	Disconnect 2 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P2
89NM2P3	Disconnect 3 Name	Range = ASCII string with a maximum length of 16.	2P3
89A2P3	Disconnect 3 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P3	Disconnect 3 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P3
89A2P3D	Disconnect 3 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P3D	Disconnect 3 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P3D	Disconnect 3 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P3	Disconnect 3 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P3
89CB2P3	Disconnect 3 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89CR2P3	Disconnect 3 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P3 OR 89CS2P3 OR 89AL2P3
89CT2P3	Disconnect 3 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P3
89RO2P3	Disconnect 3 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P3
89OB2P3	Disconnect 3 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89OR2P3	Disconnect 3 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P3 OR 89OS2P3 OR 89AL2P3

89OT2P3	Disconnect 3 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P3
89NM2P4	Disconnect 4 Name	Range = ASCII string with a maximum length of 16.	2P4
89A2P4	Disconnect 4 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P4	Disconnect 4 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P4
89A2P4D	Disconnect 4 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P4D	Disconnect 4 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P4D	Disconnect 4 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P4	Disconnect 4 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P4
89CB2P4	Disconnect 4 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89CR2P4	Disconnect 4 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P4 OR 89CS2P4 OR 89AL2P4
89CT2P4	Disconnect 4 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P4
89RO2P4	Disconnect 4 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P4
89OB2P4	Disconnect 4 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89OR2P4	Disconnect 4 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P4 OR 89OS2P4 OR 89AL2P4
89OT2P4	Disconnect 4 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P4
89NM2P5	Disconnect 5 Name	Range = ASCII string with a maximum length of 16.	2P5
89A2P5	Disconnect 5 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P5	Disconnect 5 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P5
89A2P5D	Disconnect 5 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P5D	Disconnect 5 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P5D	Disconnect 5 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00,	0.33

		OFF	
89RC2P5	Disconnect 5 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P5
89CB2P5	Disconnect 5 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89CR2P5	Disconnect 5 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P5 OR 89CS2P5 OR 89AL2P5
89CT2P5	Disconnect 5 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P5
89RO2P5	Disconnect 5 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P5
89OB2P5	Disconnect 5 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89OR2P5	Disconnect 5 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P5 OR 89OS2P5 OR 89AL2P5
89OT2P5	Disconnect 5 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P5
89NM2P6	Disconnect 6 Name	Range = ASCII string with a maximum length of 16.	2P6
89A2P6	Disconnect 6 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P6	Disconnect 6 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P6
89A2P6D	Disconnect 6 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P6D	Disconnect 6 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P6D	Disconnect 6 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P6	Disconnect 6 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P6
89CB2P6	Disconnect 6 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89CR2P6	Disconnect 6 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P6 OR 89CS2P6 OR 89AL2P6
89CT2P6	Disconnect 6 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P6
89RO2P6	Disconnect 6 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P6

89OB2P6	Disconnect 6 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89OR2P6	Disconnect 6 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P6 OR 89OS2P6 OR 89AL2P6
89OT2P6	Disconnect 6 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P6
89NM2P7	Disconnect 7 Name	Range = ASCII string with a maximum length of 16.	2P7
89A2P7	Disconnect 7 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P7	Disconnect 7 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P7
89A2P7D	Disconnect 7 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P7D	Disconnect 7 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P7D	Disconnect 7 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P7	Disconnect 7 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P7
89CB2P7	Disconnect 7 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89CR2P7	Disconnect 7 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P7 OR 89CS2P7 OR 89AL2P7
89CT2P7	Disconnect 7 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P7
89RO2P7	Disconnect 7 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P7
89OB2P7	Disconnect 7 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89OR2P7	Disconnect 7 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P7 OR 89OS2P7 OR 89AL2P7
89OT2P7	Disconnect 7 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P7
89NM2P8	Disconnect 8 Name	Range = ASCII string with a maximum length of 16.	2P8
89A2P8	Disconnect 8 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P8	Disconnect 8 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT	NOT 89A2P8

		R_TRIG F_TRIG	
89A2P8D	Disconnect 8 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P8D	Disconnect 8 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P8D	Disconnect 8 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P8	Disconnect 8 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P8
89CB2P8	Disconnect 8 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89CR2P8	Disconnect 8 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P8 OR 89CS2P8 OR 89AL2P8
89CT2P8	Disconnect 8 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P8
89RO2P8	Disconnect 8 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P8
89OB2P8	Disconnect 8 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89OR2P8	Disconnect 8 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P8 OR 89OS2P8 OR 89AL2P8
89OT2P8	Disconnect 8 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P8
89EN3P	Enable Three Position Disconnects	Range = $1$ to $2$ , N	N
EN_LRC	Enable Local Remote Control	Select: Y, N	N
SC850BM	IEC 61850 Blocked Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SC850TM	IEC 61850 Test Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Global			<u>Top</u>

Group 1 <u>Top</u>			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	SEL-751
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	52-UM RELAY
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	400
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	60
PTR	PT Ratio	Range = 1.00 to 10000.00	35.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = $1.00$ to $10000.00$	35.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Y
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	69.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	$\frac{\text{Range} = 0.25}{\text{OFF}} \text{ to } 100.00,$	20.00
50G1D	Residual Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50G1TC	Residual Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
		Range = 0.25 to 100.00,	
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	OFF	OFF
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50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	3.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U4
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	1.25
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U2
51G1TD	TOC Time Dial	Range = 0.50 to 15.00	2.17
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1

51G2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1 \text{ to } 3, \text{ N}$	Ν
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	108.00
27PP1D	Phase-Phase Undervoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	12.00
27S1D	Channel VS Undervoltage Delay 1 (seconds)	Range = $0.00$ to $120.00$	0.00
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	Ν
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	Ν
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	132.00
59PP1D	Phase-Phase Overvoltage Trip Delay (seconds)	Range = $0.00$ to $120.00$	0.00
59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	Υ
25VLO	Voltage Window - Low Threshold (volts)	Range = $0.00$ to $300.00$	108.00
25VHI	Voltage Window - High Threshold (volts)	Range = $0.00$ to $300.00$	132.00
25RCF	Voltage Ratio Correction Factor	Range = $0.50$ to $2.00$	1.00
25SF	Maximum Slip Frequency (Hz)	Range = $0.05$ to $0.50$	0.20
25ANG1	Maximum Angle 1 (degrees)	Range = $0$ to $80$	15
25ANG2	Maximum Angle 2 (degrees)	Range = $0$ to $80$	15
SYNCPH	Synchronism Check Phase (VAB,VBC,VCA or deg lag VAB)	Select: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, VAB, VBC, VCA	VAB
TCLOSD	Breaker Close Time for Angle Compensation (milliseconds)	Range = 1 to 1000, OFF	OFF
BSYNCH	Block Synchronism Check (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A

