6 CONFIGURATION MODE

6.1 ENTRY INTO CONFIGURATION MODE

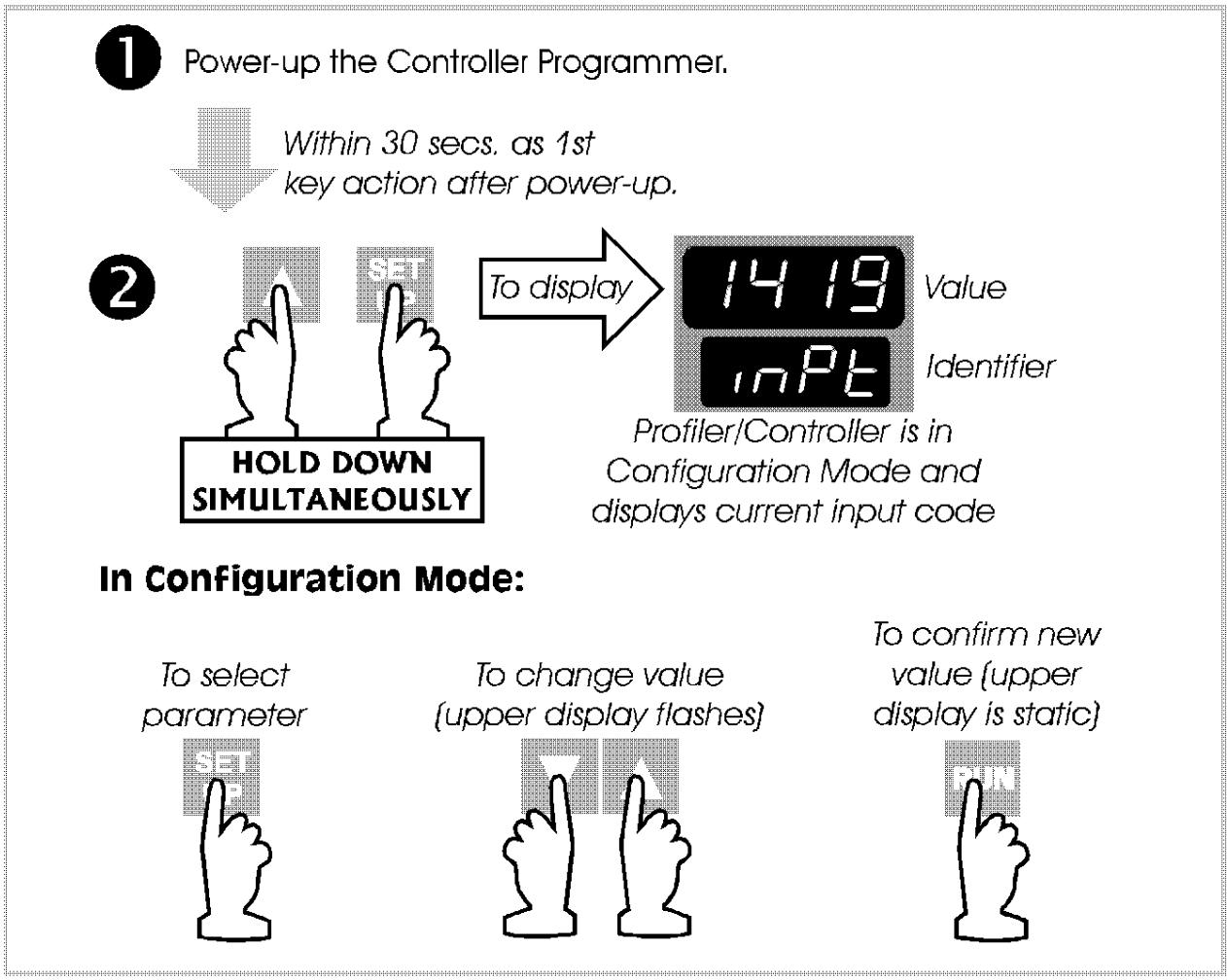


Figure 6-1 Entry into Configuration Mode

NOTE: Changes to the value/setting of certain Configuration Mode parameters (e.g. input range, output use and type) will cause the Set Up Mode parameters to be automatically set to their default values the next time Set Up Mode is entered (see also beginning of Section 4).

