RELAY	7SR1101-1xA12-xCA0
SOFTWARE	2436H80003R1g-1c#4fd4
RELAY IDENTIFIER	ARGUS-C 7SR11
INPUTS	3
OUTPUTS	5

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	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	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	60min
Backlight timer *Controls when the LCD backlight turns off*	Off, 1, 2, 5, 10, 15, 30, 60	5min	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*			
E/F 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	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	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	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	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	NONE
Control Password *As Above*	(Password)	NONE	NONE

Description	Range	Default	Setting
Trip Alert *When Enabled the occurance 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	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)	ARGUS-C 7SR11	ARGUS-C 7SR11

2 CT/VT CONFIG

Description	Range	Default	Setting
Earth Current Input *Selects whether 1 or 5 Amp terminals are being used for Measured Earth inputs*	1, 5	1A	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	2000:1

3 FUNCTION CONFIG

Description	Range	Default	Setting
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	Disabled
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	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	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	Disabled
Gn Close Cct Supervis'n	Enabled, Disabled	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	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	Disabled
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).*	Enabled, Disabled	Disabled	Disabled

4 CURRENT PROT'N

4.1 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	RMS

4.1.1 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	Disabled
Gn 51G-1 Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	0.5xIn	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	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	1
Gn 51G-1 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	5s
Gn 51G-1 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	0s
Gn 51G-1 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	0s
Gn 51G-1 Reset *Selects between an ANSI decaying reset characteristic or DTL reset*	(ANSI) Decaying, 0 ... 59, 60	0s	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	Off

4.1.2 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	Disabled
Gn 51G-2 Setting *Pickup level*	0.05, 0.06 ... 2.49, 2.5	0.5xIn	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	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	1
Gn 51G-2 Delay (DTL) *Delay (applicable only when DTL is selected for characteristic)*	0, 0.01 ... 19.99, 20	5s	5s

Description	Range	Default	Setting
Gn 51G-2 Min Operate Time *Minimum operate time of element.*	0, 0.01 ... 19.99, 20	0s	0s
Gn 51G-2 Follower DTL *Additional definite time added after characteristic time*	0, 0.01 ... 19.99, 20	0s	0s
Gn 51G-2 Reset *Selects between an ANSI decaying reset characteristic or DTL reset*	(ANSI) Decaying, 0 ... 59, 60	0s	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	Off

4.1.3 50G-1

Description	Range	Default	Setting
Gn 50G-1 Element *Selects whether the DTL measured Earth fault element is enabled*	Disabled, Enabled	Disabled	Disabled
Gn 50G-1 Setting *Pickup level*	0.05, 0.06 ... 49.5, 50	0.5xIn	0.5xIn
Gn 50G-1 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	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	Off

4.1.4 50G-2

Description	Range	Default	Setting
Gn 50G-2 Element *Selects whether the DTL measured Earth fault element is enabled*	Disabled, Enabled	Disabled	Disabled
Gn 50G-2 Setting *Pickup level*	0.05, 0.06 ... 49.5, 50	0.5xIn	0.5xIn
Gn 50G-2 Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	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	Off

5 RESTRICTED E/F

Description	Range	Default	Setting
Gn 64H Element *High impedance restricted earth fault current element*	Disabled, Enabled	Disabled	Disabled
Gn 64H Setting *Pickup level*	0.05, 0.055 ... 0.945, 0.95	0.2xIn	0.2xIn
Gn 64H Delay *Sets operate delay time*	0, 0.01 ... 14300, 14400	0s	0s

6 UNDER CURRENT

6.1 37-1

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

6.2 37-2

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

7 SUPERVISION

7.1 TRIP CCT SUPERVISION

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

7.2 CLOSE CCT SUPERVIS'N

Description	Range	Default	Setting
Gn 74CCS-1	Disabled, Enabled	Disabled	Disabled
Gn 74CCS-1 Delay	0, 0.02 ... 59.98, 60	0.4s	0.4s
Gn 74CCS-2	Disabled, Enabled	Disabled	Disabled