SLGTP Power Factor Lag Trip Pickup Range = 0.05 to 0.99, OFF OFF   SSLDTP Power Factor Lag Alarm Pickup Range = 0.05 to 0.99, OFF OFF   SSLDAP Power Factor Lag Alarm Pickup Range = 0.05 to 0.99, OFF OFF   SSLDAP Power Factor Lag Alarm Pickup Range = 0.05 to 0.99, OFF OFF   SSLDAP Power Factor Lag Alarm Pickup Range = 0.05 to 0.99, OFF OFF   SID1TD Prequencyl Trip Delay (seconds) Range = 0.00 to 400.00 0.00   81D1TD Prequencyl Torque Control Equation (SELogic) Valid range = The legal operators: AND 0R NOT R.TRIG F_TRIG 61.00   SID2TD Frequency2 Trip Pickup (Hz) OFF 61.00 0.00   SID2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   SID2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   SID2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   SID2TD Frequency2 Trip Dickup (Hz) OFF 0   SID3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0   SID4TP Frequency5 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0   SID4TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0   SID4TP	LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SLDTP   Power Factor Lead Trip Pickup   Range = 0.05 to 0.99. OFF   OFF     S5LGAP   Power Factor Lead Alarm Pickup   Range = 0.05 to 0.99. OFF   OFF     S1DAP   Power Factor Lead Alarm Pickup   Range = 0.05 to 0.99. OFF   OFF     S1DAP   Frequency1 Trip Dickup (Hz)   Range = 15.00 to 70.00, OFF   59.00     S1D1TD   Frequency1 Trip Delay (seconds)   Range = 0.00 to 400.00   0.00     S1D1TD   Frequency1 Trip Delay (seconds)   Range = 15.00 to 70.00, OFF   61.00     S1D2TP   Frequency2 Trip Delay (seconds)   Range = 15.00 to 70.00, OFF   61.00     S1D2TD   Frequency2 Trip Delay (seconds)   Range = 15.00 to 70.00, OFF   61.00     S1D3TP   Frequency2 Torque Control Equation (SELogic)   Valid range = The legal operators: AND OR NOT R TRIG F_TRIG   1     S1D3TP   Frequency3 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     S1D4TP   Frequency4 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     S1D5TP   Frequency5 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     S1D4TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     S1D5TP   Frequency6 Trip Pickup (Hz) </td <td>55LGTP</td> <td>Power Factor Lag Trip Pickup</td> <td>Range = <math>0.05</math> to <math>0.99</math>, OFF</td> <td>OFF</td>	55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
SLGAP Power Factor Lag Alarm Pickup Range = 0.05 to 0.99. OFF OFF   SSLDAP Power Factor Lead Alarm Pickup Range = 0.05 to 0.99. OFF OFF   81D1TP Frequency I Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 59.00   81D1TD Frequency I Trip Delay (seconds) Range = 1.00 to 400.00 0.00   81D1TC Frequency I Torque Control Equation (SELogic) Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG 61.00   81D2TD Frequency 2 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 61.00   81D2TD Frequency 2 Trip Delay (seconds) Range = 1.500 to 70.00, OFF 61.00   81D2TD Frequency 2 Trip Delay (seconds) Range = 1.500 to 70.00, OFF 0.00   81D3TP Frequency 3 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 0.0FF   81D4TP Frequency 4 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 0.0FF   81D5TP Frequency 5 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 0.0FF   81D4TP Frequency 6 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 0.0FF   81D5TP Frequency 6 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 0.0FF   81D4TP Frequency 6 Trip Pickup (Hz) Range = 1.500 to 70.00, OFF 0.0FF   81D5TP Frequency 6 Trip Pickup (Hz) R	55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
S5LDAPPower Factor Lead Alarm PickupRange = 0.05 to 0.99, OFFOFF81D1TPFrequency1 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF59.0081D1TDFrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TCFrequency1 Torque Control Equation (SELogic)Valid range = The legal OFF181D2TPFrequency2 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Trip Delay (seconds)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Torque Control Equation (SELogic)Valid range = The legal OFF081D3TPFrequency2 Torque Control Equation (SELogic)Valid range = 15.00 to 70.00, OFF081D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF081D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF081D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF081D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF081D5TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF081R1TDRate-of-Change of Frequency ElementsSelect: N, 1.4181R1SUPCurrent Supervision of Rate-of-Change of FrequencyRange = 0.10 to 15.00, OFF56.081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 50.000.2581R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1TDRate-of-Change of Freque	55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TPFrequency1 Trip Pickup (Hz)Range = 15.00 to 70.00, OFF59.0081D1TDFrequency1 Trip Delay (seconds)Range = 0.00 to 400.000.0081D1TCFrequency1 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R TRIG F_TRIG181D2TPFrequency2 Trip Dickup (Hz)Range = 15.00 to 70.00, OFF61.0081D2TDFrequency2 Trip Delay (seconds)Range = 15.00 to 70.00, OFF61.0081D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal Netrotrix (AND OR NOT R TRIG F_TRIG0.0081D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D8TPFrequency6 Trip Pickup (Hz)Range = 12.5 to 300.0, OFFOFF81R1TDRate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPSubernetis (amps)State-of-Change of FrequencyRange = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Pickup (Hz/seconds)Range = 0.00 to 60.000.2581R1TDRate-of-Change of Frequency Trip 1 Pickup (Hz/seconds)Range = 0.00 to 60.000.2581R1TDRate-of-Change of Frequency Trip 1 Pickup (Hz/seconds) <td>55LDAP</td> <td>Power Factor Lead Alarm Pickup</td> <td>Range = <math>0.05</math> to <math>0.99</math>, OFF</td> <td>OFF</td>	55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TD   Frequency1 Trip Delay (seconds)   Range = 0.00 to 400.00   0.00     81D1TC   Frequency1 Torque Control Equation (SELogic)   Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG   1     81D2TD   Frequency2 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   61.00     81D2TD   Frequency2 Trip Delay (seconds)   Range = 0.00 to 400.00   0.00     81D2TD   Frequency2 Torque Control Equation (SELogic)   Valid range = The legal operators: AND OR NOT   1     81D3TP   Frequency3 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D4TP   Frequency4 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D5TP   Frequency4 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D5TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D5TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D5TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81R1TP   Rate-of-Change of Frequency Elements   Sclect: N, 1-4   1     81R1SUP   Uvitage Supervision of Rate-of-Change of Frequency Elements (volts)   Range = 0.10 to 15.00, OFF   0FF     8	81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	59.00
81D1TC     Frequency1 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT RTRG F_TRG       81D2TP     Frequency2 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     61.00       81D2TD     Frequency2 Trip Delay (seconds)     Range = 0.00 to 400.00     0.00       81D2TC     Frequency2 Torque Control Equation (SELogic)     Valid range = The legal operators: AND OR NOT R_TRG F_TRG     0       81D3TP     Frequency3 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0       81D4TP     Frequency4 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0       81D5TP     Frequency5 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0       81D6TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0       81D6TP     Frequency6 Trip Pickup (Hz)     Range = 15.00 to 70.00, OFF     0       81RVSUP     Voltage Supervision of Rate-of-Change of Frequency     Range = 15.00 to 70.00, OFF     0       81RVSUP     Voltage Supervision of Rate-of-Change of Frequency     Range = 0.5 to 10.0, OFF     0       81RTND     Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)     Range = 0.10 to 15.00, OFF     0     0       81R1TPD     Rate-of-	81D1TD	Frequency1 Trip Delay (seconds)	Range = 0.00 to 400.00	0.00
81D2TP Frequency2 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 61.00   81D2TD Frequency2 Trip Delay (seconds) Range = 0.00 to 400.00 0.00   81D2TC Frequency2 Torp Delay (seconds) Wald range = The legal operators: AND 0R NOT R. TRIG F_TRIG 1   81D3TP Frequency3 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D4TP Frequency4 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency5 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D6TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D5TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D6TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81D8TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81R1TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81R1TP Frequency6 Trip Pickup (Hz) Range = 15.00 to 70.00, OFF 0FF   81R1TP Rate-of-Change of Frequency Elements Select: N, 1-4 1   81R1TP Rate-of-Change of Frequency Elements Range = 0.10 to 15.00, OFF 0.50   81R1TD Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec) Range = 0.10 to 60.00	81D1TC	Frequency1 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D2TD   Frequency2 Trip Delay (seconds)   Range = 0.00 to 400.00   0.00     81D2TC   Frequency2 Torque Control Equation (SELogic)   Valid range = The legal operators: AND OR NOT R. TRIG F. TRIG   1     81D3TP   Frequency3 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D4TP   Frequency4 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D5TP   Frequency5 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D6TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D6TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D6TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81D6TP   Frequency6 Trip Pickup (Hz)   Range = 15.00 to 70.00, OFF   0FF     81R   Enable Rate-of-Change of Frequency Elements   Select: N. 1-4   1     81RVSUP   Voltage Supervision of Rate-of-Change of Frequency   Range = 0.5 to 10.0, OFF   0FF     81RISUP   Current Supervision of Rate-of-Change of Frequency   Range = 0.1 to 15.00, OFF   0FF     81R1TD   Rate-of-Change of Frequency Trip 1 Delay (seconds)   Range = 0.10 to 60.00   0.25     81R1TD <td>81D2TP</td> <td>Frequency2 Trip Pickup (Hz)</td> <td>Range = 15.00 to 70.00, OFF</td> <td>61.00</td>	81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	61.00
81D2TCFrequency2 Torque Control Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG181D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 0.5 to 10.0, OFF0FF81RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (volts)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TRNDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal perators: AND OR NOT R_TRIG F_TRIG1EBEMEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: Y, NNEDEMDemand MeteringSelect:	81D2TD	Frequency2 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D3TPFrequency3 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF56.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (unps)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 16.00, OFF0.2581R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.0081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG181R1TCEnable Fast Rate-of-Change of Frequency ElementsSelect: T, NNEDEMDemand MeteringSelect: S. 10, 15, 30, 6059HDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.009HDEMPResidual Ground	81D2TC	Frequency2 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D4TPFrequency4 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF56.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1D0Rate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1EDEMDemand MeteringSelect: Y, NNDMTCTime Constant (mins)Select: Y, NNDMTCTime Constant (mins)Select: THM, ROLTHMDMTCTime Constant (mins)Select: S, 0.15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TPFrequency5 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF81D6TPFrequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFFE81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF56.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1TDRate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1EBEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: S, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
$81D6TP$ Frequency6 Trip Pickup (Hz)Range = 15.00 to 70.00, OFFOFF $E81R$ Enable Rate-of-Change of Frequency ElementsSelect: N, 1-41 $81RVSUP$ Voltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF $56.0$ $81RISUP$ Current Supervision of Rate-of-Change of Frequency 	81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81REnable Rate-of-Change of Frequency ElementsSelect: N, 1-4181RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF56.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, 	81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81RVSUPVoltage Supervision of Rate-of-Change of Frequency Elements (volts)Range = 12.5 to 300.0, OFF56.081RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, 	E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	1
81RISUPCurrent Supervision of Rate-of-Change of Frequency Elements (amps)Range = 0.5 to 10.0, OFFOFF81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TPRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1D0Rate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: 51,0,15,30,605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81RVSUP	Voltage Supervision of Rate-of-Change of Frequency Elements (volts)	Range = 12.5 to 300.0, OFF	56.0
81R1TPRate-of-Change of Frequency Trip 1 Pickup (Hz/sec)Range = 0.10 to 15.00, OFF0.5081R1TRNDRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00S12DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81RISUP	Current Supervision of Rate-of-Change of Frequency Elements (amps)	Range = 0.5 to 10.0, OFF	OFF
81R1TRNDRate-of-Change of Frequency Trend 1Select: INC, DEC, ABSABS81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, 	81R1TP	Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)	Range = 0.10 to 15.00, OFF	0.50
81R1TDRate-of-Change of Frequency Trip 1 Delay (seconds)Range = 0.10 to 60.000.2581R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, 	81R1TRND	Rate-of-Change of Frequency Trend 1	Select: INC, DEC, ABS	ABS
81R1DORate-of-Change of Frequency Dropout 1 Delay (seconds)Range = 0.00 to 60.000.0081R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1TD	Rate-of-Change of Frequency Trip 1 Delay (seconds)	Range = $0.10$ to $60.00$	0.25
81R1TCRate-of-Change of Frequency Torque Control 1 Equation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG1E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1DO	Rate-of-Change of Frequency Dropout 1 Delay (seconds)	Range = $0.00$ to $60.00$	0.00
E81RFEnable Fast Rate-of-Change of Frequency ElementsSelect: Y, NNEDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF5.00GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	81R1TC	Rate-of-Change of Frequency Torque Control 1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDEMDemand MeteringSelect: THM, ROLTHMDMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF $5.00$ GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$ 312DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$	E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
DMTCTime Constant (mins)Select: 5, 10, 15, 30, 605PHDEMPPhase Pickup (amps sec.)Range = $0.50$ to $16.00$ , OFF $5.00$ GNDEMPResidual Ground Pickup (amps sec.)Range = $0.50$ to $16.00$ , OFF $1.00$ 3I2DEMPNegative-Sequence Pickup (amps sec.)Range = $0.50$ to $16.00$ , OFF $1.00$	EDEM	Demand Metering	Select: THM, ROL	THM
PHDEMPPhase Pickup (amps sec.)Range = 0.50 to 16.00, OFF $5.00$ GNDEMPResidual Ground Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$ 3I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF $1.00$	DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
GNDEMPResidual Ground Pickup (amps sec.)Range = $0.50$ to $16.00$ , OFF1.003I2DEMPNegative-Sequence Pickup (amps sec.)Range = $0.50$ to $16.00$ , OFF1.00	PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
3I2DEMPNegative-Sequence Pickup (amps sec.)Range = 0.50 to 16.00, OFF1.00	GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
	3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00

EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	3P1
3PWR1P	Three Phase Power Element Pickup (VA)	Range = 1.0 to 6500.0, OFF	50.0
PWR1T	Power Element Type	Select: +WATTS, - WATTS, +VARS, -VARS	-WATTS
PWR1D	Power Element Time Delay (seconds)	Range = $0.0$ to 240.0	0.0
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to 400.0, OFF	OFF
TR	Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 51P1T OR 51G1T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 50P1P OR 50G1P OR 50N1P)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	IN101
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 1			Тор

Group 2			Top
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Ν
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to $100.00$ ,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	N
51CCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P2RS	EM Reset Delay	Select: Y, N	N
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

Group 2			Тор
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T

Group 3			Top
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = 0.00 to 90.00	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51AMR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	N
51CCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P2RS	EM Reset Delay	Select: Y, N	N
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

Group 3			Тор
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T

Group 4			Top
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = 0.00 to 90.00	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51AMR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

TOC Time Dial	Range = $0.50$ to $15.00$	3.00
EM Reset Delay	Select: Y, N	N
Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
TOC Time Dial	Range = $0.50$ to $15.00$	3.00
EM Reset Delay	Select: Y, N	N
Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
TOC Time Dial	Range = $0.50$ to $15.00$	3.00
EM Reset Delay	Select: Y, N	N
Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
TOC Time Dial	Range = $0.50$ to $15.00$	3.00
EM Reset Delay	Select: Y, N	Ν
Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
TOC Time Dial	Range = $0.50$ to $15.00$	3.00
EM Reset Delay	Select: Y, N	Ν
Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
	TOC Time Dial     EM Reset Delay     Constant Time Adder (seconds)     Minimum Response Time (seconds)     Phase Time Overcurrent Torque Control (SELogic)     Time Overcurrent Trip Pickup (amps sec.)     TOC Curve Selection     TOC Time Dial     EM Reset Delay     Constant Time Adder (seconds)     Minimum Response Time (seconds)     Minimum Response Time (seconds)     Phase Time Overcurrent Torque Control (SELogic)     Time Overcurrent Trip Pickup (amps sec.)     TOC Time Dial     EM Reset Delay     Constant Time Adder (seconds)     Minimum Response Time (seconds)     Minimum Response Time (seconds)     Minimum Response Time (seconds)     Maximum Phase Time Overcurrent Torque Control (SELogic)     Time Overcurrent Trip Pickup (amps sec.)     TOC Curve Selection     TOC Time Dial     EM Reset Delay     Constant Time Adder (seconds)     Minimum Response Time (seconds)     Minimium Response Time (seconds)	TOC Time DialRange = 0.50 to 15.00EM Reset DelaySelect: Y, NConstant Time Adder (seconds)Range = 0.00 to 1.00Minimum Response Time (seconds)Range = 0.00 to 1.00Phase Time Overcurrent Torque Control (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGTime Overcurrent Trip Pickup (amps sec.)Range = 0.25 to 24.00, OFFTOC Curve SelectionSelect: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5TOC Time DialRange = 0.50 to 15.00EM Reset DelaySelect: Y, NConstant Time Adder (seconds)Range = 0.00 to 1.00Minimum Response Time (seconds)Range = 0.00 to 1.00Minimum Response Time (seconds)Range = 0.25 to 24.00, operators: AND OR NOT R_TRIG F_TRIGTime Overcurrent Torque Control (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGTime Overcurrent Trip Pickup (amps sec.)Range = 0.25 to 24.00, OFFTOC Curve SelectionSelect: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5TOC Time DialRange = 0.50 to 15.00EM Reset DelaySelect: Y, NConstant Time Adder (seconds)Range = 0.00 to 1.00Minimum Response Time (seconds)Range = 0.00 to 1.00Minimum Response Time (seconds)Range = 0.25 to 24.00, OFFToC Curve SelectionSelect: Y, NConstant Time Adder (seconds)Range = 0.25 to 24.00, OFFTime Overcurrent Trip Pickup (amps sec.)Range = 0.25 to 24.00, OFFToC Curve SelectionSelect: Y, NConstant Time Adder (seconds)Range = 0.25 to