6.2 HARDWARE DEFINITION CODE

This parameter is a special facility in Configuration Mode, which is used to represent the hardware fitted (input type, Output 1 type, Output 2 type and Output 3 type); this must be compatible with the hardware actually fitted. For access to, and adjustment of, the Hardware Definition Code, see Figure 6-2 and Table 6-1.

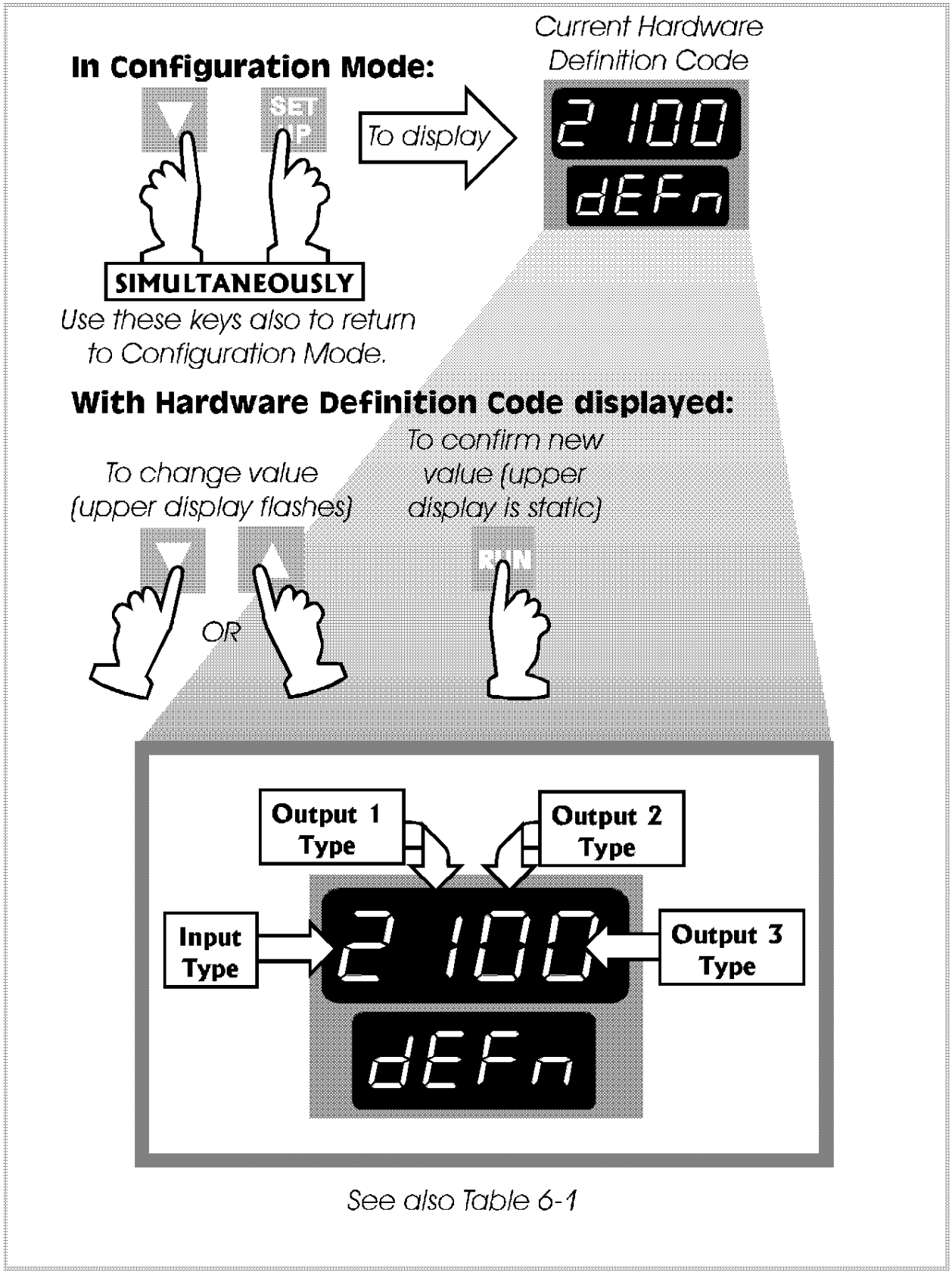


Figure 6-2 Hardware Definition Code - Access and Adjustment

Table 6-1 Hardware Definition Code - Input/Output Type Selection

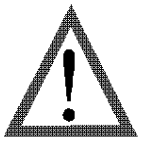
Value	0	1	2	3	4	5	7	8
Input		RTD/ Linear DC mV	Thermo-couple	Linear DC mA	Linear DC V			
Output 1		Relay	SSR Drive	DC 0 - 10V	DC 0 - 20mA	DC 0 - 5V	DC 4 - 20mA	Solid State
Output 2	Not fitted	Relay	SSR Drive	DC 0 - 10V	DC 0 - 20mA	DC 0 - 5V	DC 4 - 20mA	Solid State
Output 3	Not fitted	Relay	SSR Drive	DC 0 - 10V	DC 0 - 20mA	DC 0 - 5V	DC 4 - 20mA	

NOTES:

1. If Output 2 is a relay/Solid State/SSR Drive output, it may be a control output (COOL), an event output or an alarm output; if it is set to be a DC output, it can only be a control output (COOL).

2. If Output 3 is a relay/SSR Drive output (it cannot be an Solid State output), it can only be an event output or an alarm output; if it is set to be a DC output, it can only be a recorder (i.e. re-transmitted process variable or setpoint) output.

The maximum setting available for this code is 4887. For example, the code for a thermocouple input, DC 4 - 20mA primary output (Output 1) and relay Output 3 would be 2701.



NOTE: It is essential that this code is changed promptly whenever there is a change to the instrument s hardware configuration (change of input/output type, alarm/recorder output added/removed etc.). The instrument software depends upon this code to ensure that the instrument operates correctly.

This code may be viewed as a Read Only display in Base Mode (see Subsection 1.11).

6.3 OPTION SELECTION

This indicates the option fitted (Communications Option, Remote Run/Hold option or no option at all). It is accessed whilst the Hardware Definition Code is displayed (see Figure 6-3).

