Appendix 5: 7SR210 Relay (Software 2435H80004R4b-4)

Settings, Configuration & Instruments Guide

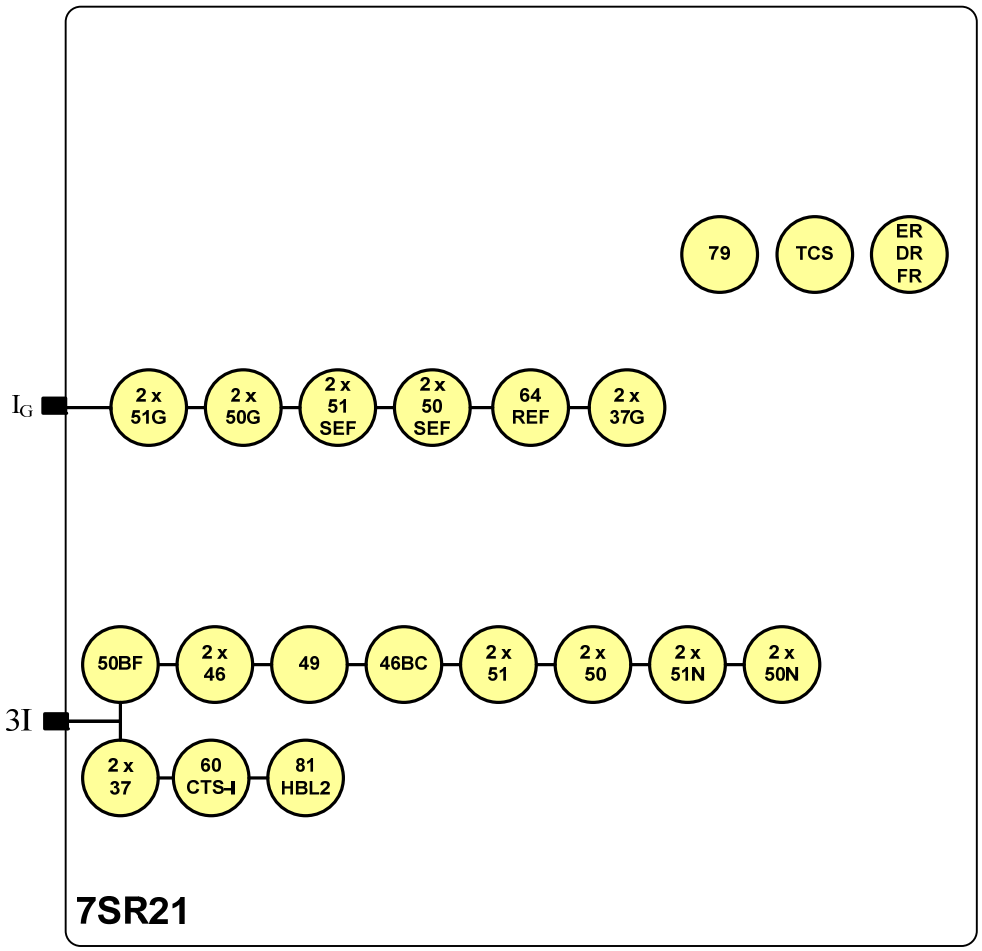
Document Release History

This document is issue **2010/05**.

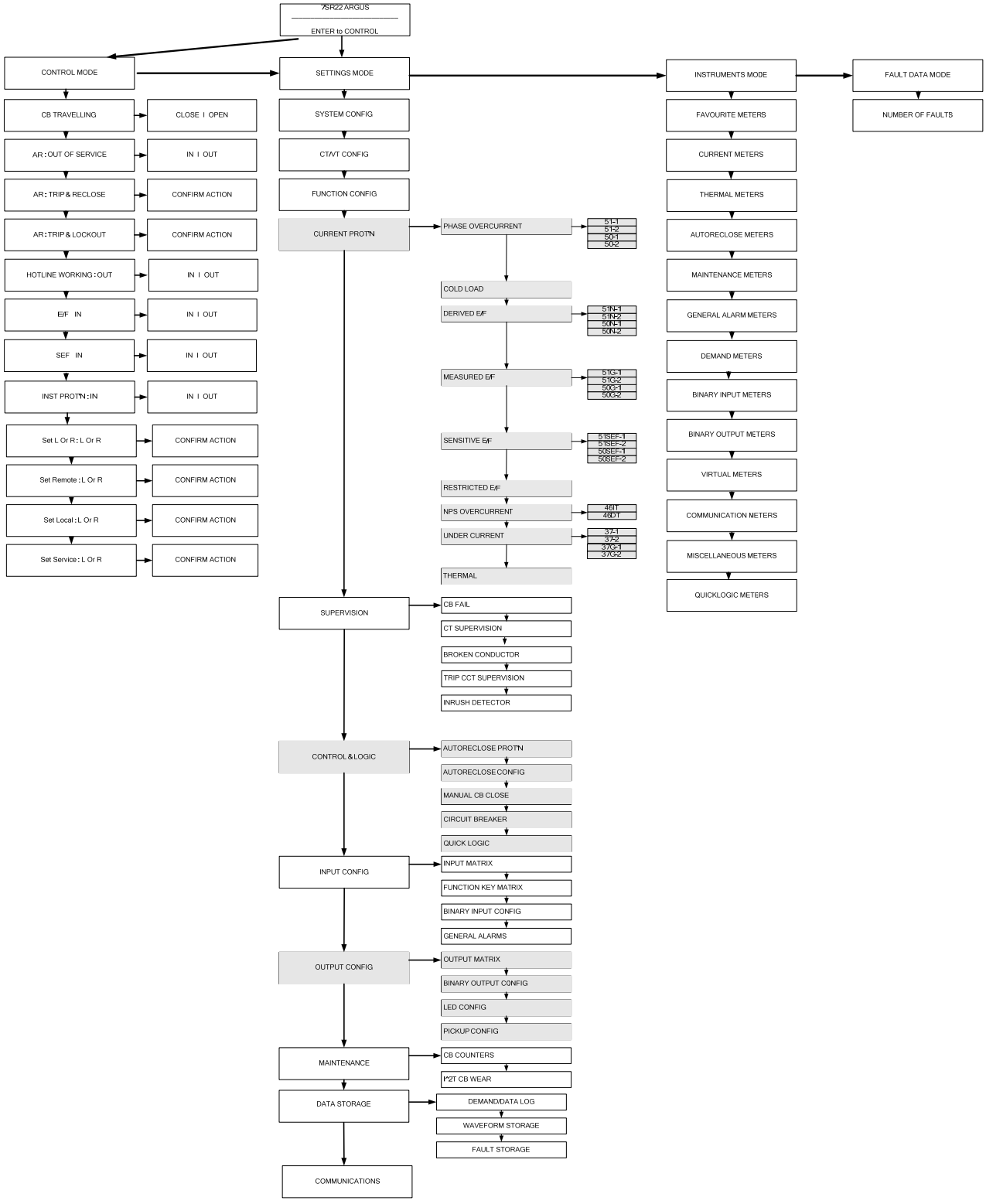
2010/05	Communication configuration amendments.
2010/02	Document reformat due to rebrand
2009/09	First issue

Contents

1.Function Diagram



2.Menu Structure



3.Relay Settings

3.1. System Config

Description	Range	Default	Setting
Active Group *Selects which settings group is currently activated*			
System Frequency *Selects the Power System Frequency from 50 or 60 Hz*	50, 60	50Hz	
View/Edit Group *Selects which settings group is currently being displayed*			
Setting Dependencies *When enabled only active settings are displayed and all others hidden*	Disabled, Enabled	Enabled	
Favourite Meters Timer *Selects the time delay after which, if no key presses have been detected, the relay will begin to poll through any screens which have been selected as favourite instruments*	Off, 1, 2, 5, 10, 15, 30, 60	60min	
Backlight timer *Controls when the LCD backlight turns off*	Off, 1, 2, 5, 10, 15, 30, 60	5min	
Date *Sets the date, this setting can only be changed on the fascia or via Relay->Control->Set Time and Date*			
Time *Sets the time, this setting can only be changed on the fascia or via Relay->Control->Set Time and Date*			
Curr Set Display *Select whether the Pickup values are shown in terms of x Nominal, Primary or Secondary values on the Relay Fascia*	xNom, Primary, Secondary	xNom	
E/F Curr Set Display *As Above*	xNom, Primary, Secondary	xNom	
Select Grp Mode *Mode of operation of the group change from status input. Edge triggered ignores the status input once it has changed to the relevant group, where as with Level triggered the relay will only stay in the group it has changed to whilst the status input is being driven, after which it returns to the previous group.*	Edge triggered, Level triggered	Edge triggered	
Clock Sync. From BI *Real time clock may be synchronised using a binary input (See Clock Sync. in Binary Input Menu)*	Disabled, Seconds, Minutes	Minutes	
Operating Mode *Selects the current operating mode of the relay. This can also be changed by a binary input mode selection.*	Out Of Service, Local, Remote, Local Or Remote	Local Or Remote	
Setting Password *Allows a 4 character alpha code to be entered as the password. Note that the display shows a password dependant encrypted code on the second line of the display*	(Password)	NONE	
Control Password *As Above*	(Password)	NONE	
Trip Alert *When Enabled the occurrence of a Trip will cause the relay to display the Trip Alert Screen, the only way to leave this screen is by acknowledging the trip through the TEST/RESET button on the relay fascia*	Disabled, Enabled	Enabled	

Description	Range	Default	Setting
General Alarm Alert	Disabled, Enabled	Enabled	
Relay Identifier *An alphanumeric string shown on the LCD normally used to identifier the circuit the relay is attached to or the relays purpose*	(16 Character String)	7SR210	
Circuit Identifier	(16 Character String)		