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = 0.05 to 0.99, OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = 0.05 to 0.99, OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = 0.0 to 400.0, OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 4			

Logic 1			Top
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	10
ESV	SELogic Variables/Timers	Range = 1 to 32, N	10
ESC	SELogic Counters	Range = 1  to  32,  N	N
EMV	SELogic Math Variables	Range = 1  to  32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA

SET08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T OR SV05T OR SV08T OR 78VSO OR 81R1T #DIRECT TRIP
SV02PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	27PP1T OR 59PP1T OR 81D1T OR 81D2T #UTILITY FAIL
SV03PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV03DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(NOT SV02 AND 27S1) #SYNC CHECK OK
SV04PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM #PROTECTION RELAY FAIL
SV05PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV05DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV05	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(27PP1T OR 59PP1T OR 81D1T OR 81D2T) AND IN302 #LOU WHILE

	1	li l	PARALLELED
SV06PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV06DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV06	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV07PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV07DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV07	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV08PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	1.00
SV08DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV08	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	3PWR1T AND NOT IN303 #REVERSE POWER TRIP
SV09PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV09DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV09	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV10PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV10DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV10	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT101FS	OUT101 Fail-Safe	Select: Y, N	N
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP #TRIP
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV01T #DIRECT TRIP
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Y
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV04T #PROTECTIVE RELAY ALARM TO PLC
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T #SYNC CLOSE CIRCUIT
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T #SYNC CHECK TO PLC
OUT303FS	OUT303 Fail-Safe	Select: Y, N	N
OUT303FS	OUT303 Fail-Safe	Select: Y, N	N

OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV02T #LOSS UTILITY TO PLC
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV01T #DIRECT TRIP
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV01T #DIRECT TRIP TO PLC
OUT402FS	OUT402 Fail-Safe	Select: Y, N	Ν
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 1			Тор

Logic 2			Top
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	N
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	N
ESC	SELogic Counters	Range = $1$ to $32$ , N	N
EMV	SELogic Math Variables	Range = $1$ to $32$ , N	N
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Ν
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT102FS	OUT102 Fail-Safe	Select: Y, N	N
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT301FS	OUT301 Fail-Safe	Select: Y, N	N
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	N
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	N
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R TRIG F TRIG	
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 2			Top

Logic 3			Top
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	N
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	N
ESC	SELogic Counters	Range = $1$ to $32$ , N	N
EMV	SELogic Math Variables	Range = $1$ to $32$ , N	N
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Ν
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT102FS	OUT102 Fail-Safe	Select: Y, N	N
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	N
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 3			Top

Logic 4			<u>Top</u>
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	N
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	N
ESC	SELogic Counters	Range = $1$ to $32$ , N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Ν
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	N
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 4			Top

Front Pane	1		<u>Top</u>
Setting	Description	Range	Value
EDP	Display Points Enable	Range = $1$ to $32$ , N	4
ELB	Local Bits Enable	Range = 1 to 32, N	N
FP_TO	Front-Panel Timeout (mins)	Range = $1$ to $30$ , OFF	15
FP_CONT	Front-Panel Contrast	Range = $1 \text{ to } 16$	10
FP_AUTO	Front-Panel Automessages	Select: OVERRIDE, ROTATING	OVERRIDE
RSTLED	Reset Trip-Latched LEDs On Close	Select: Y, N	Y
LEDENAC	ENABLED LED Asserted Color	Select: R, G, A	G
LEDTRPC	TRIP LED Asserted Color	Select: R, G, A	R
MAXACC	Maximum Access Level	Select: 1, 2	2
T01LEDL	Trip Latch T_LED	Select: Y, N	Y
T01LEDC	Target T01_LED Asserted Color (R,G,A)	Select: R, G, A	R
T01_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T
T02LEDL	Trip Latch T_LED	Select: Y, N	Y
T02LEDC	Target T02_LED Asserted Color (R,G,A)	Select: R, G, A	R
T02_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51AT OR 51BT OR 51CT OR 51P1T OR 51P2T
T03LEDL	Trip Latch T_LED	Select: Y, N	Y
T03LEDC	Target T03_LED Asserted Color (R,G,A)	Select: R, G, A	R
T03_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51N1T OR 51G1T OR 51N2T OR 51G2T
T04LEDL	Trip Latch T_LED	Select: Y, N	Y
T04LEDC	Target T04_LED Asserted Color (R,G,A)	Select: R, G, A	R
T04_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51QT
T05LEDL	Trip Latch T_LED	Select: Y, N	Y
T05LEDC	Target T05_LED Asserted Color (R,G,A)	Select: R, G, A	R
T05_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	81D1T OR 81D2T OR 81D3T OR 81D4T
T06LEDL	Trip Latch T_LED	Select: Y, N	N
T06LEDC	Target T06_LED Asserted Color (R,G,A)	Select: R, G, A	R
T06_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(BFT OR T06_LED) AND NOT TRGTR
PB1ALEDC	PB1A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO

PB1A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	79RS
PB1BLEDC	PB1B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB1B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	79LO
PB2ALEDC	PB2A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB2A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT02 OR SV02 AND NOT SV02T AND SV05T
PB2BLEDC	PB2B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB2B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT02 OR SV02 AND NOT SV02T AND SV05T
PB3ALEDC	PB3A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB3A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT LT02 AND NOT 52A
PB3BLEDC	PB3B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB3B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A OR SV03 AND NOT SV03T AND SV05T
PB4ALEDC	PB4A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB4A_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4BLEDC	PB4B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
PB4B_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A OR SV04 AND NOT SV04T AND SV05T
DP01	Display Point (60 characters)		TID, " {16}"
DP02	Display Point (60 characters)		P, "3P POWER= {4, 1} KW"
DP03	Display Point (60 characters)		SV02T, , "UTILITY FAILED"
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DP04	Display Point (60 characters)	0
Front Pane	2	Тор

Report <u>Top</u>			
Setting	Description	Range	Value
ER	Event Report Trigger (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG 51P1P OR R_TRIG 51G1P OR R_TRIG 51N1P OR R_TRIG 50P1P OR R_TRIG 50G1P OR R_TRIG 50N1P
LER	Length of Event Report (cycles)	Select: 15, 64, 180	15
PRE	Prefault Length (cycles)	Range = $1$ to $10$	5
ESERDEL	Auto-Removal Enable	Select: Y, N	N
SER1	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	IN101, IN301, IN302, OUT301, 51P1T, 51G1T, 51N1T, 50P1P, 50G1T, 50N1T, SV08
SER2	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	52A
SER3	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	SV05T, SV02T
SER4	(24 Relay Word bits)	Valid range $= 0$ , NA or a list of relay elements.	SALARM, HALARM
EALIAS	Enable ALIAS Settings	Range = $1$ to $20$ , N	N
FMR1NAM	Fast Message Read Name1 (9 characters)	Range = ASCII string with a maximum length of $9$ .	FMR1
FMR1	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR2NAM	Fast Message Read Name2 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR2
FMR2	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR3NAM	Fast Message Read Name3 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR3
FMR3	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR4NAM	Fast Message Read Name4 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR4
FMR4	(24 analog quantities)	Valid range $= 0$ , NA or a list of relay elements.	NA
RA01TYPE	Remote Analog 01 type	Select: I, F, L	Ι
RA02TYPE	Remote Analog 02 type	Select: I, F, L	Ι
RA03TYPE	Remote Analog 03 type	Select: I, F, L	Ι
RA04TYPE	Remote Analog 04 type	Select: I, F, L	Ι
RA05TYPE	Remote Analog 05 type	Select: I, F, L	Ι
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RA06TYPE	Remote Analog 06 type	Select: I, F, L	Ι
RA07TYPE	Remote Analog 07 type	Select: I, F, L	Ι
RA08TYPE	Remote Analog 08 type	Select: I, F, L	Ι
RA09TYPE	Remote Analog 09 type	Select: I, F, L	Ι
RA10TYPE	Remote Analog 10 type	Select: I, F, L	Ι
RA11TYPE	Remote Analog 11 type	Select: I, F, L	Ι
RA12TYPE	Remote Analog 12 type	Select: I, F, L	Ι
RA13TYPE	Remote Analog 13 type	Select: I, F, L	Ι
RA14TYPE	Remote Analog 14 type	Select: I, F, L	Ι
RA15TYPE	Remote Analog 15 type	Select: I, F, L	Ι
RA16TYPE	Remote Analog 16 type	Select: I, F, L	Ι
RA17TYPE	Remote Analog 17 type	Select: I, F, L	Ι
RA18TYPE	Remote Analog 18 type	Select: I, F, L	Ι
RA19TYPE	Remote Analog 19 type	Select: I, F, L	Ι
RA20TYPE	Remote Analog 20 type	Select: I, F, L	Ι
RA21TYPE	Remote Analog 21 type	Select: I, F, L	Ι
RA22TYPE	Remote Analog 22 type	Select: I, F, L	Ι
RA23TYPE	Remote Analog 23 type	Select: I, F, L	Ι
RA24TYPE	Remote Analog 24 type	Select: I, F, L	Ι
RA25TYPE	Remote Analog 25 type	Select: I, F, L	Ι
RA26TYPE	Remote Analog 26 type	Select: I, F, L	Ι
RA27TYPE	Remote Analog 27 type	Select: I, F, L	Ι
RA28TYPE	Remote Analog 28 type	Select: I, F, L	Ι
RA29TYPE	Remote Analog 29 type	Select: I, F, L	Ι
RA30TYPE	Remote Analog 30 type	Select: I, F, L	Ι
RA31TYPE	Remote Analog 31 type	Select: I, F, L	Ι
RA32TYPE	Remote Analog 32 type	Select: I, F, L	Ι
LDLIST	Load Profile List (17 Analog Quantities)	Range = Maximum of 17 Analog Elements	NA
LDAR	Load Profile Acquisition Rate (mins)	Select: 5, 10, 15, 30, 60	15
Report <u>Top</u>			

Port F Top			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	N
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to 30	5
RTSCTS	Hardware Handshaking	Select: Y, N	N
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
Port F			Тор