Description	Range	Default	Setting
Gn 74CCS-2 Delay	0, 0.02 ... 59.98, 60	0.4s	0.4s
Gn 74CCS-3	Disabled, Enabled	Disabled	Disabled
Gn 74CCS-3 Delay	0, 0.02 ... 59.98, 60	0.4s	0.4s

7.3 INRUSH DETECTOR

Description	Range	Default	Setting
Gn 81HBL2 Element *Selects whether the phase inrush detector 81HBL2 is enabled*	Disabled, Enabled	Disabled	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	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	0.2xI

7.4 DEMAND

Description	Range	Default	Setting
Gn Demand Element *Selects whether the Demand Element is enabled*	Disabled, Enabled	Disabled	Disabled
Gn Demand Reset *Reset all Demand values*			
Gn Demand Update Period *Determines the Demand calculation update period.*	1, 2, 3, 4, 5, 10, 15, 30, 45, 60	5mins	5mins
Gn Demand Window *The time window over which the Min, Max and Mean values are calculated.*	1, 2 ... 23, 24	24hrs	24hrs
Gn Demand Window Type *Method used to calculate Demand values.*	Fixed, Peak, Rolling	Fixed	Fixed

8 CONTROL & LOGIC

8.1 AUTORECLOSE PROT'N

Description	Range	Default	Setting
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.*			
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.*			

Description	Range	Default	Setting
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.*			

8.2 AUTORECLOSE CONFIG

Description	Range	Default	Setting
P/F SHOTS			
E/F SHOTS			
SEF SHOTS			
EXTERN SHOTS			
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.*			
Gn Extern Line Check Trip *Selects whether an external line check trip is Instantaneous or Delayed*			
Gn 79 E/F Prot'n Trip 1 *Selects whether the first earth fault trip is Instantaneous or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*			
Gn 79 Extern Prot'n Trip 1 *Selects whether the first external trip is Instantaneous or Delayed*			
Gn 79 E/F Prot'n Trip 2 *Selects whether the second earth fault trip is Instantaneous or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*			
Gn 79 Extern Prot'n Trip 2 *Selects whether the second external trip is Instantaneous or Delayed*			
Gn 79 E/F Prot'n Trip 3 *Selects whether the third earth fault trip is Instantaneous or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*			
Gn 79 Extern Prot'n Trip 3 *Selects whether the third external trip is Instantaneous or Delayed*			
Gn 79 E/F Prot'n Trip 4 *Selects whether the fourth earth fault trip is Instantaneous or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*			
Gn 79 Extern Prot'n Trip 4 *Selects whether the fourth external trip is Instantaneous or Delayed*			

Description	Range	Default	Setting
Gn 79 E/F Prot'n Trip 5 *Selects whether the fifth earth fault trip is Instantaneous or Delayed. When set to Delayed all E/F Inst Trips will be Inhibited for this shot.*			
Gn 79 Extern Prot'n Trip 5 *Selects whether the fifth external trip is Instantaneous or Delayed*			
Gn 79 E/F Delayed Trips To LO Target			
Gn 79 E/F HS Trips To LO Target			
Gn 79 Extern Trips To LO Target			
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.*			
Gn 79 Number Of Shots			
Gn 79 First Deadtime 1			
Gn 79 First Deadtime 2			
Gn 79 First Deadtime 3			
Gn 79 First Deadtime 4			
Gn 79 Second Deadtime 1			
Gn 79 Second Deadtime 2			
Gn 79 Second Deadtime 3			
Gn 79 Second Deadtime 4			
Gn 79 Third Deadtime 1			
Gn 79 Third Deadtime 2			
Gn 79 Third Deadtime 3			
Gn 79 Third Deadtime 4			
Gn 79 Fourth Deadtime 1			

Description	Range	Default	Setting
Gn 79 Fourth Deadtime 2			
Gn 79 Fourth Deadtime 3			
Gn 79 Fourth Deadtime 4			
Gn 79 Retry Enable *Selects whether the Retry close functionality is enabled*			
Gn 79 Retry Attempts *Selects the number of retries allowed per shot*			
Gn 79 Retry Interval *Time delay between retries*			
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.)*			
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.)*			
Gn 79 Minimum LO Delay *The time after entering lockout before any further external close commands are allowed.*			
Gn 79 Reset LO By Timer *Select whether Lockout is automatically reset after a time delay.*			
Gn 79 Line Check Trip			
Gn 79 Sequence Co-ord *Selects whether Sequence co-ordination functionality is used or not.*			
Gn 79 Cold Load Action *Selects whether whist Cold Load is active the relay will perform only Delayed Trips or not.*			