3.2. CT/VT Config

Description	Range	Default	Setting
Phase Current Input *Selects whether 1 or 5 Amp terminals are being used for phase inputs*	1, 5	1A	
Phase CT Ratio *Phase CT ratio to scale primary current instruments*	1:0.2, 1:0.21 ... 5000:6.9, 5000:7	2000:1	
Earth Current Input *Selects whether 1 or 5 Amp terminals are being used for Measured Earth inputs*	1, 5	1A	
Earth CT Ratio *Measured Earth CT ratio to scale primary current instruments*	1:0.2, 1:0.21 ... 5000:6.9, 5000:7	2000:1	

3.3. Function Config

Description	Range	Default	Setting
Gn Phase Overcurrent *When set to Disabled, no Phase Overcurrent elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Cold Load *When set to Disabled, no Cold Load elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Derived E/F *When set to Disabled, no Derived E/F elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Measured E/F *When set to Disabled, no Measured E/F elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Sensitive E/F *When set to Disabled, no Sensitive E/F elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	

Description	Range	Default	Setting
Gn Restricted E/F *When set to Disabled, no Restricted E/F elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn NPS Overcurrent *When set to Disabled, no NPS Overcurrent elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Under Current *When set to Disabled, no Under Current elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Thermal *When set to Disabled, no Thermal elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn CT Supervision *When set to Disabled, no CT Supervision elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn CB Fail *When set to Disabled, no CB Fail elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Broken Conductor *When set to Disabled, no Broken Conductor elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Trip Cct Supervision *When set to Disabled, no Trip Cct Supervision elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn Inrush Detector *When set to Disabled, no Inrush Detector elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn CB Counters *When set to Disabled, no Gn CB Counter elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	
Gn I^2t CB Wear *When set to Disabled, no Gn I^2t CB Wear elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*	Enabled, Disabled	Disabled	

Description	Range	Default	Setting
Gn Demand *When set to Disabled, no Demand elements will be functional and all associated settings will be hidden. (The Setting Dependencies setting being set to Disabled will make all settings visible but will not allow them to operate).*			

3.4. Current Prot'n

3.4.1. Phase Overcurrent

Description	Range	Default	Setting
Gn 51/50 Measurement *Selects whether the RMS value used by the 51 & 50 elements is True RMS or only calculated at fundamental frequency*	RMS, Fundamental	RMS	

3.4.1.1. 51-1

Description	Range	Default	Setting
Gn 51-1 Element *Selects whether the 51-1 IDMTL Overcurrent element is enabled*	Disabled, Enabled	Disabled	
Gn 51-1 Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	1xIn	
Gn 51-1 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51-1 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51-1 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51-1 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51-1 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51-1 Reset *Selects between an ANSI decaying reset characteristic or a definite time reset*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51-1 Inrush Action *Selects if the 51-1 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.1.2. 51-2

Description	Range	Default	Setting
Gn 51-2 Element *Selects whether the 51-2 IDMTL Overcurrent element is enabled*	Disabled, Enabled	Disabled	
Gn 51-2 Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	1xIn	
Gn 51-2 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51-2 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51-2 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51-2 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	

Description	Range	Default	Setting
Gn 51-2 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51-2 Reset *Selects between an ANSI decaying reset characteristic or a definite time reset*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51-2 Inrush Action *Selects if the 51-2 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.1.3. 50-1

Description	Range	Default	Setting
Gn 50-1 Element *Selects whether the INST/ DTL Overcurrent element is enabled*	Disabled, Enabled	Disabled	
Gn 50-1 Setting *Pickup level*	0.05, 0.06 ... 49.5, 50	1xIn	
Gn 50-1 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	
Gn 50-1 Inrush Action *Selects if the 50-1 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.1.4. 50-2

Description	Range	Default	Setting
Gn 50-2 Element *Selects whether the INST/ DTL Overcurrent element is enabled*	Disabled, Enabled	Disabled	
Gn 50-2 Setting *Pickup level*	0.05, 0.06 ... 49.5, 50	1xIn	
Gn 50-2 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	
Gn 50-2 Inrush Action *Selects if the 50-2 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.2. Cold Load

Description	Range	Default	Setting
Cold Load *Selects whether the Cold Load element is enabled*	Disabled, Enabled	Disabled	
Pick-up Time *Cold Load operate time delay*	1, 1.1 ... 14100, 14400	600s	
Drop-off Time *Cold Load reset time delay*	1, 1.1 ... 14100, 14400	600s	
Reduced Current *Selects whether reduced current functionality is to be used*	Disabled, Enabled	Disabled	
Reduced Current Level *Selects current level below which Reduced Current Time is used for Cold Load reset delay*	0.05, 0.1 ... 2.45, 2.5	0.25xIn	
Reduced Current Time *Cold Load reset time delay used when reduced current active*	1, 1.1 ... 14100, 14400	600s	

Description	Range	Default	Setting
Gn 51c-1 Setting *51-1 element parameter used when Cold Load operates*	0.05, 0.06 ... 2.49, 2.5	1xIn	
Gn 51c-1 Char *As Above*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51c-1 Time Mult (IEC/ANSI) *As Above*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51c-1 Delay (DTL) *As Above*	0, 0.01 ... 19.99, 20	5s	
Gn 51c-1 Min Operate Time *As Above*	0, 0.01 ... 19.99, 20	0s	
Gn 51c-1 Follower DTL *As Above*	0, 0.01 ... 19.99, 20	0s	
Gn 51c-1 Reset *As Above*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51c-2 Setting *51-2 element parameter used when Cold Load operates*	0.05, 0.06 ... 2.49, 2.5	1xIn	
Gn 51c-2 Char *As Above*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51c-2 Time Mult (IEC/ANSI) *As Above*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51c-2 Delay (DTL) *As Above*	0, 0.01 ... 19.99, 20	5s	
Gn 51c-2 Min Operate Time *As Above*	0, 0.01 ... 19.99, 20	0s	
Gn 51c-2 Follower DTL *As Above*	0, 0.01 ... 19.99, 20	0s	
Gn 51c-2 Reset *As Above*	(ANSI) Decaying, 0 ... 59, 60	0s	

3.4.3. Derived E/F

3.4.3.1. 51N-1

Description	Range	Default	Setting
Gn 51N-1 Element *Selects whether the 51N-1 IDMTL derived Earth Fault element is enabled*	Disabled, Enabled	Disabled	
Gn 51N-1 Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	0.5xIn	
Gn 51N-1 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51N-1 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51N-1 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51N-1 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51N-1 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	

Description	Range	Default	Setting
Gn 51N-1 Reset *Selects between an ANSI decaying reset characteristic or a definite time reset*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51N-1 Inrush Action *Selects if the 51N-1 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.3.2. 51N-2

Description	Range	Default	Setting
Gn 51N-2 Element *Selects whether the 51N-2 IDMTL derived Earth Fault element is enabled*	Disabled, Enabled	Disabled	
Gn 51N-2 Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	0.5xIn	
Gn 51N-2 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51N-2 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51N-2 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51N-2 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51N-2 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51N-2 Reset *Selects between an ANSI decaying reset characteristic or a definite time reset*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51N-2 Inrush Action *Selects if the 51N-2 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.3.3. 50N-1

Description	Range	Default	Setting
Gn 50N-1 Element *Selects whether the DTL derived Earth fault element is enabled*	Disabled, Enabled	Disabled	
Gn 50N-1 Setting *Pickup level*	0.05, 0.06 ... 49.5, 50	0.5xIn	
Gn 50N-1 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	
Gn 50N-1 Inrush Action *Selects if the 50N-1 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.3.4. 50N-2

Description	Range	Default	Setting
Gn 50N-2 Element *Selects whether the DTL derived Earth fault element is enabled*	Disabled, Enabled	Disabled	
Gn 50N-2 Setting *Pickup level*	0.05, 0.06 ... 49.5, 50	0.5xIn	

Description	Range	Default	Setting
Gn 50N-2 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	
Gn 50N-2 Inrush Action *Selects if the 50N-2 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.4. Measured E/F

Description	Range	Default	Setting
Gn 51G/50G Measurement *Selects whether the RMS value used by the 51G & 50G elements is True RMS or only calculated at fundamental frequency*	RMS, Fundamental	RMS	

3.4.4.1. 51G-1

Description	Range	Default	Setting
Gn 51G-1 Element *Selects whether the 51G-1 IDMTL measured Earth Fault element is enabled*	Disabled, Enabled	Disabled	
Gn 51G-1 Setting *Pickup level*	0.005, 0.006 ... 0.995, 1	0.5xIn	
Gn 51G-1 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51G-1 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51G-1 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51G-1 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51G-1 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51G-1 Reset *Selects between an ANSI decaying reset characteristic or DTL reset*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51G-1 Inrush Action *Selects if the 51G-1 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.4.2. 51G-2

Description	Range	Default	Setting
Gn 51G-2 Element *Selects whether the 51G-2 IDMTL measured Earth Fault element is enabled*	Disabled, Enabled	Disabled	
Gn 51G-2 Setting *Pickup level*	0.005, 0.006 ... 0.995, 1	0.5xIn	
Gn 51G-2 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51G-2 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51G-2 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	

Description	Range	Default	Setting
Gn 51G-2 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51G-2 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51G-2 Reset *Selects between an ANSI decaying reset characteristic or DTL reset*	(ANSI) Decaying, 0 ... 59, 60	0s	
Gn 51G-2 Inrush Action *Selects if the 51G-2 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.4.3. 50G-1