Port 1 <u>Top</u>			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
EETHFWU	Enable Ethernet Firmware Upgrade	Select: Y, N	N
IPADDR	Device IP Address [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.155
SUBNETM	Subnet Mask [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	255.255.255.0
DEFRTR	Default Router Gateway [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.1
ЕТСРКА	Enable TCP Keep-Alive	Select: Y, N	Y
KAIDLE	TCP Keep-Alive Idle Range (seconds)	Range = $1$ to $20$	10
KAINTV	TCP Keep-Alive Interval Range (seconds)	Range = $1$ to $20$	1
KACNT	TCP Keep-Alive Count Range	Range = $1$ to $20$	6
ETELNET	Enable Telnet	Select: Y, N	Y
MAXACC	Maximum Access Level	Select: 1, 2, C	2
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
TPORT	Telnet Port	Range = 1025 to 65534, 23	23
TCBAN	Telnet Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	TERMINAL SERVER
TIDLE	Telnet Port Timeout (mins)	Range = $1$ to $30$	15
FASTOP	Fast Operate	Select: Y, N	Ν
EFTPSERV	Enable FTP	Select: Y, N	Y
FTPACC	FTP Maximum Access Level	Select: 1, 2, C	2
FTPUSER	FTP User Name (20 characters)	Range = ASCII string with a maximum length of 20.	FTPUSER
FTPCBAN	FTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	FTP SERVER
FTPIDLE	FTP Idle Time (mins)	Range = $5$ to $255$	5
E61850	Enable IEC 61850 Protocol	Select: Y, N	Y
EGSE	Enable IEC 61850 GOOSE	Select: Y, N	Y
EMMSFS	Enable MMS File Services	Select: Y, N	Y
E850MBC	Enable 61850 Mode/Behavior Control	Select: Y, N	Ν
EOFFMTX	Enable GOOSE Tx in Off Mode	Select: Y, N	Ν
EMOD	Enable Modbus Sessions	Select: 0-2	0
EHTTP	Enable HTTP Server	Select: Y, N	Y
HTTPACC	HTTP Maximum Accesss Level	Select: 1, 2	2
HTTPPORT	HTTP Server TCP/IP Port Number	Range = 1 to 65534	80
HTTPBAN	HTTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	THIS SYSTEM IS FOR THE USE OF AUTHORIZED PERSONNEL

			ONLY.
HTTPIDLE	HTTP Web Server Timeout (minutes)	Range = $1$ to $60$	10
ESNTP	Enable SNTP Client	Select: OFF, UNICAST, MANYCAST, BROADCAST	OFF
EPTP	Enable PTP	Select: Y, N	Ν
Port 1			Ton
			<u>rob</u>

Port 2			Top
Setting	Description	Range	Value
Port 2			Тор

Port 3 Top			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU, MBA, MBB, MB8A, MB8B, MBTA, MBTB	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	Ν
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = $0$ to $30$	5
RTSCTS	Hardware Handshaking	Select: Y, N	Ν
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	Ν
FASTOP	Fast Operate	Select: Y, N	Ν
Port 3			<u>Тор</u>

Modbus User Map Top			
Setting	Description	Range	Value
MOD_001	USER REG#001 (8 characters)	Range = Maximum of 1 Digital Elements	IA_MAG
MOD_002	USER REG#002 (8 characters)	Range = Maximum of 1 Digital Elements	IB_MAG
MOD_003	USER REG#003 (8 characters)	Range = Maximum of 1 Digital Elements	IC_MAG
MOD_004	USER REG#004 (8 characters)	Range = Maximum of 1 Digital Elements	IN_MAG
MOD_005	USER REG#005 (8 characters)	Range = Maximum of 1 Digital Elements	IG_MAG
MOD_006	USER REG#006 (8 characters)	Range = Maximum of 1 Digital Elements	IAV
MOD_007	USER REG#007 (8 characters)	Range = Maximum of 1 Digital Elements	312
MOD_008	USER REG#008 (8 characters)	Range = Maximum of 1 Digital Elements	UBI
MOD_009	USER REG#009 (8 characters)	Range = Maximum of 1 Digital Elements	VAVE
MOD_010	USER REG#010 (8 characters)	Range = Maximum of 1 Digital Elements	3V2
MOD_011	USER REG#011 (8 characters)	Range = Maximum of 1 Digital Elements	UBV
MOD_012	USER REG#012 (8 characters)	Range = Maximum of 1 Digital Elements	Р
MOD_013	USER REG#013 (8 characters)	Range = Maximum of 1 Digital Elements	Q
MOD_014	USER REG#014 (8 characters)	Range = Maximum of 1 Digital Elements	S
MOD_015	USER REG#015 (8 characters)	Range = Maximum of 1 Digital Elements	PF
MOD_016	USER REG#016 (8 characters)	Range = Maximum of 1 Digital Elements	FREQ
MOD_017	USER REG#017 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIH
MOD_018	USER REG#018 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIL
MOD_019	USER REG#019 (8 characters)	Range = Maximum of 1 Digital Elements	МѠНЗРОН
MOD_020	USER REG#020 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3POL
MOD_021	USER REG#021 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIH
MOD_022	USER REG#022 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIL
		Range = Maximum of 1	

MOD_023	USER REG#023 (8 characters)	Digital Elements	MVRH3POH
MOD_024	USER REG#024 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3POL
MOD_025	USER REG#025 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PH
MOD_026	USER REG#026 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PL
MOD_027	USER REG#027 (8 characters)	Range = Maximum of 1 Digital Elements	RTDWDGMX
MOD_028	USER REG#028 (8 characters)	Range = Maximum of 1 Digital Elements	RTDBRGMX
MOD_029	USER REG#029 (8 characters)	Range = Maximum of 1 Digital Elements	RTDAMB
MOD_030	USER REG#030 (8 characters)	Range = Maximum of 1 Digital Elements	RTDOTHMX
MOD_031	USER REG#031 (8 characters)	Range = Maximum of 1 Digital Elements	IARMS
MOD_032	USER REG#032 (8 characters)	Range = Maximum of 1 Digital Elements	IBRMS
MOD_033	USER REG#033 (8 characters)	Range = Maximum of 1 Digital Elements	ICRMS
MOD_034	USER REG#034 (8 characters)	Range = Maximum of 1 Digital Elements	INRMS
MOD_035	USER REG#035 (8 characters)	Range = Maximum of 1 Digital Elements	IAMX
MOD_036	USER REG#036 (8 characters)	Range = Maximum of 1 Digital Elements	IAMN
MOD_037	USER REG#037 (8 characters)	Range = Maximum of 1 Digital Elements	IBMX
MOD_038	USER REG#038 (8 characters)	Range = Maximum of 1 Digital Elements	IBMN
MOD_039	USER REG#039 (8 characters)	Range = Maximum of 1 Digital Elements	ICMX
MOD_040	USER REG#040 (8 characters)	Range = Maximum of 1 Digital Elements	ICMN
MOD_041	USER REG#041 (8 characters)	Range = Maximum of 1 Digital Elements	INMX
MOD_042	USER REG#042 (8 characters)	Range = Maximum of 1 Digital Elements	INMN
MOD_043	USER REG#043 (8 characters)	Range = Maximum of 1 Digital Elements	IGMX
MOD_044	USER REG#044 (8 characters)	Range = Maximum of 1 Digital Elements	IGMN
MOD_045	USER REG#045 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMX
MOD_046	USER REG#046 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMN
MOD_047	USER REG#047 (8 characters)	Range = Maximum of 1 Digital Elements	KVAR3PMX
MOD_048	USER REG#048 (8 characters)	Range = Maximum of 1	KVAR3PMN

		Digital Elements	
MOD_049	USER REG#049 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMX
MOD_050	USER REG#050 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMN
MOD_051	USER REG#051 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMX
MOD_052	USER REG#052 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMN
MOD_053	USER REG#053 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_LO
MOD_054	USER REG#054 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_HI
MOD_055	USER REG#055 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_LO
MOD_056	USER REG#056 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_HI
MOD_057	USER REG#057 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_058	USER REG#058 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_059	USER REG#059 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_060	USER REG#060 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_061	USER REG#061 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_062	USER REG#062 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_063	USER REG#063 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_064	USER REG#064 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_065	USER REG#065 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_066	USER REG#066 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_067	USER REG#067 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_068	USER REG#068 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_069	USER REG#069 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_070	USER REG#070 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_071	USER REG#071 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_072	USER REG#072 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_073	USER REG#073 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_074	USER REG#074 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_075	USER REG#075 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_076	USER REG#076 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_077	USER REG#077 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_078	USER REG#078 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_079	USER REG#079 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_080	USER REG#080 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_081	USER REG#081 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_082	USER REG#082 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_083	USER REG#083 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_084	USER REG#084 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_085	USER REG#085 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_086	USER REG#086 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_087	USER REG#087 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_088	USER REG#088 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_089	USER REG#089 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_090	USER REG#090 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_091	USER REG#091 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_092	USER REG#092 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_093	USER REG#093 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_094	USER REG#094 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_095	USER REG#095 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_096	USER REG#096 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_097	USER REG#097 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_098	USER REG#098 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_099	USER REG#099 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_100	USER REG#100 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_101	USER REG#101 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_102	USER REG#102 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_103	USER REG#103 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_104	USER REG#104 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_105	USER REG#105 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_106	USER REG#106 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_107	USER REG#107 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_108	USER REG#108 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_109	USER REG#109 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_110	USER REG#110 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_111	USER REG#111 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_112	USER REG#112 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_113	USER REG#113 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_114	USER REG#114 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_115	USER REG#115 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_116	USER REG#116 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_117	USER REG#117 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_118	USER REG#118 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_119	USER REG#119 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_120	USER REG#120 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_121	USER REG#121 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_122	USER REG#122 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_123	USER REG#123 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_124	USER REG#124 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_125	USER REG#125 (8 characters)	Range = Maximum of 1 Digital Elements	NA
Modbus U	ser Map		
			<u>Тор</u>

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## **SEL-751 Settings Report**

				1				
Group	Setting	Range	Default Value	Value	Delta	Description	Comments	Hidden
1	50P1P	Range = 0.25 to 100.00, OFF	10.00	10.00	False	Maximum Phase Overcurrent Trip Pickup (amps sec.)		False
1	50P1D	Range = 0.00 to 400.00, OFF	0.00	0.00	False	Maximum Phase Overcurrent Trip Delay (seconds)		False
1	50G1P	Range = 0.25 to 100.00, OFF	OFF	5.00	True	Residual Overcurrent Trip Pickup (amps sec.)		False
1	50G1D	Range = 0.00 to 400.00, OFF	0.50	0.00	True	Residual Overcurrent Trip Delay (seconds)		False
1	51P1P	Range = 0.25 to 24.00, OFF	6.00	6.00	False	Time Overcurrent Trip Pickup (amps sec.)		False
1	51P1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U3	False	TOC Curve Selection		False
1	51P1TD	Range = 0.50 to 15.00	3.00	3.00	False	TOC Time Dial		False
1	51G1P	Range = 0.25 to 24.00, OFF	0.50	2.50	True	Time Overcurrent Trip Pickup (amps sec.)		False
1	51G1C	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3	U3	False	TOC Curve Selection		False
1	51G1TD	Range = 0.50 to 15.00	1.50	1.50	False	TOC Time Dial		False
1	TR	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T OR ORED51T OR ORED81T OR REMTRIP OR OC OR SV04T	50P1T OR 51P1T	True	Trip (SELogic)		False
<b>6</b> (Group = 1)	Group = 1) and ((Setting = 50P1D) or (Setting = 50P1P) or (Setting = 50G1D) or (Setting = 50G1P) or (Setting = 51G1C) or (Setting = 51G1P) or (Setting = 51G1D) or (Setting = 51P1C) or (Setting = 51P1P) o							

## SEL-751 Settings Report

## **Overview Information**

File Name	52-TG-LB AL 7-26-2021
RDB	WJ-Hooper.rdb
Device	SEL-751
Setting Version Number	008
Part Number	751202CCCBC70851D10
Firmware ID	SEL-751-R300-V3-Z008004-D20210104
SELBoot Firmware ID	SLBT7XX-R600-V0-Z000000-D20200331

## Settings

Global		
Group 1		
Group 2		
<u>Group 3</u>		
<u>Group 4</u>		
Logic 1		
Logic 2		
Logic 3		
Logic 4		
Front Panel		
Report		
Port F		
Port 1		
Port 2		
Port 3		
Modbus User Map		
Settings Legend		
Visible Setting		
Hidden Setting		
Invalid Setting		