8.3 MANUAL CLOSE

8.4 CIRCUIT BREAKER

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, 1 ... 59900, 60000	10000ms	10000ms
Gn Close CB Pulse *Specifies the duration of the circuit breaker close pulse*	0, 0.1 ... 19.9, 20	2s	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	2s

Description	Range	Default	Setting
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	5s
Gn Open CB Delay *Delay between an Open CB control being received and the Open CB contacts being operated.*	0, 1 ... 59900, 60000	10000ms	10000ms
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	1s
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	1s
Gn Trip Time Alarm	0, 0.01 ... 1.99, 2	0.2s	0.2s
Gn Trip Time Adjust	0, 0.005 ... 1.995, 2	0.015s	0.015s
Gn CB Controls Latched *Selects whether Binary Input triggers of Close CB and Open CB are latched.*	Disabled, Enabled	Enabled	Enabled

8.5 QUICK LOGIC

Description	Range	Default	Setting
Quick Logic *Enable or Disable all logic equations*	Disabled, Enabled	Disabled	Disabled
E1 Equation *Enable or Disable logic equation E1*	Disabled, Enabled	Disabled	Disabled
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	0s
E1 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	0s
E1 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	1
E1 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	Off
E1 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	0s

Description	Range	Default	Setting
E2 Equation *Enable or Disable logic equation E2*	Disabled, Enabled	Disabled	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	0s
E2 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	0s
E2 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	1
E2 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	Off
E2 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	0s
E3 Equation *Enable or Disable logic equation E3*	Disabled, Enabled	Disabled	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)		
E3 Pickup Delay *Time before equation output operates, after equation satisfied*	0, 0.01 ... 14300, 14400	0s	0s
E3 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	0s
E3 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	1
E3 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	Off
E3 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	0s
E4 Equation *Enable or Disable logic equation E4*	Disabled, Enabled	Disabled	Disabled

Description	Range	Default	Setting
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	0s
E4 Dropoff Delay *Time before equation output resets, after equation nolonger satisfied*	0, 0.01 ... 14300, 14400	0s	0s
E4 Counter Target *Select number of times equation must be satisfied before equation output operates*	1, 2 ... 998, 999	1	1
E4 Counter Reset Mode *Select type of counter reset mode*	Off, Multi-shot, Single-shot	Off	Off
E4 Counter Reset Time *Select counter reset time*	0, 0.01 ... 14300, 14400	0s	0s

9 INPUT CONFIG

9.1 INPUT MATRIX

Description	Range	Default	Setting
Inhibit 51G-1 *Selects which inputs inhibit the 51G-1 element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Inhibit 51G-2 *Selects which inputs inhibit the 51G-2 element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Inhibit 50G-1 *Selects which inputs inhibit the 50G-1 element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Inhibit 50G-2 *Selects which inputs inhibit the 50G-2 element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Inhibit 64H *Selects which inputs inhibit the 64H element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Inhibit 37-1 *Selects which inputs inhibit the 37-1 element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Inhibit 37-2 *Selects which inputs inhibit the 37-2 element*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74TCS-1 *Selects which inputs are monitoring trip circuits*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74TCS-2 *As Above*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74TCS-3 *As Above*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------