Description	Range	Default	Setting
Gn 50G-1 Element *Selects whether the DTL measured Earth fault element is enabled*	Disabled, Enabled	Disabled	
Gn 50G-1 Setting *Pickup level*	0.005, 0.006 ... 24.95, 25	0.5xIn	
Gn 50G-1 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	
Gn 50G-1 Inrush Action *Selects if the 50G-1 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.4.4. 50G-2

Description	Range	Default	Setting
Gn 50G-2 Element *Selects whether the DTL measured Earth fault element is enabled*	Disabled, Enabled	Disabled	
Gn 50G-2 Setting *Pickup level*	0.005, 0.006 ... 24.95, 25	0.5xIn	
Gn 50G-2 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	
Gn 50G-2 Inrush Action *Selects if the 50G-2 element is blocked from operating when 2nd Harmonic Inrush Detector operates*	Off, Inhibit	Off	

3.4.5. Sensitive E/F

3.4.5.1. 51SEF-1

Description	Range	Default	Setting
Gn 51SEF-1 Element *Selects whether the 51SEF-1 IDMTL Sensitive Earth Fault element is enabled*	Disabled, Enabled	Disabled	
Gn 51SEF-1 Setting *Pickup level*	0.005, 0.006 ... 0.995, 1	0.2xIn	
Gn 51SEF-1 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51SEF-1 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	

Description	Range	Default	Setting
Gn 51SEF-1 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51SEF-1 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51SEF-1 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51SEF-1 Reset *Selects between an ANSI decaying reset characteristic or DTL reset*	(ANSI) Decaying, 0 ... 59, 60	0s	

3.4.5.2. 51SEF-2

Description	Range	Default	Setting
Gn 51SEF-2 Element *Selects whether the 51SEF-2 IDMTL derived Earth Fault element is enabled*	Disabled, Enabled	Disabled	
Gn 51SEF-2 Setting *Pickup level*	0.005, 0.006 ... 0.995, 1	0.2xIn	
Gn 51SEF-2 Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 51SEF-2 Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 51SEF-2 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 51SEF-2 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	
Gn 51SEF-2 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	
Gn 51SEF-2 Reset *Selects between an ANSI decaying reset characteristic or DTL reset*	(ANSI) Decaying, 0 ... 59, 60	0s	

3.4.5.3. 50SEF-1

Description	Range	Default	Setting
Gn 50SEF-1 Element *Selects whether the DTL measured Earth fault element is enabled*	Disabled, Enabled	Disabled	
Gn 50SEF-1 Setting *Pickup level*	0.005, 0.006 ... 4.995, 5	0.2xIn	
Gn 50SEF-1 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	

3.4.5.4. 50SEF-2

Description	Range	Default	Setting
Gn 50SEF-2 Element *Selects whether the DTL measured Earth fault element is enabled*	Disabled, Enabled	Disabled	
Gn 50SEF-2 Setting *Pickup level*	0.005, 0.006 ... 4.995, 5	0.2xIn	
Gn 50SEF-2 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	

3.4.6. Restricted E/F

Description	Range	Default	Setting
Gn 64H Element *High impedance restricted earth fault current element*	Disabled, Enabled	Disabled	
Gn 64H Setting *Pickup level*	0.005, 0.006 ... 0.945, 0.95	0.2xIn	
Gn 64H Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	

3.4.7. NPS Overcurrent

3.4.7.1. 46IT

Description	Range	Default	Setting
Gn 46IT Element *Selects whether the 46IT IDMTL/DTL negative phase sequence current element is enabled*	Disabled, Enabled	Disabled	
Gn 46IT Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	0.25xIn	
Gn 46IT Char *Selects characteristic curve to be IEC or ANSI IDMTL or DTL*	DTL, IEC-NI, IEC-VI, IEC-EI, IEC-LTI, ANSI-MI, ANSI-VI, ANSI-EI	IEC-NI	
Gn 46IT Time Mult (IEC/ANSI) *Time multiplier (applicable to IEC and ANSI curves but not DTL selection)*	0.025, 0.05 ... 1.575, 1.6	1	
Gn 46IT Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	
Gn 46IT Reset *Selects between an ANSI decaying reset characteristic or a definite time reset*	(ANSI) Decaying, 0 ... 59, 60	0s	

3.4.7.2. 46DT

Description	Range	Default	Setting
Gn 46DT Element *Selects whether the 46DT INST/DTL negative sequence current element is enabled*	Disabled, Enabled	Disabled	
Gn 46DT Setting *Pickup level*	0.05, 0.06 ... 3.99, 4	0.1xIn	
Gn 46DT Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0.02s	

3.4.8. Under Current

3.4.8.1. 37-1

Description	Range	Default	Setting
Gn 37-1 Element *Phase under current element 37-1*	Disabled, Enabled	Disabled	
Gn 37-1 Setting *Pickup level*	0.05, 0.1 ... 4.95, 5	0.25xIn	
Gn 37-1 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	

3.4.8.2. 37-2

Description	Range	Default	Setting
Gn 37-2 Element *Phase under current element 37-2*	Disabled, Enabled	Disabled	
Gn 37-2 Setting *Pickup level*	0.05, 0.1 ... 4.95, 5	0.25xIn	
Gn 37-2 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	

3.4.8.3. 37G-1

Description	Range	Default	Setting
Gn 37G-1 Element	Disabled, Enabled	Disabled	
Gn 37G-1 Setting	0.005, 0.006 ... 4.995, 5	0.2xIn	
Gn 37G-1 Delay	0, 0.01 ... 14300, 14400	0s	

3.4.8.4. 37G-2

Description	Range	Default	Setting
Gn 37G-2 Element	Disabled, Enabled	Disabled	
Gn 37G-2 Setting	0.005, 0.006 ... 4.995, 5	0.2xIn	
Gn 37G-2 Delay	0, 0.01 ... 14300, 14400	0s	

3.4.9. Thermal

Description	Range	Default	Setting
Gn 49 Thermal Overload *Selects whether the thermal overload protection element is enabled*	Disabled, Enabled	Disabled	
Gn 49 Overload Setting *Pickup level*	0.1, 0.11 ... 2.99, 3	1.05xIn	
Gn 49 Time Constant *Thermal time constant*	1, 1.5 ... 999.5, 1000	10m	
Gn 49 Capacity Alarm *Selects whether thermal capacity alarm enabled*	Disabled, 50 ... 99, 100	Disabled	
49 Reset Therm State *Control that allows thermal state to be manually reset*			

3.5. Supervision

3.5.1. CB Fail

Description	Range	Default	Setting
Gn 50BF Element *Selects whether the Circuit Breaker Fail element is enabled*	Disabled, Enabled	Disabled	
Gn 50BF Setting *Breaker Fail Current Pickup level. If the current falls below this level then the CB is deemed to have opened and the element is reset.*	0.05, 0.055 ... 1.995, 2	0.2xIn	
Gn 50BF-I4 Setting	0.005, 0.01 ... 1.995, 2	0.05xIn	
Gn 50BF-1 Delay *Delay before Circuit Breaker Fail stage 1 operates*	20, 25 ... 59995, 60000	60ms	
Gn 50BF-2 Delay *Delay before Circuit Breaker Fail stage 2 operates*	20, 25 ... 59995, 60000	120ms	

3.5.2. CT Supervision

Description	Range	Default	Setting
Gn 60CTS-I Element	Disabled, Enabled	Disabled	
Gn 60CTS-I Setting	0.05, 0.1 ... 1.95, 2	0.05xIn	
Gn 60CTS-I Delay	0.03, 0.04 ... 14300, 14400	10s	

3.5.3. Broken Conductor

Description	Range	Default	Setting
Gn 46BC U/C Guard Setting	0.05, 0.1 ... 4.95, 5	0.25xIn	
Gn 46BC U/C Guarded	No, Yes	No	

Description	Range	Default	Setting
Gn 46BC Element *Selects whether the definite time broken conductor element is enabled*	Disabled, Enabled	Disabled	
Gn 46BC Setting *NPS Current to PPS Current ratio*	20, 21 ... 99, 100	20%	
Gn 46BC Delay *Sets operate delay time*	0.03, 0.04 ... 14300, 14400	20s	

3.5.4. Trip CCT Supervision

Description	Range	Default	Setting
Gn 74TCS-1 *Selects whether the trip circuit supervision element 74TCS-1 is enabled*	Disabled, Enabled	Disabled	
Gn 74TCS-1 Delay *Time delay before trip circuit supervision operates*	0, 0.02 ... 59.98, 60	0.4s	
Gn 74TCS-2 *Selects whether the trip circuit supervision element 74TCS-2 is enabled*	Disabled, Enabled	Disabled	
Gn 74TCS-2 Delay *Time delay before trip circuit supervision operates*	0, 0.02 ... 59.98, 60	0.4s	
Gn 74TCS-3 *Selects whether the trip circuit supervision element 74TCS-3 is enabled*	Disabled, Enabled	Disabled	
Gn 74TCS-3 Delay *Time delay before trip circuit supervision operates*	0, 0.02 ... 59.98, 60	0.4s	

3.5.5. Inrush Detector

Description	Range	Default	Setting
Gn 81HBL2 Element *Selects whether the phase inrush detector 81HBL2 is enabled*	Disabled, Enabled	Disabled	
Gn 81HBL2 Bias *Selects the bias method used for magnetising inrush. Phase – Segregated, each phase blocks itself. Cross – Blocked, each phase can block the operation of other phases. Sum - Of Squares, each phase blocks itself using the square root of the sum of squares of the 2nd harmonic.*	Phase, Cross, Sum	Cross	
Gn 81HBL2 Setting *The magnetising inrush detector operates when the 2nd harmonic current exceeds a set percentage of the fundamental current*	0.1, 0.11 ... 0.49, 0.5	0.2xI	
DEMAND			
Gn Demand Element *Selects whether the Demand Element is enabled*			
Gn Demand Log Time Sync *When set to Enabled the Demand update period is determined by the "Data Log Period", in "DATA STORAGE" menu, in place of "Demand Update Period".*			
Gn Demand Update Period *Determines the Demand calculation update period.*			