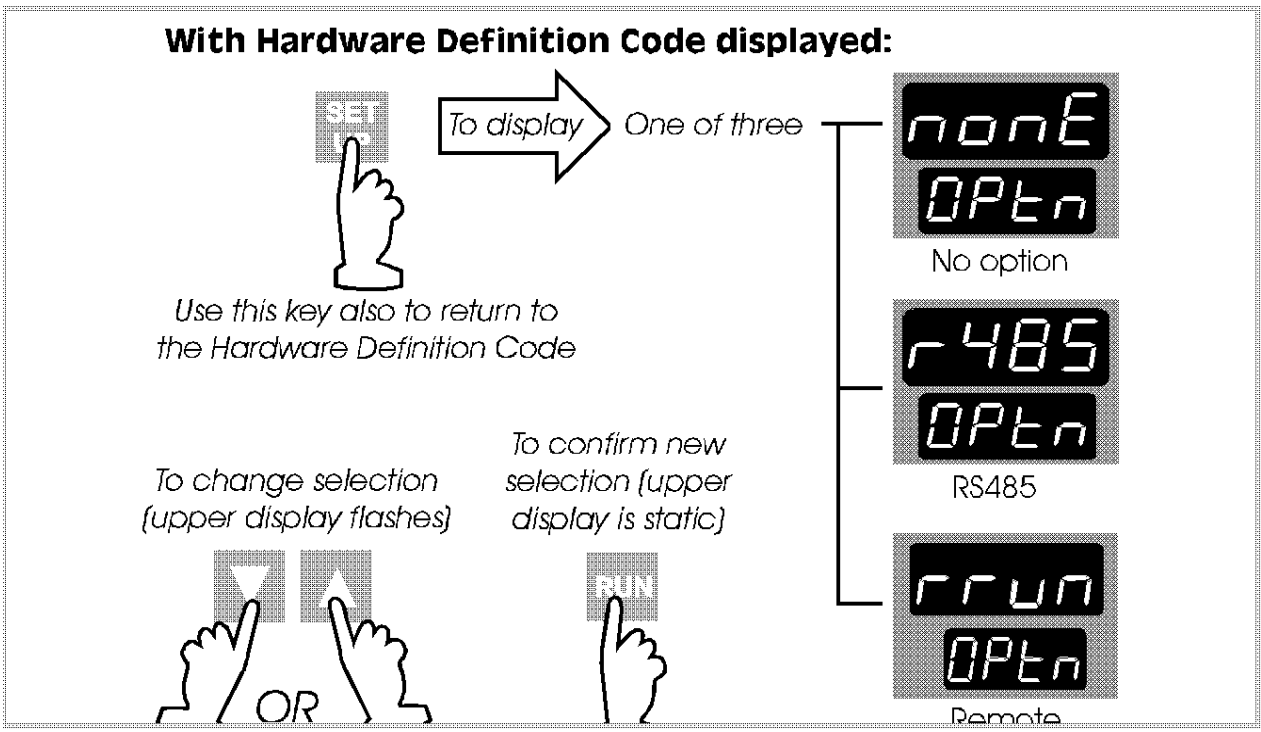


Figure 6-3 Option Selection

6.4 CONFIGURATION MODE PARAMETERS

Parameter	Identifier	Description
Input Range	inPt	A four-digit code (see Appendix B). Default settings: Thermocouple - 1419 (Type J, 0 - 761°C) RTD/Linear mV - 7220 (RTD Pt100 0 - 800°C) Linear mA - 3414 (4 - 20mA) Linear V - 4446 (0 - 10V)
Output 1 Action	CtrL	rEu Reverse-acting dir Direct-acting
Alarm 1 Type	ALA1	P_hi Process High Alarm P_Lo Process Low Alarm dE Deviation Alarm bAnd Band Alarm nonE No alarm

Parameter	Identifier	Description	
Alarm 2 Type	ALA2	P_hi	Process High Alarm
		P_Lo	Process Low Alarm (default)
		dE	Deviation Alarm
		bAnd	Band Alarm
		nonE	No alarm
Alarm Inhibit	Inhi	nonE	No alarms inhibited
		ALA1	Alarm 1 inhibited
		ALA2	Alarm 2 inhibited
		both	Both Alarm 1 & Alarm 2 inhibited
Program Mode	tYPE	rA	Rate
		ti	Time

Parameter	Identifier	Description	
Output 2 Usage	USE2	Out2	Output 2 secondary control (COOL) output
		A2_d	Alarm 2 hardware output, direct-acting. Available only if relay/DC Pulse/AC SSR output.
		A2_r	Alarm 2 hardware output, reverse-acting. Available only if relay, DC Pulse or AC SSR output.
		Or_d	Direct-acting output for Logical OR of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output.
		Or_r	Reverse-acting output for Logical OR of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output.
		Ad_d	Direct-acting output for Logical AND of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output.
		Ad_r	Reverse-acting output for Logical AND of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output.
		Pr_d	Profile Active output, direct-acting. Available only if relay, DC Pulse or AC SSR output.
		Pr_r	Profile Active output, reverse-acting. Available only if relay, DC Pulse or AC SSR output.
		Et	Event output, direct-acting. Available only if relay, DC Pulse or AC SSR output.