Description	Range	Default	Setting
74CCS-1	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74CCS-2	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74CCS-3	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Trig Trip Contacts *Selects which inputs will trigger the Trip contacts*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Reset CB Total Trip *Selects which inputs Reset the CB Total Trip count*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Reset CB Delta Trip *Selects which inputs Reset the CB Delta Trip count*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Reset Trip Time	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
General Alarm 1 *Selects which inputs will activate the General Alarm 1 text*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
General Alarm 2 *Selects which inputs will activate the General Alarm 2 text*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
General Alarm 3 *Selects which inputs will activate the General Alarm 3 text*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
General Alarm 4 *Selects which inputs will activate the General Alarm 4 text*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
General Alarm 5 *Selects which inputs will activate the General Alarm 5 text*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
General Alarm 6 *Selects which inputs will activate the General Alarm 6 text*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Reset Demand *Selects which inputs will rest the Demand elements.*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Close CB *Selects which inputs will issue a close to the circuit breaker.*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Block Close CB *Selects which inputs will block the manual closing of the circuit breaker.*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Open CB *Selects which inputs will issue an open to the circuit breaker.*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
CB Closed *Selects which inputs are connected to the circuit breaker closed contacts*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
CB Open *Selects which inputs are connected to the circuit breaker open contacts*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
79 Out *Selects which inputs will switch the Auto-recloser out of service*			
79 In *Selects which inputs will switch the Auto-recloser in service*			

Description	Range	Default	Setting
79 Trip & Reclose *Selects which inputs will trigger a trip & reclose*			
79 Trip & Lockout *Selects which inputs will trigger a trip & lockout*			
79 Ext Trip *Selects which input will start the external an Auto-relose sequence*			
79 Ext Pickup *Selects which input should be connected to the pickup of the external elements required to start an Auto-reclose sequence*			
79 Block Reclose *Selects which inputs will block the Auto-recloser*			
79 Reset Lockout *Selects which inputs will force the Auto-recloser into the Lockout state*			
79 Line Check *Selects which inputs will start the Line Check functionality of the Auto-recloser*			
79 Lockout *Selects which inputs will force the Auto-recloser into the Lockout state*			
E/F Out *Selects which inputs will switch out the E/F protection elements.*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
E/F In *Selects which inputs will switch in the E/F protection elements.*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Trigger Wave Rec *Selects which inputs can trigger a waveform record*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Trigger Fault Rec *Selects which inputs can trigger a fault record*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Select Group 1 *Switches active setting group to group 1*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Select Group 2 *Switches active setting group to group 2*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Select Group 3 *Switches active setting group to group 3*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Select Group 4 *Switches active setting group to group 4*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Out Of Service Mode *Selects which inputs will put the relay into Out Of Service Mode*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Local Mode *Selects which inputs will put the relay into Local Mode*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Remote Mode *Selects which inputs will put the relay into Remote Mode*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Local Or Remote Mode *Selects which inputs will put the relay into Local Or Remote Mode*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------

Description	Range	Default	Setting
Clock Sync. *Selects which input is used to synchronise the real time clock*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Reset LEDs & O/Ps *Selects which inputs will reset the latched LEDs and binary outputs*	Combination of (BI1, BI2, BI3, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------

9.2 FUNCTION KEY MATRIX

9.3 BINARY INPUT CONFIG

Description	Range	Default	Setting
Inverted Inputs *Selects which inputs pickup when voltage is removed.*	Combination of (1, 2, 3)	---	---
BI 1 Pickup Delay *Delay on pickup of DC Binary Input 1*	0, 0.005 ... 14300, 14400	0.02s	0.02s
BI 1 Dropoff Delay *Delay on dropoff of DC Binary Input 1*	0, 0.005 ... 14300, 14400	0s	0s
BI 2 Pickup Delay *Delay on pickup of DC Binary Input 2*	0, 0.005 ... 14300, 14400	0.02s	0.02s
BI 2 Dropoff Delay *Delay on dropoff of DC Binary Input 2*	0, 0.005 ... 14300, 14400	0s	0s
BI 3 Pickup Delay *Delay on pickup of DC Binary Input 3*	0, 0.005 ... 14300, 14400	0.02s	0.02s
BI 3 Dropoff Delay *Delay on dropoff of DC Binary Input 3*	0, 0.005 ... 14300, 14400	0s	0s
Enabled In Local	Combination of (1, 2, 3)	1, 2, 3	1, 2, 3
Enabled In Remote	Combination of (1, 2, 3)	1, 2, 3	1, 2, 3