3.5.6. Demand

Description	Range	Default	Setting
Gn Demand Element *Selects whether the Demand Element is enabled*	Disabled, Enabled	Disabled	
Gn Demand Log Time Sync *When set to Enabled the Demand update period is determined by the "Data Log Period", in "DATA STORAGE" menu, in place of "Demand Update Period".*	Disabled, Enabled	Enabled	
Gn Demand Update Period *Determines the Demand calculation update period.*	1, 2, 3, 4, 5, 10, 15, 30, 45, 60	5mins	

3.6. Control & Logic

3.6.1. Autoreclose Prot'n

Description	Range	Default	Setting
Gn 79 P/F Inst Trips *Selects which phase fault protection elements are classed as Instantaneous elements and start an autoreclose sequence. These will be blocked from operating during Delayed autoreclose sequences. See autoreclose section of manual for detail of what elements can cause only Delayed protection to be used.*	Combination of (51-1, 51-2, 50-1, 50-2)	----	
Gn 79 E/F Inst Trips *Selects which earth fault protection elements are classed as Instantaneous elements and start an autoreclose sequence. These will be blocked from operating during Delayed autoreclose sequences. See autoreclose section of manual for detail of what elements can cause only Delayed protection to be used.*	Combination of (51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2)	--------	
Gn 79 SEF Inst Trips *Selects which sensitive earth fault protection elements are classed as Instantaneous elements and start an autoreclose sequence. These will be blocked from operating during Delayed autoreclose sequences. See autoreclose section of manual for detail of what elements can cause only Delayed protection to be used.*	Combination of (51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2)	----	
Gn 79 P/F Delayed Trips *Selects which phase fault protection are classed as Delayed elements, any selected elements operating will start an autoreclose sequence.*	Combination of (51-1, 51-2, 50-1, 50-2)	51-1, 51-2, 50-1, 50-2	
Gn 79 E/F Delayed Trips *Selects which earth fault protection are classed as Delayed elements, any selected elements operating will start an autoreclose sequence.*	Combination of (51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2)	51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2	
Gn 79 SEF Delayed Trips *Selects which sensitive earth fault elements are classed as Delayed elements, any selected elements operating will start an autoreclose sequence.*	Combination of (51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2)	51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2	
Gn 79 P/F HS Trips *Selects which phase fault elements are classed as High Set elements, any selected elements operating will start an autoreclose sequence.*	Combination of (50-1, 50-2)	--	
Gn 79 E/F HS Trips *Selects which earth fault elements are classed as High Set elements, any selected elements operating will start an autoreclose sequence.*	Combination of (50N-1, 50N-2, 50G-1, 50G-2)	----	

3.6.2. Autoreclose Config

Description	Range	Default	Setting
Gn 79 Autoreclose *If disabled then all attempts to control the AR IN/OUT status will fail and the AR will be permanently Out Of Service. When enabled the AR IN/OUT state may be controlled via the CONTROL MODE menu option, via Binary Input or via local or remote communications.*	Disabled, Enabled	Disabled	
Gn 79 Num Shots *Selects the number of auto-reclose attempts before the Autorecloser locks out*	1, 2, 3, 4	1	
Gn 79 Retry Enable *Selects whether the Retry close functionality is enabled*	Disabled, Enabled	Disabled	
Gn 79 Retry Attempts *Selects the number of retries allowed per shot*	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	1	
Gn 79 Retry Interval *Time delay between retries*	0, 1 ... 599, 600	60s	
Gn 79 Reclose Blocked Delay *Specifies the maximum time that the Autorecloser can be blocked before proceeding to the lockout state. (NOTE: The block delay timer only starts after the Deadtime.)*	0, 1 ... 599, 600	60s	
Gn 79 Sequence Fail Timer *Time before lockout occurs on an incomplete reclose sequence. (i.e Trip & starter conditions have not been cleared after Sequence Fail Time.)*	0, 1 ... 599, 600	60s	
Gn 79 Sequence Co-ord *Selects whether Sequence co-ordination functionality is used or not.*	Disabled, Enabled	Enabled	
Gn 79 Cold Load Action *Selects whether whist Cold Load is active the relay will perform only Delayed Trips or not.*	Off, Delayed	Off	

3.6.2.1. P/F Shots

Description	Range	Default	Setting
Gn 79 P/F Prot'n Trip 1 *Selects whether the first phase fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all P/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn 79 P/F Deadtime 1 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 P/F Prot'n Trip 2 *Selects whether the second phase fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all P/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn 79 P/F Deadtime 2 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 P/F Prot'n Trip 3 *Selects whether the third phase fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all P/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 P/F Deadtime 3 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	

Description	Range	Default	Setting
Gn 79 P/F Prot'n Trip 4 *Selects whether the fourth phase fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all P/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 P/F Deadtime 4 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 P/F Prot'n Trip 5 *Selects whether the fifth phase fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all P/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 P/F HS Trips To Lockout *Selects how many High Set trips are allowed before going to Lockout*	1, 2, 3, 4, 5	5	
Gn 79 P/F Delayed Trips To Lockout *Selects how many Delayed trips are allowed before going to Lockout*	1, 2, 3, 4, 5	5	

3.6.2.2. E/F Shots

Description	Range	Default	Setting
Gn 79 E/F Prot'n Trip 1 *Selects whether the first earth fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn 79 E/F Deadtime 1 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 E/F Prot'n Trip 2 *Selects whether the second earth fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn 79 E/F Deadtime 2 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 E/F Prot'n Trip 3 *Selects whether the third earth fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 E/F Deadtime 3 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 E/F Prot'n Trip 4 *Selects whether the fourth earth fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 E/F Deadtime 4 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 E/F Prot'n Trip 5 *Selects whether the fifth earth fault trip is Instantaneous (Fast) or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 E/F HS Trips To Lockout *Selects how many High Set trips are allowed before going to Lockout*	1, 2, 3, 4, 5	5	
Gn 79 E/F Delayed Trips To Lockout *Selects how many Delayed trips are allowed before going to Lockout*	1, 2, 3, 4, 5	5	

3.6.2.3. SEF Shots

Description	Range	Default	Setting
Gn 79 SEF Prot'n Trip 1 *Selects whether the first sensitive earth fault trip is Instantaneous or Delayed. When set to Delayed all SEF Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn 79 SEF Deadtime 1 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 SEF Prot'n Trip 2 *Selects whether the second sensitive earth fault trip is Instantaneous or Delayed. When set to Delayed all SEF Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn 79 SEF Deadtime 2 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 SEF Prot'n Trip 3 *Selects whether the third sensitive earth fault trip is Instantaneous or Delayed. When set to Delayed all SEF Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 SEF Deadtime 3 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 SEF Prot'n Trip 4 *Selects whether the fourth sensitive earth fault trip is Instantaneous or Delayed. When set to Delayed all SEF Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 SEF Deadtime 4 *Time period between the fault being cleared and the close pulse being issued*	0, 0.1 ... 14300, 14400	5s	
Gn 79 SEF Prot'n Trip 5 *Selects whether the fifth sensitive earth fault trip is Instantaneous or Delayed. When set to Delayed all SEF Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Delayed	
Gn 79 SEF Delayed Trips To Lockout *Selects how many Delayed trips are allowed before going to Lockout*	1, 2, 3, 4, 5	5	

3.6.2.4. Extern Shots

3.6.3. Manual Close

Description	Range	Default	Setting
Gn Line Check Trip *Selects whether line check trip is enabled, if enabled no AR sequence initiated*	Disabled, Enabled	Enabled	
Gn P/F Line Check Trip *Selects whether a phase fault line check trip is Instantaneous (Fast) or Delayed. When set to Delayed all P/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn E/F Line Check Trip *Selects whether an earth fault line check trip is Instantaneous or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn SEF Line Check Trip *Selects whether a sensitive earth fault line check trip is Instantaneous or Delayed. When set to Delayed all SEF Inst Trips will be Inhibited for this shot.*	Inst, Delayed	Inst	
Gn Extern Line Check Trip *Selects whether an external line check trip is Instantaneous (Fast) or Delayed*	Not Blocked, Blocked	Not Blocked	

Description	Range	Default	Setting
Gn Close CB Delay *Delay between a Close CB control being received and the Close CB contacts being operated to allow operator walk away.*	0, 0.1 ... 899, 900	10s	
Gn Blocked Close Delay *Selects the maximum time that the manual Close CB may be blocked by interlocking before the command or control is cancelled. The relay will signal "Blocked by Interlocking".*	0, 1 ... 599, 600	5s	
Gn Open CB Delay *Delay between an Open CB control being received and the Open CB contacts being operated.*	0, 0.1 ... 899, 900	10s	
Gn CB Controls Latched *Selects whether Binary Input triggers of Close CB and Open CB are latched.*	Latch, Reset	Latch	

3.6.4. Circuit Breaker

Description	Range	Default	Setting
Gn Close CB Pulse *Specifies the duration of the circuit breaker close pulse*	0, 0.1 ... 19.9, 20	2s	
Gn Reclaim Timer *The period of time after a CB has closed and remained closed before the reclosure is deemed to be successful and the AR is re-initialised. If the CB remains open at the end of the reclaim time then the AR goes to lockout.*	0, 1 ... 599, 600	2s	
Gn Minimum LO Delay	0, 1 ... 599, 600	2s	
Gn Reset LO By Timer	Disabled, Enabled	Enabled	
Gn Trip Time Alarm *An alarm is issued when the Trip time is exceeded*	0, 0.01 ... 1.99, 2	0.2s	
Gn Trip Time Adjust *Adjustment to take into account any binary input delays for Trip Time Alarm*	0, 0.005 ... 1.995, 2	0.015s	
Gn CB Travel Alarm *Selects the maximum time that the CB should take to either Open or Close before a failure is recorded.*	0.01, 0.02 ... 1.99, 2	1s	
Gn Open CB Pulse *Selects the maximum time of the Open CB pulse. If the CB is not closed when this timer expires then an alarm will be raised to signify failure to close.*	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2	1s	