Example of Logical Combination of Alarms - Logical OR of Alarm 1 & Alarm 2

Direct-acting	Reverse-acting
AL1 OFF, AL2 OFF: Relay de-energised	AL1 OFF, AL2 OFF: Relay energised
AL1 ON, AL2 OFF: Relay energised	AL1 ON, AL2 OFF: Relay de-energised
AL1 OFF, AL2 ON: Relay energised	AL1 OFF, AL2 ON: Relay de-energised
AL1 ON, AL2 ON: Relay energised	AL1 ON, AL2 ON: Relay de-energised

Parameter	Identifier	Description
Output 3 Usage	USE3	AI_d Alarm 1 hardware output, direct-acting. Available only if relay/DC Pulse/AC SSR output. AI_r Alarm 1 hardware output, reverse-acting. Available only if relay, DC Pulse or AC SSR output. Or_d Direct-acting output for Logical OR of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output. Or_r Reverse-acting output for Logical OR of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output. Ad_d Direct-acting output for Logical AND of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output. Ad_r Reverse-acting output for Logical AND of Alarm 1 and Alarm 2. Available only if relay, DC Pulse, or AC SSR output. rEcS Recorder Output - Setpoint (DC output only) rEcP Recorder Output - Process Variable (DC Output only) Pr_d Profile Active output, direct-acting. Available only if relay or DC Pulse output. Pr_r Profile Active output, reverse-acting. Available only if relay or DC Pulse output. Et Event output, direct-acting. Available only if relay or DC Pulse output.

Example of Logical Combination of Alarms - Logical AND of Alarm 1 & Alarm 2

Direct-acting	Reverse-acting
AL1 OFF, AL2 OFF: Relay de-energised	AL1 OFF, AL2 OFF: Relay energised
AL1 ON, AL2 OFF: Relay de-energised	AL1 ON, AL2 OFF: Relay energised
AL1 OFF, AL2 ON: Relay de-energised	AL1 OFF, AL2 ON: Relay energised
AL1 ON, AL2 ON: Relay energised	AL1 ON, AL2 ON: Relay de-energised

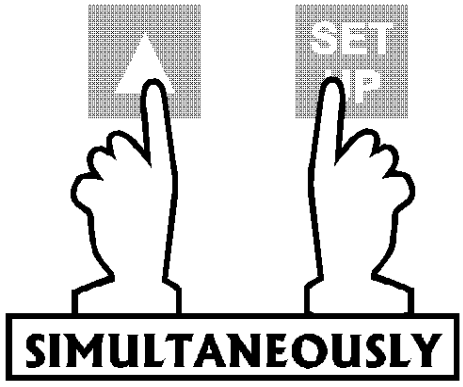
Parameter	Identifier	Description
Δ & ∇ LEDs Usage (on Front Panel)	LEdS	rdir Ramp direction: Δ = positive ramp ∇ = negative ramp both = dwell outS Output state: Δ = Output 1 ON ∇ = Output 2 ON
Guaranteed Soak Enable/Disable (see Subsection 3.2.5)	SoAP	EnAb Enabled diSA Disabled mAn Manual
Delayed Start Enable/Disable	dELY	EnAb Enabled diSA Disabled
Power Loss Recovery	rEc	coLd Cold Start (program re-started from beginning) hot Warm Start (program resumed from point at which power failed)
Start On	StOn	Proc Start program with setpoint at current process variable value SEtP Start program with setpoint at Controller Setpoint value
Communications Protocol	Prot	mbo MODBUS with odd parity mbE MODBUS with even parity mbn MODBUS with no parity
Communications Baud Rate	bAud	Selectable: 1200, 2400, 4800, 9600 Baud
Communications Address	Addr	Unique address assigned to the controller; in the range 1 - 255.

Continued overleaf⇒⇒⇒⇒⇒⇒

Parameter	Identifier	Description
Cold Junction Compensation Enable/Disable*	CJC	EnAb Enabled (default) d iSA Disabled
Controller Set-Up Mode Lock Code	LocC	Read Only display of current four-digit Set Up Mode Lock Code.
Program Define Mode Lock Code	LocP	Read Only display of current four-digit Program Define Mode Lock Code.