Global				
Setting	Description	Range	Value	
PHROT	Phase Rotation	Select: ABC, ACB	ABC	
FNOM	Rated Frequency (Hz)	Select: 50, 60	60	
DATE_F	Date Format	Select: MDY, YMD, DMY	MDY	
METHRES	Meter Cutoff Threshold	Select: Y, N	Y	
FAULT	Fault Condition (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50G1P OR 50N1P OR 51P1P OR 51QP OR 50Q1P OR TRIP	
EMP	Messenger Points Enable	Range = $1$ to $32$ , N	Ν	
TGR	Group Change Delay (seconds)	Range = $0$ to $400$	3	
SS1	Select Settings Group1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1	
SS2	Select Settings Group2 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
SS3	Select Settings Group3 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
SS4	Select Settings Group4 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
EPMU	Enable Synchronized Phasor Measurement	Select: Y, N	Ν	
IRIGC	IRIG-B Control Bits Definition	Select: NONE, C37.118	NONE	
UTC_OFF	Offset From UTC (hours, in 0.25 hour increments)	Range = $-24.00$ to $24.00$	0.00	
DST_BEGM	Month To Begin DST	Range = $1$ to $12$ , OFF	OFF	
52ABF	52A Interlock in BF Logic	Select: Y, N	Ν	
50BFP	Breaker-Failure Current Detector Pickup (amps sec.)	Range = $0.10$ to $10.00$	0.10	
BFD	Breaker Failure Delay (seconds)	Range = $0.00$ to $2.00$	0.50	
ATD	Auxiliary Timer Delay (seconds)	Range = 0.00 to 2.00, OFF	OFF	
BFI	Breaker Failure Initiate (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG TRIP	
BFISID	Breaker Failure Initiate Seal-In Delay (seconds)	Range = 0.00 to 2.00, OFF	0.00	
BFRTD	Breaker Retrip Delay (seconds)	Range = 0.00 to 2.00, OFF	0.05	
BFTR	Breaker Failure Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
BFULTR	Breaker Failure Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
50PAFP	Arc-Flash Maximum Phase Overcurrent Pickup (amps sec.)	Range = 0.50 to 100.00, OFF	OFF	

AOUTSLOT	Select Arc-Flash Output Slot	Select: 101_3, 401_4, 301_4	101_3
AFSENS1	Arc-Flash Input 1 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS2	Arc-Flash Input 2 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS3	Arc-Flash Input 3 Sensor Type	Select: NONE, POINT, FIBER	NONE
AFSENS4	Arc-Flash Input 4 Sensor Type	Select: NONE, POINT, FIBER	NONE
AO401AQ	AO401 Analog Quantity (Off, 1 analog quantity)	Range = Maximum of 1 Analog Elements	OFF
DCLOP	DC Battery LO Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
DCHIP	DC Battery HI Voltage Pickup (Vdc)	Range = 20.00 to 300.00, OFF	OFF
IN101D	IN101 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN102D	IN102 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN301D	IN301 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN302D	IN302 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN303D	IN303 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN304D	IN304 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN401D	IN401 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
IN402D	IN402 Debounce (milliseconds)	Range = 0 to 65000, AC	10
IN403D	IN403 Debounce (milliseconds)	Range = $0$ to 65000, AC	10
EBMON	Enable Breaker Monitor	Select: Y, N	N
RSTTRGT	Reset Targets (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTENRGY	Reset Energy (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTMXMN	Reset Max/Min (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTDEM	Reset Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
RSTPKDEM	Reset Peak Demand (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
DSABLSET	Disable Settings (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
TIME_SRC	IRIG Time Source	Select: IRIG1, IRIG2	IRIG1
89EN2P	Enable Two Position Disconnects	Range = $1$ to $8$ , N	8
89NM2P1	Disconnect 1 Name	Range = ASCII string with a maximum length of 16.	2P1
		Valid range = The legal	

89A2P1	Disconnect 1 N/O Contact (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	0
89B2P1	Disconnect 1 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P1
89A2P1D	Disconnect 1 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P1D	Disconnect 1 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P1D	Disconnect 1 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P1	Disconnect 1 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P1
89CB2P1	Disconnect 1 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89CR2P1	Disconnect 1 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P1 OR 89CS2P1 OR 89AL2P1
89CT2P1	Disconnect 1 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P1
89RO2P1	Disconnect 1 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P1
89OB2P1	Disconnect 1 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P1
89OR2P1	Disconnect 1 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P1 OR 89OS2P1 OR 89AL2P1
89OT2P1	Disconnect 1 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P1
89NM2P2	Disconnect 2 Name	Range = ASCII string with a maximum length of 16.	2P2
89A2P2	Disconnect 2 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P2	Disconnect 2 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P2
89A2P2D	Disconnect 2 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P2D	Disconnect 2 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P2D	Disconnect 2 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P2	Disconnect 2 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P2
89CB2P2	Disconnect 2 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT	89AL2P2

		R_TRIG F_TRIG	
89CR2P2	Disconnect 2 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P2 OR 89CS2P2 OR 89AL2P2
89CT2P2	Disconnect 2 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P2
89RO2P2	Disconnect 2 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P2
89OB2P2	Disconnect 2 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P2
89OR2P2	Disconnect 2 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P2 OR 89OS2P2 OR 89AL2P2
89OT2P2	Disconnect 2 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P2
89NM2P3	Disconnect 3 Name	Range = ASCII string with a maximum length of 16.	2P3
89A2P3	Disconnect 3 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P3	Disconnect 3 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P3
89A2P3D	Disconnect 3 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P3D	Disconnect 3 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P3D	Disconnect 3 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P3	Disconnect 3 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P3
89CB2P3	Disconnect 3 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89CR2P3	Disconnect 3 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P3 OR 89CS2P3 OR 89AL2P3
89CT2P3	Disconnect 3 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P3
89RO2P3	Disconnect 3 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P3
89OB2P3	Disconnect 3 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P3
89OR2P3	Disconnect 3 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P3 OR 89OS2P3 OR 89AL2P3

89OT2P3	Disconnect 3 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P3
89NM2P4	Disconnect 4 Name	Range = ASCII string with a maximum length of 16.	2P4
89A2P4	Disconnect 4 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P4	Disconnect 4 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P4
89A2P4D	Disconnect 4 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P4D	Disconnect 4 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P4D	Disconnect 4 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P4	Disconnect 4 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P4
89CB2P4	Disconnect 4 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89CR2P4	Disconnect 4 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P4 OR 89CS2P4 OR 89AL2P4
89CT2P4	Disconnect 4 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P4
89RO2P4	Disconnect 4 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P4
89OB2P4	Disconnect 4 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P4
89OR2P4	Disconnect 4 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P4 OR 89OS2P4 OR 89AL2P4
89OT2P4	Disconnect 4 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P4
89NM2P5	Disconnect 5 Name	Range = ASCII string with a maximum length of 16.	2P5
89A2P5	Disconnect 5 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P5	Disconnect 5 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P5
89A2P5D	Disconnect 5 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P5D	Disconnect 5 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P5D	Disconnect 5 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00,	0.33

		OFF	
89RC2P5	Disconnect 5 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P5
89CB2P5	Disconnect 5 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89CR2P5	Disconnect 5 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P5 OR 89CS2P5 OR 89AL2P5
89CT2P5	Disconnect 5 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P5
89RO2P5	Disconnect 5 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P5
89OB2P5	Disconnect 5 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P5
89OR2P5	Disconnect 5 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P5 OR 89OS2P5 OR 89AL2P5
89OT2P5	Disconnect 5 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P5
89NM2P6	Disconnect 6 Name	Range = ASCII string with a maximum length of 16.	2P6
89A2P6	Disconnect 6 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P6	Disconnect 6 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P6
89A2P6D	Disconnect 6 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P6D	Disconnect 6 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P6D	Disconnect 6 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P6	Disconnect 6 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P6
89CB2P6	Disconnect 6 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89CR2P6	Disconnect 6 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P6 OR 89CS2P6 OR 89AL2P6
89CT2P6	Disconnect 6 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P6
89RO2P6	Disconnect 6 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P6

89OB2P6	Disconnect 6 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P6
89OR2P6	Disconnect 6 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P6 OR 89OS2P6 OR 89AL2P6
89OT2P6	Disconnect 6 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P6
89NM2P7	Disconnect 7 Name	Range = ASCII string with a maximum length of 16.	2P7
89A2P7	Disconnect 7 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P7	Disconnect 7 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89A2P7
89A2P7D	Disconnect 7 Alarm Timer (seconds)	Range = $0.00$ to $300.00$	5.00
89S2P7D	Disconnect 7 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P7D	Disconnect 7 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P7	Disconnect 7 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P7
89CB2P7	Disconnect 7 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89CR2P7	Disconnect 7 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P7 OR 89CS2P7 OR 89AL2P7
89CT2P7	Disconnect 7 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P7
89RO2P7	Disconnect 7 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P7
89OB2P7	Disconnect 7 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P7
89OR2P7	Disconnect 7 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P7 OR 89OS2P7 OR 89AL2P7
89OT2P7	Disconnect 7 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P7
89NM2P8	Disconnect 8 Name	Range = ASCII string with a maximum length of 16.	2P8
89A2P8	Disconnect 8 N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
89B2P8	Disconnect 8 N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT	NOT 89A2P8

		R_TRIG F_TRIG	1
89A2P8D	Disconnect 8 Alarm Timer (seconds)	Range = 0.00 to 300.00	5.00
89S2P8D	Disconnect 8 Open and Close Seal-in Time (seconds)	Range = 0.00 to 300.00, OFF	4.67
89I2P8D	Disconnect 8 Open and Close Immobility Time (seconds)	Range = 0.00 to 300.00, OFF	0.33
89RC2P8	Disconnect 8 Remote Close Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CC2P8
89CB2P8	Disconnect 8 Close Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89CR2P8	Disconnect 8 Close Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89CL2P8 OR 89CS2P8 OR 89AL2P8
89CT2P8	Disconnect 8 Close Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 890P2P8
89RO2P8	Disconnect 8 Remote Open Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OC2P8
89OB2P8	Disconnect 8 Open Block (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89AL2P8
89OR2P8	Disconnect 8 Open Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	89OP2P8 OR 89OS2P8 OR 89AL2P8
89OT2P8	Disconnect 8 Open Immobility Time Reset (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 89CL2P8
89EN3P	Enable Three Position Disconnects	Range = $1$ to $2$ , N	N
EN_LRC	Enable Local Remote Control	Select: Y, N	Ν
SC850BM	IEC 61850 Blocked Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SC850TM	IEC 61850 Test Mode Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Setting	Description	Range	Value		
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	SEL-751		
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	52-FEEDER RELAY		
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120		
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120		
PTR	PT Ratio	Range = 1.00 to 10000.00	35.00		
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	35.00		
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA		
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS		
SINGLEV	Single Voltage Input	Select: Y, N	Y		
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00		
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00		
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1		
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	5.00		
50G1D	Residual Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00		
50G1TC	Residual Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1		
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF		
		Range = $0.25$ to 100.00,			

50G4P	Residual Overcurrent Trip Pickup (amps sec.)	OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = 1 to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	2.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
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51G2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
EDIR	Enable Directional Control	Select: Y, AUTO, N	Ν
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	Ν
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	Ν
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	Ν
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	108.00
27PP1D	Phase-Phase Undervoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.50
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	12.00
27S1D	Channel VS Undervoltage Delay 1 (seconds)	Range = 0.00 to 120.00	0.00
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	Ν
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	132.00
59PP1D	Phase-Phase Overvoltage Trip Delay (seconds)	Range = 0.00 to 120.00	0.00
59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	Υ
25VLO	Voltage Window - Low Threshold (volts)	Range = 0.00 to 300.00	108.00
25VHI	Voltage Window - High Threshold (volts)	Range = 0.00 to 300.00	132.00
25RCF	Voltage Ratio Correction Factor	Range = $0.50$ to $2.00$	1.00
25SF	Maximum Slip Frequency (Hz)	Range = $0.05$ to $0.50$	0.20
25ANG1	Maximum Angle 1 (degrees)	Range = $0$ to $80$	15
25ANG2	Maximum Angle 2 (degrees)	Range = $0$ to $80$	15
SYNCPH	Synchronism Check Phase (VAB,VBC,VCA or deg lag VAB)	Select: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, VAB, VBC, VCA	VAB
TCLOSD	Breaker Close Time for Angle Compensation (milliseconds)	Range = 1 to 1000, OFF	OFF
BSYNCH	Block Synchronism Check (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	52A

LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	59.00
81D1TD	Frequency1 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D1TC	Frequency1 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	61.00
81D2TD	Frequency2 Trip Delay (seconds)	Range = $0.00$ to $400.00$	0.00
81D2TC	Frequency2 Torque Control Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	1
81RVSUP	Voltage Supervision of Rate-of-Change of Frequency Elements (volts)	Range = 12.5 to 300.0, OFF	96.0
81RISUP	Current Supervision of Rate-of-Change of Frequency Elements (amps)	Range = 0.5 to 10.0, OFF	OFF
81R1TP	Rate-of-Change of Frequency Trip 1 Pickup (Hz/sec)	Range = 0.10 to 15.00, OFF	0.50
81R1TRND	Rate-of-Change of Frequency Trend 1	Select: INC, DEC, ABS	ABS
81R1TD	Rate-of-Change of Frequency Trip 1 Delay (seconds)	Range = $0.10$ to $60.00$	0.25
81R1DO	Rate-of-Change of Frequency Dropout 1 Delay (seconds)	Range = $0.00$ to $60.00$	0.00
81R1TC	Rate-of-Change of Frequency Torque Control 1 Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	N
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = $0.50$ to $16.00$ , OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00

EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	3P1
3PWR1P	Three Phase Power Element Pickup (VA)	Range = 1.0 to 6500.0, OFF	50.0
PWR1T	Power Element Type	Select: +WATTS, - WATTS, +VARS, -VARS	-WATTS
PWR1D	Power Element Time Delay (seconds)	Range = $0.0$ to 240.0	0.0
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to 400.0, OFF	OFF
TR	Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 51P1T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 50P1P OR 50G1P OR 50N1P)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	IN101
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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Group 2			<u>Top</u>
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	72.47
ZOSMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
ZOSANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to $100.00$ ,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	Ν
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	Ν
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 2			Top

Group 3			<u>Top</u>
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	N
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = 5.00 to 90.00	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = 0.10 to 510.00	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = 0.00 to 90.00	84.61
LL	Line Length - unitless	Range = 0.10 to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	N
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
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51BRS	EM Reset Delay	Select: Y, N	N
51BCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	N
51CCT	Constant Time Adder (seconds)	Range = 0.00 to 1.00	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P1RS	EM Reset Delay	Select: Y, N	N
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = 0.50 to 15.00	3.00
51P2RS	EM Reset Delay	Select: Y, N	N
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = 0.00 to 1.00	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	Ν
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 3			Тор

Group 4			
Setting	Description	Range	Value
RID	Relay Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
TID	Terminal Identifier (16 characters)	Range = ASCII string with a maximum length of 16.	NOT USED
CTR	Phase (IA,IB,IC) CT Ratio CTR:1	Range = $1$ to $5000$	120
CTRN	Neutral (IN) CT Ratio CTRN:1	Range = $1$ to $5000$	120
PTR	PT Ratio	Range = 1.00 to 10000.00	180.00
PTRS	Synch. Voltage (VS) PT Ratio	Range = 1.00 to 10000.00	180.00
DELTA_Y	Transformer Connection	Select: WYE, DELTA	DELTA
VSCONN	Synch. Channel Connection	Select: VS, 3V0	VS
SINGLEV	Single Voltage Input	Select: Y, N	Ν
VNOM	Line Voltage, Nominal Line-to-Line (volts)	Range = 20.00 to 250.00, OFF	120.00
Z1MAG	Pos. Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	2.14
Z1ANG	Pos. Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	68.86
Z0MAG	Zero Seq. Line Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	6.38
Z0ANG	Zero Seq. Line Impedance Angle (degrees)	Range = $5.00$ to $90.00$	72.47
Z0SMAG	Zero Seq. Source Impedance Magnitude (ohms)	Range = $0.10$ to $510.00$	0.36
Z0SANG	Zero Seq.Source Impedance Angle (degrees)	Range = $0.00$ to $90.00$	84.61
LL	Line Length - unitless	Range = $0.10$ to 999.00	4.84
EFLOC	Enable Fault Location	Select: Y, N	Ν
50P1P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P1D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P1TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P2P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P2D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P2TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50P3P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	10.00
50P3D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P3TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
		Range = $0.25$ to 100.00,	

50P4P	Maximum Phase Overcurrent Trip Pickup (amps sec.)	OFF	10.00
50P4D	Maximum Phase Overcurrent Trip Delay (seconds)	Range = 0.00 to 400.00, OFF	0.00
50P4TC	Maximum Phase Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
50N1P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N2P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N3P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50N4P	Neutral Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G1P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G2P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G3P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50G4P	Residual Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q1P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q2P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q3P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
50Q4P	Negative Sequence Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 100.00, OFF	OFF
E50INC	Incipient fault overcurrent detection level (amps sec)	Range = 5.00 to 50.00, OFF	15.00
50IALC	Incipient fault overcurrent alarm counter	Range = $1$ to $100$	1
50ITRC	Incipient fault overcurrent trip counter	Range = $1$ to $100$	10
51AP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51AC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51ATD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51ARS	EM Reset Delay	Select: Y, N	Ν
51ACT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51AMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51ATC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51BP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51BC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3

51BTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51BRS	EM Reset Delay	Select: Y, N	Ν
51BCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51BMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51BTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51CP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51CC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51CTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51CRS	EM Reset Delay	Select: Y, N	Ν
51CCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51CMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51CTC	Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P1TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P1RS	EM Reset Delay	Select: Y, N	Ν
51P1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P1TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51P2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51P2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51P2TD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51P2RS	EM Reset Delay	Select: Y, N	Ν
51P2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51P2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51P2TC	Maximum Phase Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51QP	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	6.00
51QC	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51QTD	TOC Time Dial	Range = $0.50$ to $15.00$	3.00
51QRS	EM Reset Delay	Select: Y, N	N
51QCT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51QMR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00

51QTC	Negative Seq. Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51N1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51N2P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	OFF
51G1P	Time Overcurrent Trip Pickup (amps sec.)	Range = 0.25 to 24.00, OFF	0.50
51G1C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G1TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G1RS	EM Reset Delay	Select: Y, N	N
51G1CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G1MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G1TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
51G2P	Time Overcurrent Trip Pickup (amps sec.)	$\boxed{\begin{array}{c} \text{Range} = 0.25 \text{ to } 24.00, \\ \text{OFF} \end{array}}$	0.50
51G2C	TOC Curve Selection	Select: U1, U2, U3, U4, U5, C1, C2, C3, C4, C5	U3
51G2TD	TOC Time Dial	Range = $0.50$ to $15.00$	1.50
51G2RS	EM Reset Delay	Select: Y, N	N
51G2CT	Constant Time Adder (seconds)	Range = $0.00$ to $1.00$	0.00
51G2MR	Minimum Response Time (seconds)	Range = $0.00$ to $1.00$	0.00
51G2TC	Ground Time Overcurrent Torque Control (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	1
EDIR	Enable Directional Control	Select: Y, AUTO, N	N
EHBL2	Enable Second Harmonic Blocking	Select: Y, N	N
EHBL5	Enable Fifth Harmonic Blocking	Select: Y, N	N
ELOAD	Enable Load Encroachment	Select: Y, N	N
E49IEC	Enable IEC Thermal Element	Range = $1$ to $3$ , N	N
27PP1P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S1P	Channel VS Undervoltage Pickup 1 (volts)	Range = 2.00 to 300.00, OFF	OFF
27PP2P	Phase-Phase Undervoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
27S2P	Channel VS Undervoltage Pickup 2 (volts)	Range = 2.00 to 300.00, OFF	OFF
E27I1	Inverse Time Undervoltage Element Enable	Select: Y, N	N
E27I2	Inverse Time Undervoltage Element Enable	Select: Y, N	N
59Q1P	Negative-Seq Overvoltage Trip 1 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
59PP1P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF

59S1P	Channel VS Overvoltage Trip 1 Pickup (volts)	Range = $2.00$ to $300.00$ ,	OFF
59Q2P	Negative-Seq Overvoltage Trip 2 Pickup (volts)	Range = $2.00$ to $300.00$ , OFF	OFF
59PP2P	Phase-Phase Overvoltage Trip Level (volts)	Range = 2.00 to 300.00, OFF	OFF
59S2P	Channel VS Overvoltage Trip 2 Pickup (volts)	Range = 2.00 to 300.00, OFF	OFF
E59I1	Inverse Time Overvoltage Element Enable	Select: Y, N	Ν
E59I2	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I3	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E59I4	Inverse Time Overvoltage Element Enable	Select: Y, N	N
E25	Synchronism Check Enable	Select: Y, N	N
LOPBLK	Loss of Potential Block Condition Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
55LGTP	Power Factor Lag Trip Pickup	Range = 0.05 to 0.99, OFF	OFF
55LDTP	Power Factor Lead Trip Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LGAP	Power Factor Lag Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
55LDAP	Power Factor Lead Alarm Pickup	Range = $0.05$ to $0.99$ , OFF	OFF
E78VS	Enable Vector Shift	Select: Y, N	N
81D1TP	Frequency1 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D2TP	Frequency2 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D3TP	Frequency3 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D4TP	Frequency4 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D5TP	Frequency5 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
81D6TP	Frequency6 Trip Pickup (Hz)	Range = 15.00 to 70.00, OFF	OFF
E81R	Enable Rate-of-Change of Frequency Elements	Select: N, 1-4	Ν
E81RF	Enable Fast Rate-of-Change of Frequency Elements	Select: Y, N	Ν
EDEM	Demand Metering	Select: THM, ROL	THM
DMTC	Time Constant (mins)	Select: 5, 10, 15, 30, 60	5
PHDEMP	Phase Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	5.00
GNDEMP	Residual Ground Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
3I2DEMP	Negative-Sequence Pickup (amps sec.)	Range = 0.50 to 16.00, OFF	1.00
EPWR	Enable Three Phase Power Elements	Select: N, 3P1, 3P2	N
TDURD	Minimum Trip Time (seconds)	Range = $0.0$ to $400.0$	0.5
CFD	Close Failure Time Delay (seconds)	Range = $0.0$ to $400.0$ , OFF	1.0
		Valid range = The legal	ORED50T OR ORED51T OR

TR	Trip (SELogic)	operators: AND OR NOT R_TRIG F_TRIG	ORED81T OR REMTRIP OR OC OR SV04T
REMTRIP	Remote Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
ULTRIP	Unlatch Trip (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT (51P1P OR 51G1P OR 51N1P OR 52A)
52A	Breaker Status N/O Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
52B	Breaker Status N/C Contact (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NOT 52A
CL	Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV03T AND LT02 OR CC
ULCL	Unlatch Close (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Group 4			Тор

Logic 1 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = $1$ to $32$ , N	10
ESV	SELogic Variables/Timers	Range = $1$ to $32$ , N	10
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST05	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST06	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST07	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA

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SET08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST08	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST09	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST10	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV01PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 50N1T OR 51P1T OR 51G1T OR 51N1T OR SV08T #DIRECT TRIP
SV02PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV03PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.50
SV03DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	25A1 OR (NOT SV02 AND 27S1) #SYNC CHECK OK
SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM #PROTECTION RELAY FAIL
SV05PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV05DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV06PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV06DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
		Valid range = The legal	