3.6.5. QUICK LOGIC

Description	Range	Default	Setting
Quick Logic *Enable or Disable all logic equations*	Disabled, Enabled	Disabled	
E1 Equation *Enable or Disable logic equation E1*	Disabled, Enabled	Disabled	

Description	Range	Default	Setting
E1 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E1 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E1 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E1 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E1 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E1 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E2 Equation *Enable or Disable logic equation E2*	Disabled, Enabled	Disabled	
E2 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E2 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E2 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E2 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E2 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E2 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E3 Equation *Enable or Disable logic equation E3*	Disabled, Enabled	Disabled	
E3 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		

Description	Range	Default	Setting
E3 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E3 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E3 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E3 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E3 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E4 Equation *Enable or Disable logic equation E4*	Disabled, Enabled	Disabled	
E4 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E4 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E4 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E4 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E4 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E4 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E5 Equation *Enable or Disable logic equation E5*	Disabled, Enabled	Disabled	
E5 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E5 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E5 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E5 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	

Description	Range	Default	Setting
E5 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E5 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E6 Equation *Enable or Disable logic equation E6*	Disabled, Enabled	Disabled	
E6 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E6 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E6 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E6 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E6 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E6 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E7 Equation *Enable or Disable logic equation E7*	Disabled, Enabled	Disabled	
E7 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E7 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E7 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E7 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E7 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E7 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E8 Equation *Enable or Disable logic equation E8*	Disabled, Enabled	Disabled	

Description	Range	Default	Setting
E8 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E8 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E8 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E8 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E8 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E8 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E9 Equation *Enable or Disable logic equation E9*	Disabled, Enabled	Disabled	
E9 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E9 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E9 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E9 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E9 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E9 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E10 Equation *Enable or Disable logic equation E10*	Disabled, Enabled	Disabled	
E10 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		

Description	Range	Default	Setting
E10 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E10 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E10 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E10 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E10 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E11 Equation *Enable or Disable logic equation E11*	Disabled, Enabled	Disabled	
E11 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E11 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E11 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E11 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E11 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E11 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E12 Equation *Enable or Disable logic equation E12*	Disabled, Enabled	Disabled	
E12 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E12 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E12 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E12 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	

Description	Range	Default	Setting
E12 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E12 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E13 Equation *Enable or Disable logic equation E13*	Disabled, Enabled	Disabled	
E13 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E13 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E13 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E13 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E13 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E13 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E14 Equation *Enable or Disable logic equation E14*	Disabled, Enabled	Disabled	
E14 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E14 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E14 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E14 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E14 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E14 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E15 Equation *Enable or Disable logic equation E15*	Disabled, Enabled	Disabled	

Description	Range	Default	Setting
E15 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E15 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E15 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E15 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E15 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E15 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	
E16 Equation *Enable or Disable logic equation E16*	Disabled, Enabled	Disabled	
E16 *Specify logic equations of the form En = <Operand><Operator><Operand>using the following:0123456789=Digit() = Parenthesis! = NOT operation. = AND operation^ = EXCLUSIVE OR operationE(followed by a digit) = Equation numberF (Followed by a digit) = Function Key numberI(Followed by a digit) = Binary Input numberL(Followed by a digit) = LED numberO(Followed by a digit) = output relay numberV(Followed by a digit) =Virtual Input/Output number.ExamplesMake a function key LED toggle when function key is pressed (requires E1 to drive L11 in output matrix)E1 = F3^L11*	(20 Character String)		
E16 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	
E16 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	
E16 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	
E16 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	
E16 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	

3.7. Input Config

3.7.1. Input Matrix

Description	Range	Default	Setting
Inhibit Cold Load	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 51-1 *Selects which inputs inhibit the 51-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 51-2 *Selects which inputs inhibit the 51-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 50-1 *Selects which inputs inhibit the 50-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 50-2 *Selects which inputs inhibit the 50-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 51N-1 *Selects which inputs inhibit the 51N-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 51N-2 *Selects which inputs inhibit the 51N-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 50N-1 *Selects which inputs inhibit the 50N-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 50N-2 *Selects which inputs inhibit the 50N-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 51G-1 *Selects which inputs inhibit the 51G-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 51G-2 *Selects which inputs inhibit the 51G-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	

Description	Range	Default	Setting
Inhibit 50G-1 *Selects which inputs inhibit the 50G-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 50G-2 *Selects which inputs inhibit the 50G-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 51SEF-1 *Selects which inputs inhibit the 51SEF-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 51SEF-2 *Selects which inputs inhibit the 51SEF-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 50SEF-1 *Selects which inputs inhibit the 50SEF-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 50SEF-2 *Selects which inputs inhibit the 50SEF-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 64H *Selects which inputs inhibit the 64H element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 46IT *Selects which inputs inhibit the 46IT element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 46DT *Selects which inputs inhibit the 46DT element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 37-1 *Selects which inputs inhibit the 37-1 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 37-2 *Selects which inputs inhibit the 37-2 element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 37G-1	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inhibit 37G-2	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	

Description	Range	Default	Setting
Inhibit 49 *Selects which inputs inhibit the 49 thermal element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset 49 *Selects which inputs resets the 49 thermal model element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 60CTS-I	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 46BC *Selects which inputs inhibit the 46 Broken Conductor element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
74TCS-1 *Selects which inputs are monitoring trip circuits*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
74TCS-2 *As Above*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
74TCS-3 *As Above*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Trig Trip Contacts *Selects which inputs will trigger the Trip contacts*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Inhibit 50BF *Selects which inputs inhibit the 50BF element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
50BF CB Faulty *Selects which input bypasses the 50BF timer due to a fault CB*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
50BF Mech Trip *Selects which input allows a mechanical trip to start the 50BF element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
50BF Ext Trip *Selects which inputs can also start the 50BF element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset CB Total Trip *Selects which inputs Reset the CB Total Trip count*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	

Description	Range	Default	Setting
Reset CB Delta Trip *Selects which inputs Reset the CB Delta Trip count*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset ARBlock Count *Selects which inputs Reset the AR Block count*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset Freq Ops Count *Selects which inputs Reset the Frequent Ops count*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset I^2t CB Wear *Selects which inputs Reset the I^2t CB Wear element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Trigger I^2t CB Wear *Selects which inputs will cause an external trigger of the I^2t CB Wear element*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset Trip Time *Selects which inputs will reset the CB trip time alarm*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 1 *Selects which inputs will activate the General Alarm 1 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 2 *Selects which inputs will activate the General Alarm 2 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 3 *Selects which inputs will activate the General Alarm 3 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 4 *Selects which inputs will activate the General Alarm 4 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 5 *Selects which inputs will activate the General Alarm 5 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 6 *Selects which inputs will activate the General Alarm 6 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 7 *Selects which inputs will activate the General Alarm 7 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	

Description	Range	Default	Setting
General Alarm 8 *Selects which inputs will activate the General Alarm 8 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 9 *Selects which inputs will activate the General Alarm 9 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 10 *Selects which inputs will activate the General Alarm 10 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 11 *Selects which inputs will activate the General Alarm 11 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
General Alarm 12 *Selects which inputs will activate the General Alarm 12 text*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
CB Open *Selects which inputs are connected to the circuit breaker open contacts*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
CB Closed *Selects which inputs are connected to the circuit breaker closed contacts*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset Demand *Selects which inputs will rest the Demand elements.*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Close CB *Selects which inputs will issue a close to the circuit breaker.*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Block Close CB *Selects which inputs will block the manual closing of the circuit breaker.*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Open CB *Selects which inputs will issue an open to the circuit breaker.*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
79 Out *Selects which inputs will switch the Auto-recloser out of service*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
79 In *Selects which inputs will switch the Auto-recloser in service*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	

Description	Range	Default	Setting
79 Trip & Reclose *Selects which inputs will trigger a trip & reclose*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Trip & Lockout *Selects which inputs will trigger a trip & lockout*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Ext Trip *Selects which input will start the external an Auto-relose sequence*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Ext Pickup *Selects which input should be connected to the pickup of the external elements required to start an Auto-reclose sequence*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Block Reclose *Selects which inputs will block the Auto-recloser*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Reset Lockout *Selects which inputs will force the Auto-recloser into the Lockout state*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Line Check *Selects which inputs will start the Line Check functionality of the Auto-recloser*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
79 Lockout *Selects which inputs will force the Auto-recloser into the Lockout state*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
Hot Line Out *Selects which inputs will switch out Hot Line Working*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
Hot Line In *Selects which inputs will switch in Hot Line Working*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
Inst Prot'n Out *Selects which inputs will switch out the instantaneous protection elements*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
Inst Prot'n In *Selects which inputs will switch in the instantaneous protection elements*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	
E/F Out *Selects which inputs will switch out the E/F protection elements.*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	--- ---	

Description	Range	Default	Setting
E/F In *Selects which inputs will switch in the E/F protection elements.*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
SEF Out *Selects which inputs will switch out the SEF protection elements*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
SEF In *Selects which inputs will switch in the SEF protection elements*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Trigger Wave Rec *Selects which inputs can trigger a waveform record*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Trigger Fault Rec *Selects which inputs can trigger a fault record*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 1 *Switches active setting group to group 1*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 2 *Switches active setting group to group 2*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 3 *Switches active setting group to group 3*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 4 *Switches active setting group to group 4*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 5 *Switches active setting group to group 5*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 6 *Switches active setting group to group 6*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 7 *Switches active setting group to group 7*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Select Group 8 *Switches active setting group to group 8*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	