9.4 FUNCTION KEY CONFIG

9.5 GENERAL ALARMS

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

Description	Range	Default	Setting
REYLOGIC ELEMENT			
Gn Close CB Delay DO			
Gn CloseCBPulse PU			
Gn CloseCBPulse DO			
Gn InhibitedByInterlockingTimer PU			
Gn InhibitedByInterlockingTimer DO			
Gn Open CB Delay DO			
Gn CB_DBI_Timer PU			
Gn CB_DBI_Timer DO			
Gn CB_Mem_Timer PU			
Gn CB_Mem_Timer DO			
Gn ControlAROut PU			
Gn ControlAROut DO			
Gn ControlARIn PU			
Gn ControlARIn DO			
Gn TripAndReclose PU			
Gn TripAndReclose DO			
Gn TripAndLockout PU			
Gn TripAndLockout DO			
Gn OpsCounterLOTimer PU			
Gn OpsCounterLOTimer DO			
Gn ClearProtTrip PU			

Description	Range	Default	Setting
Gn ClearProtTrip DO			
Gn SuccesCloseThisTime PU			
Gn SuccesCloseThisTime DO			
Gn ControlEFOut PU			
Gn ControlEfOut DO			
Gn ControlEFIn PU			
Gn ControlEFIn DO			
Gn TriggerHold PU			
Gn TriggerHold DO			
Gn TriggerReset DO			
Gn SetOutOfServiceTmr PU			
Gn SetOutOfServiceTmr DO			
Gn SetLocalModeTmr PU			
Gn SetLocalModeTmr DO			
Gn SetRemoteModeTmr PU			
Gn SetRemoteModeTmr DO			
Gn SetLocalOrRemoteModeTmr PU			
Gn SetLocalOrRemoteModeTmr DO			

10 OUTPUT CONFIG

10.1 OUTPUT MATRIX

Description	Range	Default	Setting

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, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	BO1	BO1
51G-1 *51G-1 IDMTL/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
51G-2 *51G-2 IDMTL/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
50G-1 *50G-1 INST/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
50G-2 *50G-2 INST/DTL measured Earth Fault operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
64H *64H Restricted Earth Fault element operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
37-1 *37-1 Under Current operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
37-2 *37-2 Under Current operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74TCS-1 *Selects which inputs are monitoring trip circuits*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74TCS-2 *As Above*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74TCS-3 *As Above*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74CCS-1	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74CCS-2	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
74CCS-3	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------

Description	Range	Default	Setting
General Pickup *General Pickup operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	L1	L1
CB Total Trip Count *Total CB trip count exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
CB Delta Trip Count *Delta CB trip count exceeded*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Trip Time Alarm	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Close CB Blocked *Indicates that the Close CB control is blocked by its interlocking logic.*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Open CB *Selects which inputs will issue an open to the circuit breaker.*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
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, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
CB Closed *Selects which inputs are connected to the circuit breaker closed contacts*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
CB Open *Selects which inputs are connected to the circuit breaker open contacts*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Manual Close CB *Close pulse due to Manual close being issued*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
79 AR Close CB *Close pulse due to auto-reclose sequence*			
79 Trip & Reclose *Selects which inputs will trigger a trip & reclose*			
79 Trip & Lockout *Selects which inputs will trigger a trip & lockout*			
79 Lockout *Selects which inputs will force the Auto-recloser into the Lockout state*			
79 Out Of Service *Indicates the auto-recloser is out of service*			
79 In Service *Indicates the auto-recloser is in service*			
79 In Progress *Indicates an auto-reclose sequence is in progress*			

Description	Range	Default	Setting
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.)*			
CB Fail To Close	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
79 Close Onto Fault *Indicates an element starter or trip operated during the Close Pulse*			
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)*			
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, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
E/F Out *Selects which inputs will switch out the E/F protection elements.*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
New Wave Stored *The waveform recorder has stored new information Note: this is a pulsed output*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
New Fault Stored *The fault recorder has stored new information Note: this is a pulsed output*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Out Of Service Mode *Selects which inputs will put the relay into Out Of Service Mode*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Local Mode *Selects which inputs will put the relay into Local Mode*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
Remote Mode *Selects which inputs will put the relay into Remote Mode*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
BI 1 Operated *DC Binary Input 1 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
BI 2 Operated *DC Binary Input 2 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
BI 3 Operated *DC Binary Input 3 has operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------