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SV06	SV_Input (SELogic)	R_TRIG F_TRIG	0
SV07PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV07DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV07	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV08PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	1.00
SV08DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV08	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0 #REVERSE POWER TRIP
SV09PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV09DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV09	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
SV10PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV10DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV10	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Ν
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Y
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	SV04T #PROTECTIVE RELAY ALARM TO PLC
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	N
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT	0

İ		<b>R_TRIG F_TRIG</b>	
OUT401FS	OUT401 Fail-Safe	Select: Y, N	N
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	50P1T OR 50G1T OR 51P1T OR 51G1T OR SV08T #DIRECT TRIP TO PLC
OUT402FS	OUT402 Fail-Safe	Select: Y, N	Ν
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT404FS	OUT404 Fail-Safe	Select: Y, N	N
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 1			Тор

Logic 2 Top			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = 0.00 to 3000.00	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0

OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν	
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
Logic 2 <u>Top</u>				

Logic 3			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	3.00
SV02DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03
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SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	Ν
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	N
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	N
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν	
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0	
Logic 3				

Logic 4 <u>Top</u>			
Setting	Description	Range	Value
ELAT	SELogic Latches	Range = 1 to 32, N	4
ESV	SELogic Variables/Timers	Range = 1 to 32, N	5
ESC	SELogic Counters	Range = 1 to 32, N	N
EMV	SELogic Math Variables	Range = 1 to 32, N	N
SET01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
RST01	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SET02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND NOT LT02
RST02	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG SV02T AND LT02
SET03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB03_PUL AND LT02 AND NOT 52A
RST03	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV03T) AND LT03
SET04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB04_PUL AND 52A
RST04	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB03_PUL OR PB04_PUL OR SV04T) AND LT04
SV01PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV01DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV01	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	NA
SV02PU	SV_Timer Pickup (seconds)	Range = 0.00 to 3000.00	3.00
SV02DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV02	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	PB02
SV03PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV03DO	SV_Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV03	SV_Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT03

SV04PU	SV_ Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.00
SV04DO	SV_ Timer Dropout (seconds)	Range = 0.00 to 3000.00	0.00
SV04	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	LT04
SV05PU	SV_Timer Pickup (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05DO	SV_ Timer Dropout (seconds)	Range = $0.00$ to $3000.00$	0.25
SV05	SV_ Input (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	(PB02 OR LT03 OR LT04) AND NOT SV05T
OUT101FS	OUT101 Fail-Safe	Select: Y, N	Y
OUT101	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	HALARM OR SALARM OR AFALARM
OUT102FS	OUT102 Fail-Safe	Select: Y, N	Ν
OUT102	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	CLOSE
OUT103FS	OUT103 Fail-Safe	Select: Y, N	N
OUT103	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	TRIP
OUT301FS	OUT301 Fail-Safe	Select: Y, N	Ν
OUT301	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT302FS	OUT302 Fail-Safe	Select: Y, N	Ν
OUT302	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT303FS	OUT303 Fail-Safe	Select: Y, N	Ν
OUT303	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT304FS	OUT304 Fail-Safe	Select: Y, N	Ν
OUT304	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT401FS	OUT401 Fail-Safe	Select: Y, N	Ν
OUT401	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT402FS	OUT402 Fail-Safe	Select: Y, N	N
OUT402	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
OUT403FS	OUT403 Fail-Safe	Select: Y, N	Ν
OUT403	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
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OUT404FS	OUT404 Fail-Safe	Select: Y, N	Ν
OUT404	(SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Logic 4			Тор

Front Panel <u>Top</u>			
Setting	Description	Range	Value
EDP	Display Points Enable	Range = $1$ to $32$ , N	5
ELB	Local Bits Enable	Range = $1$ to $32$ , N	N
FP_TO	Front-Panel Timeout (mins)	Range = 1 to 30, OFF	15
FP_CONT	Front-Panel Contrast	Range = 1 to $16$	10
FP_AUTO	Front-Panel Automessages	Select: OVERRIDE, ROTATING	OVERRIDE
RSTLED	Reset Trip-Latched LEDs On Close	Select: Y, N	Ν
LEDENAC	ENABLED LED Asserted Color	Select: R, G, A	G
LEDTRPC	TRIP LED Asserted Color	Select: R, G, A	R
MAXACC	Maximum Access Level	Select: 1, 2	2
T01LEDL	Trip Latch T_LED	Select: Y, N	Y
T01LEDC	Target T01_LED Asserted Color (R,G,A)	Select: R, G, A	R
T01_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	ORED50T #INSTANT OC
T02LEDL	Trip Latch T_LED	Select: Y, N	Y
T02LEDC	Target T02_LED Asserted Color (R,G,A)	Select: R, G, A	R
T02_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51AT OR 51BT OR 51CT OR 51P1T OR 51P2T #PHASE OC
T03LEDL	Trip Latch T_LED	Select: Y, N	Y
T03LEDC	Target T03_LED Asserted Color (R,G,A)	Select: R, G, A	R
T03_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51N1T OR 51G1T OR 51N2T OR 51G2T #GND/NEU OC
T04LEDL	Trip Latch T_LED	Select: Y, N	Y
T04LEDC	Target T04_LED Asserted Color (R,G,A)	Select: R, G, A	R
T04_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	51QT #NEG SEQ OC
T05LEDL	Trip Latch T_LED	Select: Y, N	Y
T05LEDC	Target T05_LED Asserted Color (R,G,A)	Select: R, G, A	R
T05_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	81D1T OR 81D2T OR 81D3T OR 81D4T #OVER/UNDER FREQUENCY
T06LEDL	Trip Latch T_LED	Select: Y, N	N
T06LEDC	Target T06_LED Asserted Color (R,G,A)	Select: R, G, A	R
T06_LED	Equation (SELogic)	Valid range = The legal operators: AND OR NOT	(BFT OR T06_LED) AND NOT TRGTR

	R_TRIG F_TRIG	#BREAKER FAIL
PB1A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB1B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB2B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB3B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4A_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
PB4B_LED Asserted/Deasserted Colors (R,G,A,O)	Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, RO	AO
Equation (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	0
Display Point (60 characters)		TID, " {16}"
Display Point (60 characters)		0
Display Point (60 characters)		IN101, BREAKER, CLOSED, OPEN
	PB1A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB1B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB2A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB2B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB3A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB3B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB3B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB4A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB4A_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   PB4B_LED Asserted/Deasserted Colors (R,G,A,O)   Equation (SELogic)   Display Point (60 characters)   Display Point (60 characters)   Display Point (60 characters)   Display Point (60 characters)	R_TRIG F_TRIGPB1A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROEquation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGPB1B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROEquation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGPB2A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB2A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROEquation (SELogic)Valid range = The legal operators: AND OR NOT R_TRIG F_TRIGPB2B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB3B_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB4A_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB44_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB44_LED Asserted/Deasserted Colors (R,G,A,O)Select: AG, AO, AR, GA, GO, GR, OA, OG, OR, RA, RG, ROPB44_LED Asserted/Deasserted Colors (R,G,A,O)S

DP04	Display Point (60 characters)		0
DP05	Display Point (60 characters)		)
Front Panel <u>Top</u>			

Report <u>Top</u>			
Setting	Description	Range	Value
ER	Event Report Trigger (SELogic)	Valid range = The legal operators: AND OR NOT R_TRIG F_TRIG	R_TRIG 51P1P OR R_TRIG 51G1P OR R_TRIG 51N1P OR R_TRIG 50P1P OR R_TRIG 50G1P OR R_TRIG 50N1P
LER	Length of Event Report (cycles)	Select: 15, 64, 180	15
PRE	Prefault Length (cycles)	Range = 1 to $10$	5
ESERDEL	Auto-Removal Enable	Select: Y, N	N
SER1	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	IN101, 51P1T, 51G1T, 51N1T, 50P1P, 50G1T, 50N1T
SER2	(24 Relay Word bits)	Valid range = 0, NA or alist of relay elements.	52A
SER3	(24 Relay Word bits)	Valid range = 0, NA or a list of relay elements.	SV05T, SV02T
SER4	(24 Relay Word bits)	Valid range = 0, NA or alist of relay elements.	SALARM, HALARM
EALIAS	Enable ALIAS Settings	Range = $1$ to 20, N	N
FMR1NAM	Fast Message Read Name1 (9 characters)	Range = $ASCII$ string with a maximum length of 9.	FMR1
FMR1	(24 analog quantities)	Valid range $= 0$ , NA or a list of relay elements.	NA
FMR2NAM	Fast Message Read Name2 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR2
FMR2	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR3NAM	Fast Message Read Name3 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR3
FMR3	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
FMR4NAM	Fast Message Read Name4 (9 characters)	Range = ASCII string with a maximum length of 9.	FMR4
FMR4	(24 analog quantities)	Valid range = 0, NA or a list of relay elements.	NA
RA01TYPE	Remote Analog 01 type	Select: I, F, L	Ι
RA02TYPE	Remote Analog 02 type	Select: I, F, L	I
RA03TYPE	Remote Analog 03 type	Select: I, F, L	Ι
RA04TYPE	Remote Analog 04 type	Select: I, F, L	Ι
RA05TYPE	Remote Analog 05 type	Select: I, F, L	Ι
RA06TYPE	Remote Analog 06 type	Select: I, F, L	Ι

RA07TYPE	Remote Analog 07 type	Select: I, F, L	Ι
RA08TYPE	Remote Analog 08 type	Select: I, F, L	Ι
RA09TYPE	Remote Analog 09 type	Select: I, F, L	Ι
RA10TYPE	Remote Analog 10 type	Select: I, F, L	Ι
RA11TYPE	Remote Analog 11 type	Select: I, F, L	Ι
RA12TYPE	Remote Analog 12 type	Select: I, F, L	Ι
RA13TYPE	Remote Analog 13 type	Select: I, F, L	Ι
RA14TYPE	Remote Analog 14 type	Select: I, F, L	Ι
RA15TYPE	Remote Analog 15 type	Select: I, F, L	Ι
RA16TYPE	Remote Analog 16 type	Select: I, F, L	Ι
RA17TYPE	Remote Analog 17 type	Select: I, F, L	Ι
RA18TYPE	Remote Analog 18 type	Select: I, F, L	Ι
RA19TYPE	Remote Analog 19 type	Select: I, F, L	Ι
RA20TYPE	Remote Analog 20 type	Select: I, F, L	Ι
RA21TYPE	Remote Analog 21 type	Select: I, F, L	Ι
RA22TYPE	Remote Analog 22 type	Select: I, F, L	Ι
RA23TYPE	Remote Analog 23 type	Select: I, F, L	Ι
RA24TYPE	Remote Analog 24 type	Select: I, F, L	Ι
RA25TYPE	Remote Analog 25 type	Select: I, F, L	Ι
RA26TYPE	Remote Analog 26 type	Select: I, F, L	Ι
RA27TYPE	Remote Analog 27 type	Select: I, F, L	Ι
RA28TYPE	Remote Analog 28 type	Select: I, F, L	Ι
RA29TYPE	Remote Analog 29 type	Select: I, F, L	Ι
RA30TYPE	Remote Analog 30 type	Select: I, F, L	Ι
RA31TYPE	Remote Analog 31 type	Select: I, F, L	Ι
RA32TYPE	Remote Analog 32 type	Select: I, F, L	Ι
LDLIST	Load Profile List (17 Analog Quantities)	Range = Maximum of 17 Analog Elements	NA
LDAR	Load Profile Acquisition Rate (mins)	Select: 5, 10, 15, 30, 60	15
Report			Тор

Port F			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	N
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to 30	5
RTSCTS	Hardware Handshaking	Select: Y, N	N
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
Port F <u>Top</u>			