Description	Range	Default	Setting
Out Of Service Mode *Selects which inputs will put the relay into Out Of Service Mode*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Local Mode *Selects which inputs will put the relay into Local Mode*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Remote Mode *Selects which inputs will put the relay into Remote Mode*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Local Or Remote Mode *Selects which inputs will put the relay into Local Or Remote Mode*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Clock Sync. *Selects which input is used to synchronise the real time clock*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	
Reset LEDs & O/Ps *Selects which inputs will reset the latched LEDs and binary outputs*	Combination of (BI1, BI2, BI3, BI4, BI5, BI6, BI7, BI8, BI9, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ---	

3.7.2. Binary Input Config

Description	Range	Default	Setting
Inverted Inputs *Selects which inputs pickup when voltage is removed.*	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	---------	
BI 1 Pickup Delay *Delay on pickup of DC Binary Input 1*	0, 0.005 ... 14300, 14400	0.02s	
BI 1 Dropoff Delay *Delay on dropoff of DC Binary Input 1*	0, 0.005 ... 14300, 14400	0s	
BI 2 Pickup Delay *Delay on pickup of DC Binary Input 2*	0, 0.005 ... 14300, 14400	0.02s	
BI 2 Dropoff Delay *Delay on dropoff of DC Binary Input 2*	0, 0.005 ... 14300, 14400	0s	
BI 3 Pickup Delay *Delay on pickup of DC Binary Input 3*	0, 0.005 ... 14300, 14400	0.02s	
BI 3 Dropoff Delay *Delay on dropoff of DC Binary Input 3*	0, 0.005 ... 14300, 14400	0s	
BI 4 Pickup Delay *Delay on pickup of DC Binary Input 4*	0, 0.005 ... 14300, 14400	0.02s	
BI 4 Dropoff Delay *Delay on dropoff of DC Binary Input 4*	0, 0.005 ... 14300, 14400	0s	
BI 5 Pickup Delay *Delay on pickup of DC Binary Input 5*	0, 0.005 ... 14300, 14400	0.02s	
BI 5 Dropoff Delay *Delay on dropoff of DC Binary Input 5*	0, 0.005 ... 14300, 14400	0s	
BI 6 Pickup Delay *Delay on pickup of DC Binary Input 6*	0, 0.005 ... 14300, 14400	0.02s	
BI 6 Dropoff Delay *Delay on dropoff of DC Binary Input 6*	0, 0.005 ... 14300, 14400	0s	
BI 7 Pickup Delay *Delay on pickup of DC Binary Input 7*	0, 0.005 ... 14300, 14400	0.02s	
BI 7 Dropoff Delay *Delay on dropoff of DC Binary Input 7*	0, 0.005 ... 14300, 14400	0s	
BI 8 Pickup Delay *Delay on pickup of DC Binary Input 8*	0, 0.005 ... 14300, 14400	0.02s	
BI 8 Dropoff Delay *Delay on dropoff of DC Binary Input 8*	0, 0.005 ... 14300, 14400	0s	
BI 9 Pickup Delay *Delay on pickup of DC Binary Input 9*	0, 0.005 ... 14300, 14400	0.02s	
BI 9 Dropoff Delay *Delay on dropoff of DC Binary Input 9*	0, 0.005 ... 14300, 14400	0s	
Enabled In Local *Selects which inputs are enabled when the relay is in Operating Mode 'Local' or 'Local Or Remote'*	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1, 2, 3, 4, 5, 6, 7, 8, 9	
Enabled In Remote *Selects which inputs are enabled when the relay is in Operating Mode 'Remote' or 'Local Or Remote'*	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1, 2, 3, 4, 5, 6, 7, 8, 9	

3.7.3. General Alarms

Description	Range	Default	Setting
General Alarm-1 *Defines the text to be displayed for General Alarm 1*	(16 Character String)	ALARM 1	
General Alarm-2 *Defines the text to be displayed for General Alarm 2*	(16 Character String)	ALARM 2	
General Alarm-3 *Defines the text to be displayed for General Alarm 3*	(16 Character String)	ALARM 3	
General Alarm-4 *Defines the text to be displayed for General Alarm 4*	(16 Character String)	ALARM 4	
General Alarm-5 *Defines the text to be displayed for General Alarm 5*	(16 Character String)	ALARM 5	
General Alarm-6 *Defines the text to be displayed for General Alarm 6*	(16 Character String)	ALARM 6	
General Alarm-7 *Defines the text to be displayed for General Alarm 7*	(16 Character String)	ALARM 7	
General Alarm-8 *Defines the text to be displayed for General Alarm 8*	(16 Character String)	ALARM 8	
General Alarm-9 *Defines the text to be displayed for General Alarm 9*	(16 Character String)	ALARM 9	
General Alarm-10 *Defines the text to be displayed for General Alarm 10*	(16 Character String)	ALARM 10	
General Alarm-11 *Defines the text to be displayed for General Alarm 11*	(16 Character String)	ALARM 11	
General Alarm-12 *Defines the text to be displayed for General Alarm 12*	(16 Character String)	ALARM 12	

3.8. Output Config

3.8.1. Output Matrix

Description	Range	Default	Setting
Protection Healthy *Relays selected are energised whilst relay self-monitoring does NOT detect any hardware or software errors and DC Supply is healthy. A changeover contact or normally closed contact may be used to generate Protection Defective from this output*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	BO1	
51-1 *51-1 IDMTL/DTL Overcurrent operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
51-2 *51-2 IDMTL/DTL Overcurrent operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
50-1 *50-1 INST/DTL Overcurrent operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	

Description	Range	Default	Setting
50-2 *50-2 INST/DTL Overcurrent operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
51N-1 *51N-1 IDMTL/DTL derived Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
51N-2 *51N-2 IDMTL/DTL derived Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
50N-1 *50N-1 INST/DTL derived Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
50N-2 *50N-2 INST/DTL derived Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
51G-1 *51G-1 IDMTL/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
51G-2 *51G-2 IDMTL/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
50G-1 *50G-1 INST/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
50G-2 *50G-2 INST/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L4	
51SEF-1 *51SEF-1 IDMTL/DTL Sensitive Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L5	
51SEF-2 *51SEF-2 IDMTL/DTL Sensitive Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L5	
50SEF-1 *50SEF-1 INST/DTL Sensitive Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L5	
50SEF-2 *50SEF-2 INST/DTL Sensitive Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L5	

Description	Range	Default	Setting
64H *64H Restricted Earth Fault element operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
Cold Load Active *Cold Load settings are active*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
46IT *IDMTL/DTL NPS Overcurrent operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
46DT *INST/DTL NPS Overcurrent operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
37-1 *37-1 Under Current operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
37-2 *37-2 Under Current operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
37G-1	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
37G-2	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
49 Trip *Thermal capacity trip operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
49 Alarm *Thermal capacity alarm operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
60CTS-I	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
46BC *46 Broken Conductor element operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
74TCS-1 *Trip Circuit 1 fail operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	

Description	Range	Default	Setting
74TCS-2 *Trip Circuit 2 fail operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
74TCS-3 *Trip Circuit 3 fail operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
81HBL2	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
General Pickup *General Pickup operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
50BF-1 *Circuit Breaker Fail stage 1 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
50BF-2 *Circuit Breaker Fail stage 2 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
CB Total Trip Count *Total CB trip count exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
CB Delta Trip Count *Delta CB trip count exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
CB Count To ARBlock *Count To AR Block CB trip count exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
CB Freq Ops Count *CB Frequent Operations count exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
I^2t CB Wear *I^2t CB Wear limit exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
Trip Time Alarm *Trip Time Alarm operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
CB Open *Indicates that the circuit breaker is in the open position.*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	

Description	Range	Default	Setting
CB Closed *Indicates that the circuit breaker is in the closed position.*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Close CB Blocked *Indicates that the Close CB control is blocked by its interlocking logic.*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
CB Alarm *Indicates the CB is either in an illegal state or is stuck neither open or closed.*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Open CB *Open pulse due to Manual Open being issued.*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Phase A *A phase A element operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L1	
Phase B *A phase B element operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L2	
Phase C *A phase C element operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	L3	
Manual Close CB *Close pulse due to Manual close being issued*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 AR Close CB *Close pulse due to auto-reclose sequence*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Trip & Reclose *Indicates the Trip & Reclose sequence being performed*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Trip & Lockout *Indicates the Trip & Lockout sequence being performed*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Lockout *Indicates the auto-recloser is in the Lockout state*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Out Of Service *Indicates the auto-recloser is out of service*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	

Description	Range	Default	Setting
79 In Service *Indicates the auto-recloser is in service*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 In Progress *Indicates an auto-reclose sequence is in progress*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Block Extern *Indicates that Extern for the current shot has been selected to be delayed. (This may be used to block external tripping elements in the same way as the internal protection elements are blocked to achieve Instantaneous / Delayed operation.)*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 CB Fail To Close *Indicates the CB was not closed at the end of the Close Pulse*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Close Onto Fault *Indicates an element starter or trip operated during the Close Pulse*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
79 Successful AR *Indicates that after a reclose and at the end of the Reclaim time the CB was closed and there were no auto-reclose trip elements operated. (This is issued for 2 secs)*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Successful Man Close *Indicates that after a manual close and at the end of the Reclaim time the CB was closed and there were no auto-reclose trip elements operated. (This is issued for 2 secs)*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Hot Line Working *Indicates that Hot LineWorking functionality has been selected*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Inst Prot'n Out *Indicates that the protection elements selected to be Instantaneous elements are switched out*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E/F Out *Indicates that the instantaneous protection elements are switched out.*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
SEF Out *Indicates that the SEF protection elements are switched out*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
New Wave Stored *The waveform recorder has stored new information Note: this is a pulsed output*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
New Fault Stored *The fault recorder has stored new information Note: this is a pulsed output*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	