Description	Range	Default	Setting
E1 *Quick Logic equation 1 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
E2 *Quick Logic equation 2 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
E3 *Quick Logic equation 3 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------
E4 *Quick Logic equation 4 operated*	Combination of (BO1, BO2, BO3, BO4, BO5, L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	----------	----------

10.2 BINARY OUTPUT CONFIG

Description	Range	Default	Setting
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)	-----	-----
Min Operate Time 1 *Minimum operate time of output relay 1*	0, 0.01 ... 59, 60	0.1s	0.1s
Min Operate Time 2 *Minimum operate time of output relay 2*	0, 0.01 ... 59, 60	0.1s	0.1s
Min Operate Time 3 *Minimum operate time of output relay 3*	0, 0.01 ... 59, 60	0.1s	0.1s
Min Operate Time 4 *Minimum operate time of output relay 4*	0, 0.01 ... 59, 60	0.1s	0.1s
Min Operate Time 5 *Minimum operate time of output relay 5*	0, 0.01 ... 59, 60	0.1s	0.1s
Pickup Outputs	Combination of (1, 2, 3, 4, 5)	-----	-----
Pulsed Outputs	Combination of (1, 2, 3, 4, 5)	-----	-----

10.3 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, 9)	1	1
PU Self Reset LEDs	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9
Green LEDs *Selects which LEDs will be green when driven*	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1	1

Description	Range	Default	Setting
Red LEDs *Selects which LEDs will be red when driven*	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9
PU Green LEDs	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9
PU Red LEDs	Combination of (1, 2, 3, 4, 5, 6, 7, 8, 9)	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9

10.4 PICKUP CONFIG

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

10.5 TRIP 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)	-----	-----
Trip Triggered	Combination of (L1, L2, L3, L4, L5, L6, L7, L8, L9, V1, V2, V3, V4, V5, V6, V7, V8)	L2	L2

11 CB MAINTENANCE

11.1 CB COUNTERS

Description	Range	Default	Setting
Gn CB Total Trip Count *Selects whether the CB Total Trip Count counter is enabled*	Disabled, Enabled	Disabled	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	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	Disabled
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	100
Gn CB Delta Trip Count Reset *Resets CB Delta Trip Count counter*			

11.2 OUTPUT MATRIX TEST

12 DATA STORAGE

Description	Range	Default	Setting

Description	Range	Default	Setting
Gn E/F Trig Storage *Select which elements trigger a waveform record*	Combination of (51G-1, 51G-2, 50G-1, 50G-2)	51G-1, 51G-2, 50G-1, 50G-2	51G-1, 51G-2, 50G-1, 50G-2
Gn Misc Current Storage *As Above*	Combination of (37-1, 37-2, 64H)	64H	64H
Pre-trigger Storage *Select Percentage of waveform record stored before the fault is triggered*	10, 20, 30, 40, 50, 60, 70, 80, 90	20%	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	10 Rec x 1 Sec
Trigger Waveform *Trigger waveform storage*			
Clear Waveforms *Clear all stored waveform records*			
Gn Max Fault Rec Time *Maximum time Fault record information will be stored and classed as same fault*	0, 1 ... 59900, 60000	2000ms	2000ms
Clear Faults *Clear all stored fault records*			
Clear Events *Clear all stored event records*			

13 COMMUNICATIONS

Description	Range	Default	Setting
Station Address *IEC 60870-5-103 Station Address*	0, 1 ... 65533, 65534	1	1
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	Disabled
DNP3 Destination Address *The address of the master to which unsolicited events will be sent.*	0, 1 ... 65533, 65534	0	0
COM1-RS485 Protocol *Selects protocol to use for COM1-RS485*	OFF, IEC60870-5-103, MODBUS-RTU, DNP3	IEC60870-5-103	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	19200
COM1-RS485 Parity *Selects whether parity information is used*	NONE, ODD, EVEN	EVEN	EVEN
COM2-USB Protocol *Selects protocol to use for COM2-USB*			
REYLOGIC CONTROL			
MIMIC SETTINGS			