Port 1 Top			
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
EETHFWU	Enable Ethernet Firmware Upgrade	Select: Y, N	N
IPADDR	Device IP Address [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.152
SUBNETM	Subnet Mask [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	255.255.255.0
DEFRTR	Default Router Gateway [zzz.yyy.xxx.www]	Range = ASCII string with a maximum length of 15.	192.168.0.1
ЕТСРКА	Enable TCP Keep-Alive	Select: Y, N	Y
KAIDLE	TCP Keep-Alive Idle Range (seconds)	Range = $1$ to $20$	10
KAINTV	TCP Keep-Alive Interval Range (seconds)	Range = $1$ to $20$	1
KACNT	TCP Keep-Alive Count Range	Range = $1$ to $20$	6
ETELNET	Enable Telnet	Select: Y, N	Y
MAXACC	Maximum Access Level	Select: 1, 2, C	2
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
TPORT	Telnet Port	Range = 1025 to 65534, 23	23
TCBAN	Telnet Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	TERMINAL SERVER
TIDLE	Telnet Port Timeout (mins)	Range = $1$ to $30$	15
FASTOP	Fast Operate	Select: Y, N	Ν
EFTPSERV	Enable FTP	Select: Y, N	Y
FTPACC	FTP Maximum Access Level	Select: 1, 2, C	2
FTPUSER	FTP User Name (20 characters)	Range = ASCII string with a maximum length of 20.	FTPUSER
FTPCBAN	FTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	FTP SERVER
FTPIDLE	FTP Idle Time (mins)	Range = 5 to $255$	5
E61850	Enable IEC 61850 Protocol	Select: Y, N	Y
EGSE	Enable IEC 61850 GOOSE	Select: Y, N	Y
EMMSFS	Enable MMS File Services	Select: Y, N	Y
E850MBC	Enable 61850 Mode/Behavior Control	Select: Y, N	Ν
EOFFMTX	Enable GOOSE Tx in Off Mode	Select: Y, N	Ν
EMOD	Enable Modbus Sessions	Select: 0-2	0
EHTTP	Enable HTTP Server	Select: Y, N	Y
HTTPACC	HTTP Maximum Accesss Level	Select: 1, 2	2
HTTPPORT	HTTP Server TCP/IP Port Number	Range = $1$ to $65534$	80
HTTPBAN	HTTP Connect Banner (254 ASCII printable characters)	Range = ASCII string with a maximum length of 254.	THIS SYSTEM IS FOR THE USE OF AUTHORIZED PERSONNEL

			ONLY.
HTTPIDLE	HTTP Web Server Timeout (minutes)	Range $= 1$ to $60$	10
ESNTP	Enable SNTP Client	Select: OFF, UNICAST, MANYCAST, BROADCAST	OFF
EPTP	Enable PTP	Select: Y, N	Ν
Port 1			
			<u>Тор</u>

Port 2			Top
Setting	Description	Range	Value
Port 2	·		Тор

Port 3			Top
Setting	Description	Range	Value
EPORT	Enable Port	Select: Y, N	Y
PROTO	Protocol	Select: SEL, MOD, EVMSG, PMU, MBA, MBB, MB8A, MB8B, MBTA, MBTB	SEL
MAXACC	Maximum Access Level	Select: 1, 2, C	2
SPEED	Data Speed (bps)	Select: 300, 1200, 2400, 4800, 9600, 19200, 38400	9600
BITS	Data Bits (bits)	Select: 7, 8	8
PARITY	Parity	Select: O, E, N	Ν
STOP	Stop Bits (bits)	Select: 1, 2	1
T_OUT	Port Timeout (mins)	Range = 0 to $30$	5
RTSCTS	Hardware Handshaking	Select: Y, N	Ν
LANG	Language	Select: ENGLISH, SPANISH	ENGLISH
AUTO	Send Auto Messages to Port	Select: Y, N	N
FASTOP	Fast Operate	Select: Y, N	Ν
Port 3			<u>Тор</u>

Modbus User Map Top			
Setting	Description	Range	Value
MOD_001	USER REG#001 (8 characters)	Range = Maximum of 1 Digital Elements	IA_MAG
MOD_002	USER REG#002 (8 characters)	Range = Maximum of 1 Digital Elements	IB_MAG
MOD_003	USER REG#003 (8 characters)	Range = Maximum of 1 Digital Elements	IC_MAG
MOD_004	USER REG#004 (8 characters)	Range = Maximum of 1 Digital Elements	IN_MAG
MOD_005	USER REG#005 (8 characters)	Range = Maximum of 1 Digital Elements	IG_MAG
MOD_006	USER REG#006 (8 characters)	Range = Maximum of 1 Digital Elements	IAV
MOD_007	USER REG#007 (8 characters)	Range = Maximum of 1 Digital Elements	3I2
MOD_008	USER REG#008 (8 characters)	Range = Maximum of 1 Digital Elements	UBI
MOD_009	USER REG#009 (8 characters)	Range = Maximum of 1 Digital Elements	VAVE
MOD_010	USER REG#010 (8 characters)	Range = Maximum of 1 Digital Elements	3V2
MOD_011	USER REG#011 (8 characters)	Range = Maximum of 1 Digital Elements	UBV
MOD_012	USER REG#012 (8 characters)	Range = Maximum of 1 Digital Elements	Р
MOD_013	USER REG#013 (8 characters)	Range = Maximum of 1 Digital Elements	Q
MOD_014	USER REG#014 (8 characters)	Range = Maximum of 1 Digital Elements	S
MOD_015	USER REG#015 (8 characters)	Range = Maximum of 1 Digital Elements	PF
MOD_016	USER REG#016 (8 characters)	Range = Maximum of 1 Digital Elements	FREQ
MOD_017	USER REG#017 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIH
MOD_018	USER REG#018 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3PIL
MOD_019	USER REG#019 (8 characters)	Range = Maximum of 1 Digital Elements	МѠНЗРОН
MOD_020	USER REG#020 (8 characters)	Range = Maximum of 1 Digital Elements	MWH3POL
MOD_021	USER REG#021 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIH
MOD_022	USER REG#022 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3PIL
		Range = Maximum of 1	

MOD_023	USER REG#023 (8 characters)	Digital Elements	MVRH3POH
MOD_024	USER REG#024 (8 characters)	Range = Maximum of 1 Digital Elements	MVRH3POL
MOD_025	USER REG#025 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PH
MOD_026	USER REG#026 (8 characters)	Range = Maximum of 1 Digital Elements	MVAH3PL
MOD_027	USER REG#027 (8 characters)	Range = Maximum of 1 Digital Elements	RTDWDGMX
MOD_028	USER REG#028 (8 characters)	Range = Maximum of 1 Digital Elements	RTDBRGMX
MOD_029	USER REG#029 (8 characters)	Range = Maximum of 1 Digital Elements	RTDAMB
MOD_030	USER REG#030 (8 characters)	Range = Maximum of 1 Digital Elements	RTDOTHMX
MOD_031	USER REG#031 (8 characters)	Range = Maximum of 1 Digital Elements	IARMS
MOD_032	USER REG#032 (8 characters)	Range = Maximum of 1 Digital Elements	IBRMS
MOD_033	USER REG#033 (8 characters)	Range = Maximum of 1 Digital Elements	ICRMS
MOD_034	USER REG#034 (8 characters)	Range = Maximum of 1 Digital Elements	INRMS
MOD_035	USER REG#035 (8 characters)	Range = Maximum of 1 Digital Elements	IAMX
MOD_036	USER REG#036 (8 characters)	Range = Maximum of 1 Digital Elements	IAMN
MOD_037	USER REG#037 (8 characters)	Range = Maximum of 1 Digital Elements	IBMX
MOD_038	USER REG#038 (8 characters)	Range = Maximum of 1 Digital Elements	IBMN
MOD_039	USER REG#039 (8 characters)	Range = Maximum of 1 Digital Elements	ICMX
MOD_040	USER REG#040 (8 characters)	Range = Maximum of 1 Digital Elements	ICMN
MOD_041	USER REG#041 (8 characters)	Range = Maximum of 1 Digital Elements	INMX
MOD_042	USER REG#042 (8 characters)	Range = Maximum of 1 Digital Elements	INMN
MOD_043	USER REG#043 (8 characters)	Range = Maximum of 1 Digital Elements	IGMX
MOD_044	USER REG#044 (8 characters)	Range = Maximum of 1 Digital Elements	IGMN
MOD_045	USER REG#045 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMX
MOD_046	USER REG#046 (8 characters)	Range = Maximum of 1 Digital Elements	KW3PMN
MOD_047	USER REG#047 (8 characters)	Range = Maximum of 1 Digital Elements	KVAR3PMX
MOD_048	USER REG#048 (8 characters)	Range = Maximum of 1	KVAR3PMN

		Digital Elements	
MOD_049	USER REG#049 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMX
MOD_050	USER REG#050 (8 characters)	Range = Maximum of 1 Digital Elements	KVA3PMN
MOD_051	USER REG#051 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMX
MOD_052	USER REG#052 (8 characters)	Range = Maximum of 1 Digital Elements	FREQMN
MOD_053	USER REG#053 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_LO
MOD_054	USER REG#054 (8 characters)	Range = Maximum of 1 Digital Elements	TRIP_HI
MOD_055	USER REG#055 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_LO
MOD_056	USER REG#056 (8 characters)	Range = Maximum of 1 Digital Elements	WARN_HI
MOD_057	USER REG#057 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_058	USER REG#058 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_059	USER REG#059 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_060	USER REG#060 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_061	USER REG#061 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_062	USER REG#062 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_063	USER REG#063 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_064	USER REG#064 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_065	USER REG#065 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_066	USER REG#066 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_067	USER REG#067 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_068	USER REG#068 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_069	USER REG#069 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_070	USER REG#070 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_071	USER REG#071 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_072	USER REG#072 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_073	USER REG#073 (8 characters)	Range = Maximum of 1	NA
		Digital Elements	
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MOD_074	USER REG#074 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_075	USER REG#075 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_076	USER REG#076 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_077	USER REG#077 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_078	USER REG#078 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_079	USER REG#079 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_080	USER REG#080 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_081	USER REG#081 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_082	USER REG#082 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_083	USER REG#083 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_084	USER REG#084 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_085	USER REG#085 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_086	USER REG#086 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_087	USER REG#087 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_088	USER REG#088 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_089	USER REG#089 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_090	USER REG#090 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_091	USER REG#091 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_092	USER REG#092 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_093	USER REG#093 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_094	USER REG#094 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_095	USER REG#095 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_096	USER REG#096 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_097	USER REG#097 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_098	USER REG#098 (8 characters)	Range = Maximum of 1	NA

		Digital Elements	
MOD_099	USER REG#099 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_100	USER REG#100 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_101	USER REG#101 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_102	USER REG#102 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_103	USER REG#103 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_104	USER REG#104 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_105	USER REG#105 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_106	USER REG#106 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_107	USER REG#107 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_108	USER REG#108 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_109	USER REG#109 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_110	USER REG#110 (8 characters)	Range = Maximum of 1 Digital Elements	NA
 MOD_111	USER REG#111 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_112	USER REG#112 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_113	USER REG#113 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_114	USER REG#114 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_115	USER REG#115 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_116	USER REG#116 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_117	USER REG#117 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_118	USER REG#118 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_119	USER REG#119 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_120	USER REG#120 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_121	USER REG#121 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_122	USER REG#122 (8 characters)	Range = Maximum of 1 Digital Elements	NA
MOD_123	USER REG#123 (8 characters)	Range = Maximum of 1	NA

		Digital Elements			
MOD_124	USER REG#124 (8 characters)	Range = Maximum of 1 Digital Elements	NA		
MOD_125	USER REG#125 (8 characters)	Range = Maximum of 1 Digital Elements	NA		
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