Description	Range	Default	Setting
Out Of Service Mode *Indicates the relay is in Out Of Service Mode*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Local Mode *Indicates the relay is in Local Mode*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
Remote Mode *Indicates the relay is in Remote Mode*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 1 Operated *DC Binary Input 1 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 2 Operated *DC Binary Input 2 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 3 Operated *DC Binary Input 3 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 4 Operated *DC Binary Input 4 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 5 Operated *DC Binary Input 5 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 6 Operated *DC Binary Input 6 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 7 Operated *DC Binary Input 7 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 8 Operated *DC Binary Input 8 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
BI 9 Operated *DC Binary Input 9 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E1 *Quick Logic equation 1 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	

Description	Range	Default	Setting
E2 *Quick Logic equation 2 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E3 *Quick Logic equation 3 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E4 *Quick Logic equation 4 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E5 *Quick Logic equation 5 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E6 *Quick Logic equation 6 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E7 *Quick Logic equation 7 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E8 *Quick Logic equation 8 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E9 *Quick Logic equation 9 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E10 *Quick Logic equation 10 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E11 *Quick Logic equation 11 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E12 *Quick Logic equation 12 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E13 *Quick Logic equation 13 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	
E14 *Quick Logic equation 14 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	----------	

Description	Range	Default	Setting
E15 *Quick Logic equation 15 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	
E16 *Quick Logic equation 16 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8, L1, L2, L3, L4, L5, L6, L7, L8, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16)	---------- ----------	

3.8.2. Binary Output Config

Description	Range	Default	Setting
Trip Contacts *The Binary Outputs selected by this setting are classed as Trip contacts. (When any of these BOs operate the Trip LED is lit, CB Fail is started, if enabled, & a Fault Record is stored)*	Combination of (BO1, BO2, BO3, BO4, BO5, BO6, BO7, BO8)	--------	
Hand Reset Outputs *Relays selected, as Hand Reset will remain latched until manually reset from front panel or via communications link or by removing DC Supply. By default relays are Self Resetting and will reset when the driving signal is removed.*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	--------	
Min Operate Time 1 *Minimum operate time of output relay if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 2 *Minimum operate time of output relay 2 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 3 *Minimum operate time of output relay 3 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 4 *Minimum operate time of output relay 4 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 5 *Minimum operate time of output relay 5 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 6 *Minimum operate time of output relay 6 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 7 *Minimum operate time of output relay 7 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Min Operate Time 8 *Minimum operate time of output relay 8 if set to self reset, if also set to be pulsed then this is the pulse width*	0, 0.01 ... 59, 60	0.1s	
Pickup Outputs *Selects which outputs can operate because a pickup condition exists*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	--------	
Pulsed Outputs *Selects which outputs are pulsed. The pulse width is set by the Min Operate Time setting for each output*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	--------	

3.8.3. LED Config

Description	Range	Default	Setting
Self Reset LEDs *LEDs selected, as Self Reset will automatically reset when the driving signal is removed. By default all LEDs are Hand Reset and must be manually reset either locally via the front fascia or remotely via communications.*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	--------	
PU Self Reset LEDs *LEDs selected, as Self Reset will automatically reset when the driving signal is removed. By default all PU LEDs are Self Reset.*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	1, 2, 3, 4, 5, 6, 7, 8	
Green LEDs *Selects which LEDs will be green when driven*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	--------	
Red LEDs *Selects which LEDs will be red when driven*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	1, 2, 3, 4, 5, 6, 7, 8	
PU Green LEDs *Selects which LEDs will be green when driven by a pickup*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	1, 2, 3, 4, 5, 6, 7, 8	
PU Red LEDs *Selects which LEDs will be red when driven by a pickup*	Combination of (1, 2, 3, 4, 5, 6, 7, 8)	1, 2, 3, 4, 5, 6, 7, 8	

3.8.4. Pickup Config

Description	Range	Default	Setting
Gn P/F Pickups *When any of the selected pickups operate General Pickup is driven.*	Combination of (51-1, 51-2, 50-1, 50-2)	51-1, 51-2, 50-1, 50-2	
Gn E/F Pickups *As Above*	Combination of (51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2)	51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2	
Gn SEF/REF Pickups *As Above*	Combination of (51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2, 64H)	51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2, 64H	
Gn Misc Pickups *As Above*	Combination of (46IT, 46DT, 37-1, 37-2, 37G-1, 37G-2)	46IT, 46DT, 37-1, 37-2, 37G-1, 37G-2	

3.9. CB Maintenance

3.9.1. CB Counters

Description	Range	Default	Setting
Gn CB Total Trip Count *Selects whether the CB Total Trip Count counter is enabled*	Disabled, Enabled	Disabled	
Gn CB Total Trip Count Target *Selects the number of CB trips allowed before CB Total Trip Count counter output operates*	0, 1 ... 9999, 10000	100	
Gn CB Total Trip Count Reset *Resets CB Total Trip Count counter*			
Gn CB Delta Trip Count *Selects whether the CB Delta Trip Count counter is enabled*	Disabled, Enabled	Disabled	

Description	Range	Default	Setting
Gn CB Delta Trip Count Target *Selects the number of CB trips allowed before CB Delta Trip Count counter output operates*	0, 1 ... 9999, 10000	100	
Gn CB Delta Trip Count Reset *Resets CB Delta Trip Count counter*			
Gn CB Count To AR Block *Selects whether the CB Count To AR Block counter is enabled*	Disabled, Enabled	Disabled	
Gn CB Count To AR Block Target *Selects the number of CB trips allowed before CB Count To AR Block counter output operates. While count is above target the Autorecloser will only perform 1 x Delayed Shot and Lockout*	0, 1 ... 9999, 10000	100	
Gn CB Count To AR Block Reset *Resets CB Count To AR Block counter*			
Gn CB Freq Ops Count *Selects whether the CB Frequent Operations Counter is enabled*	Disabled, Enabled	Disabled	
Gn CB Freq Ops Count Target *Selects the number of CB trips allowed before CB Frequent Operations Counter output operates. While count is above target the Autorecloser will only perform 1 x Delayed Shot and Lockout*	0, 1 ... 9999, 10000	10	
Gn CB Freq Ops Count Reset *Resets CB Frequent Operations Counter*			

3.9.2. I^2T CB Wear

Description	Range	Default	Setting
Gn I^2t Counter *Selects whether the I^2t CB Wear monitor is enabled*	Disabled, Enabled	Disabled	
Gn Alarm Limit *Sets limit before alarm is issued*	10, 11 ... 99000, 100000	10MA^2s	
Gn Separation Time *Sets the time for CB mechanism to start moving, time before contacts start to separate*	0, 0.001 ... 0.199, 0.2	0.02s	
Gn Clearance Time *Time for CB to clear fault*	0, 0.001 ... 0.199, 0.2	0.04s	
Reset I^2t Count *Reset the CB wear count*			

3.10. Data Storage

3.10.1. Demand Data/Log

Description	Range	Default	Setting
Data Log Period *Selects period between stored samples*	5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60	5min	
Clear Data Log *Clear the Data Log*			
Gn Demand Window *The time window over which the Min, Max and Mean values are calculated.*	1, 2 ... 23, 24	24hrs	

Description	Range	Default	Setting
Gn Demand Window Type *Method used to calculate Demand values.*	Fixed, Peak, Rolling	Fixed	
Gn Demand Reset *Reset all Demand values*			

3.10.2. Waveform Storage

Description	Range	Default	Setting
Gn P/F Trig Storage *Select which elements trigger a waveform record*	Combination of (51-1, 51-2, 50-1, 50-2)	51-1, 51-2, 50-1, 50-2	
Gn E/F Trig Storage *As Above*	Combination of (51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2)	51N-1, 51N-2, 50N-1, 50N-2, 51G-1, 51G-2, 50G-1, 50G-2	
Gn SEF/REF Trig Storage *As Above*	Combination of (51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2, 64H)	51SEF-1, 51SEF-2, 50SEF-1, 50SEF-2, 64H	
Gn Misc Current Storage *As Above*	Combination of (46IT, 46DT, 37-1, 37-2, 49 Trip, 49 Alarm, 37G-1, 37G-2)	--------	
Pre-trigger Storage *Select Percentage of waveform record stored before the fault is triggered*	10, 20, 30, 40, 50, 60, 70, 80, 90	20%	
Record Duration *Select waveform record duration*	10 Rec x 1 Sec, 5 Rec x 2 Sec, 2 Rec x 5 Sec, 1 Rec x 10 Sec	10 Rec x 1 Sec	
Trigger Waveform *Trigger waveform storage*			
Clear Waveforms *Clear all stored waveform records*			

3.10.3. Fault Storage

Description	Range	Default	Setting
Gn Max Fault Rec Time *Maximum time Fault record information will be stored and classed as same fault*	0, 1 ... 59900, 60000	2000ms	
Clear Faults *Clear all stored fault records*			

3.10.4. Event Storage

Description	Range	Default	Setting
Clear Events *Clear all stored event records*			
Data Log *Selects whether the Data Logger is enabled*			

3.10.5. Communications

Description	Range	Default	Setting
Station Address *IEC 60870-5-103 Station Address*	0, 1 ... 65533, 65534	0	

Description	Range	Default	Setting
COM1-RS485 Protocol *Selects protocol to use for COM1-RS485*	OFF, IEC60870-5-103, MODBUS-RTU, DNP3	IEC60870-5-103	
COM1-RS485 Baud Rate *Sets the communications baud rate for COM1-RS485*	75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400	19200	
COM1-RS485 Parity *Selects whether parity information is used*	NONE, ODD, EVEN	EVEN	
COM1-RS485 Mode	Local, Remote, Local Or Remote	Remote	
COM2-USB Protocol *Selects protocol to use for COM2-USB*	OFF, IEC60870-5-103, MODBUS-RTU, DNP3	IEC689879-5-103	
COM2-USB Mode	Local	Local	
COM3 Protocol *Selects protocol to use for COM3*	OFF, IEC60870-5-103, MODBUS-RTU, DNP3	IEC60870-5-103	
COM3 Baud Rate *Sets the communications baud rate for COM3*	75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	19200	
COM3 Parity *Selects whether parity information is used*	NONE, ODD, EVEN	EVEN	
COM3 Line Idle *Selects the communications line idle sense*	LIGHT OFF, LIGHT ON	LIGHT OFF	
COM3 Data Echo *Enables echoing of data from RX port to TX port when operating relays in a Fibre Optic ring configuration*	OFF, ON	OFF	
COM3 Mode	Local, Remote, Local Or Remote	Remote	
COM4 Protocol *Selects protocol to use for COM4*	OFF, IEC60870-5-103, MODBUS-RTU, DNP3	OFF	
COM4 Baud Rate *Sets the communications baud rate for COM4*	75, 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400	19200	
COM4 Parity *Selects whether parity information is used*	NONE, ODD, EVEN	EVEN	
COM4 Line Idle *Selects the communications line idle sense*	LIGHT OFF, LIGHT ON	LIGHT OFF	
COM4 Data Echo *Enables echoing of data from RX port to TX port when operating relays in a Fibre Optic ring configuration*	OFF, ON	OFF	
COM4 Mode	Local, Remote, Local Or Remote	Remote	
DNP3 Unsolicited Events *Allows unsolicited event support in the relay. When Enabled, unsolicited event transmission can be controlled by the Master. When Disabled, Master requests are ignored.*	Disabled, Enabled	Disabled	
DNP3 Destination Address *The address of the master to which unsolicited events will be sent.*	0, 1 ... 65533, 65534	0	

4.Relay Instrumentation

Instrument	Description
---------- FAVOURITE METERS > to view	This allows the user to view his previously constructed list of 'favourite meters' by pressing TEST/RESET ► button and the READ DOWN button to scroll though the meters added to this sub-group To construct a sub-group of favourite meters, first go to the desired meter then press ENTER this will cause a message to appear on the LCD 'Add To Favourites YES pressing ENTER again will add this to the FAVOURITE METERS Sub-menu. To remove a meter from the FAVOURITE METERS sub-menu go to that meter each in the FAVOURITE METERS sub-menu or at its Primary location press ENTER and the message 'Remove From Favourites' will appear press ENTER again and this meter will be removed from the FAVOURITE METERS sub-group

Instrument	Description
---------- CURRENT METERS > to view ----------	This is the sub-group that includes all the meters that are associated with Current TEST/RESET ► allows access to this sub-group
Primary Current Ia 0.00A Ib 0.00A Ic 0.00A	Displays the 3 phase currents Primary RMS values
Secondary Current Ia 0.00A Ib 0.00A Ic 0.00A	Displays the 3 phase currents Secondary RMS values
Nom Current Ia 0.00xIn ----^{o} Ib 0.00xIn ----^{o} Ic 0.00xIn ----^{o}	Displays the 3 phase currents Nominal RMS values & phase angles with respect to PPS current.
Pri Earth Current In 0.000A Ig 0.000A	Displays the 3 Earth currents Primary RMS values
Sec Earth Current In 0.000A Ig 0.000A	Displays the 3 Earth currents Secondary RMS values
Nom Earth Current In 0.000xIn ----^{o} Ig 0.000xIn ----^{o}	Displays the 3 Earth currents Nominal RMS values & phase angles with respect to PPS current.
I Seq Components Izps 0.00xIn ----^{o} Ipps 0.00xIn ----^{o} Inps 0.00xIn ----^{o}	Displays the Current Sequence components Nominal RMS values & phase angles with respect to PPS current.
2nd Harmonic Current Ia 0.00xIn Ib 0.00xIn Ic 0.00xIn	Displays the 3 phase currents 2nd Harmonic components Nominal RMS values.

Instrument	Description
---------- THERMAL METERS > to view	This is the sub-group that includes all the meters that are associated with Thermal TEST/RESET ► allows access to this sub-group
Thermal Status Phase A 0.0% Phase B 0.0% Phase C 0.0%	Displays the thermal capacity

Instrument	Description
---------- AUTORECLOSE METERS > to view ----------	This is the sub-group that includes all the meters that are associated with Autoreclose TEST/RESET ► allows access to this sub-group. Only seen on models that have the 79 option
Autoreclose Status Out Of Service Close Shot 0	Status of the autoreclose.

Instrument	Description
---------- MAINTENANCE METERS > to view ----------	This is the sub-group that includes all the meters that are associated with Maintenance TEST/RESET ► allows access to this sub-group
CB Total Trips Count 0 Target 100	Displays the number of CB trips experienced by the CB
CB Delta Trips Count 0 Target 100	Displays the number of CB trips experienced by the CB
CB Count To AR Block Count 0 Target 100	Displays the number of CB trips experienced by the CB. When the target is reached the relay will only do 1 Delayed Trip to Lockout.
CB Freq Ops Count Count 0 Target 10	Displays the number of CB trips experienced by the CB over the last rolling 1 hr period. When the target is reached the relay will only do 1 Delayed Trip to Lockout.
CB Wear Phase A 0.00MA^2s Phase B 0.00MA^2s Phase C 0.00MA^2s	Displays the current measure of circuit breaker wear.
CB Trip Time 0.0ms	Displays the trip time for the circuit breaker.

Instrument	Description
---------- GENERAL ALARM METERS > to view ----------	This is the sub-group that includes all the meters that are associated with the Binary inputs TEST/RESET ► allows access to this sub-group

Instrument	Description
General Alarms ---------- ALARM 1 Cleared	Displays the state of General Alarm
…	
General Alarms ---------- ALARM 12 Cleared	

Instrument	Description
---------- DEMAND METERS > to view ----------	This is the sub-group that includes all the meters that are associated with the demand metering. TEST/RESET ► allows access to this sub-group
I Phase A Demand Max 0.00A Min 0.00A Mean 0.00A	Shows the Max, Min and Mean for Phase A.
I Phase B Demand Max 0.00A Min 0.00A Mean 0.00A	Shows the Max, Min and Mean for Phase B.
I Phase C Demand Max 0.00A Min 0.00A Mean 0.00A	Shows the Max, Min and Mean for Phase C.

Instrument	Description
---------- BINARY INPUT METERS > to view ----------	This is the sub-group that includes all the meters that are associated with the Binary inputs TEST/RESET ► allows access to this sub-group
BI 1-8 ---- ---- BI 9-9 -	Displays the state of DC binary inputs 1 to 8 (The number of binary inputs may vary depending on model)

Instrument	Description
---------- BINARY OUTPUT METERS > to view ----------	This is the sub-group that includes all the meters that are associated with the Binary Outputs TEST/RESET ► allows access to this sub-group
BO 1-8 ---- --- -	Displays the state of DC binary Outputs 1 to 8. (The number of binary outputs may vary depending on model)

Instrument	Description
---------- VIRTUAL METERS > to view	This is the sub-group that shows the state of the virtual status inputs in the relay TEST/RESET ► allows access to this sub-group

Instrument	Description

V 1-8 ---- ---- V 9-16 ---- ----	Displays the state of Virtual Outputs 1 to 16 (The number of virtual inputs will vary depending on model)

Instrument	Description
---------- COMMUNICATION METERS > to view ----------	This is the sub-group that includes all the meters that are associated with Communications ports TEST/RESET ► allows access to this sub-group
COM1 COM2 COM3 COM4	Displays which com ports are currently active
COM1 TRAFFIC Tx1 0 Rx1 0 Rx1 Errors 0	Displays traffic on Com1
COM2 TRAFFIC Tx2 0 Rx2 0 Rx2 Errors 0	Displays traffic on Com2
COM3 TRAFFIC Tx3 0 Rx3 0 Rx3 Errors 0	Displays traffic on Com3
COM4 TRAFFIC Tx4 0 Rx4 0 Rx4 Errors 0	Displays traffic on Com4

Instrument	Description
---------- MISCELLANEOUS METERS > to view ----------	This is the sub-group that includes indication such as the relays time and date, the amount of fault and waveform records stored in the relay TEST/RESET ► allows access to this sub-group
Date 01/01/2000 Time 22:41:44 Waveform Recs 0 Fault Recs 0	This meter displays the date and time and the number of Fault records and Event records stored in the relay
Event Recs 0 Data Log Recs 0	

Instrument	Description
---------- QUICK LOGIC METERS > to view ----------	This is the sub-group that includes all the meters that are associated with QuickLogic. TEST/RESET ► allows access to this sub-group
E 1-8 ---- ---- E 9-16 ---- ----	Shows the state of all the equations
E1 Equation EQN =0 TMR 0-0 =0 CNT 0-1 =0	Shows the state of an individual equation. EQN shows the equation state. TMR shows the timer progress and state for the equation. CNT shows the count progress and state for the equation.
E16 Equation EQN =0 TMR 0-0 =0 CNT 0-1 =0	Shows the state of an individual equation. EQN shows the equation state. TMR shows the timer progress and state for the equation. CNT shows the count progress and state for the equation.