* Appears only if a thermocouple input is selected (see Hardware definition Code).

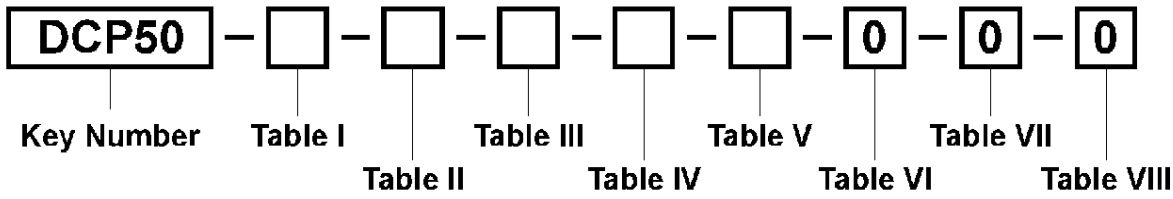
6.5 EXIT FROM CONFIGURATION MODE



NOTE: An automatic exit to Operator Mode will be made if, in Configuration Mode, there is no front panel key activity for two minutes.

The exit is made via the power-up self-test routines which include a lamp test.

APPENDIX A PRODUCT CODES



INSTRUCTIONS

Select the desired key number. The arrow to the right marks the selections available. Make one selection from each of Tables I through V using the column below the appropriate arrow. An asterisk denotes unrestricted availability. A letter denotes restricted availability.

Field	Meaning	Description	Selection	Availability
Key Number	DCP50 Controller Programmer	$\frac{1}{16}$-DIN Controller Programmer	DCP50	⇓
Table I	Output 1 (Control 1)	Relay SSR Drive Linear (4 - 20mA factory-set) Solid State	1 2 7 8	* * * *
Table II	Output 2 (Control 2 or Alarm 2)	Not fitted Relay SSR Drive Solid State	0 1 2 8	* * * *
	Output 2 (Control 2 only	Linear (4 - 20mA factory-set)	7	*
Table III	Output 3 (Alarm 1 only)	Not fitted Relay SSR Drive	0 1 2	* * *
	Output 3 (Retrans-mission output only)	Linear (4 - 20mA factory-set)	7	*
Table IV	Option 1	No option fitted Remote Run/Hold (Digital) Input RS485 MODBUS Communications	0 2 3	* * *
Table V	Option 2	90 - 264V AC Power Supply 24 - 48V DC Power Supply	1 2	* *

Additional Literature	Description	Ref.	Availability
Product Manual for Digital Controller Programmer	English	57-77-25-17	*

Upgrade Kits	Ref.	Availability
Relay Output PWA	46189010-501	*
SSR Output PWA	46189011-501	*
Linear Output PWA	46189012-501	*
RS485 Comms. PWA ‡	46189013-501	*
Remote Run/Hold PWA ‡	46189014-501	*

‡ Mutually exclusive

INPUT TYPE (User selectable) Input ranges available (selectable from front panel):

Thermocouple Inputs:

Type	Input Range	Dislayed Code	Type	Input Range	Displayed Code
R	0 - 1650°C	1127	J	32 - 1401°F	1420
R	32 - 3002°F	1128	T	-200 - 262°C	1525
S	0 - 1649°C	1227	T	-328 - 503°F	1526
S	32 - 3000°F	1228	T	0.0 - 260.6°C	1541
J	0.0 - 205.4°C	1415	T	32.0 - 501.0°F	1542
J	32.0 - 401.7°F	1416	K	-200 - 760°C	6726
J	0 - 450°C	1417	K	-328 - 1399°F	6727
J	32 - 842°F	1418	K	-200 - 1373°C	6709 *
J	0 - 761°C	1419 *	K	-328 - 2503°F	6710
L	0.0 - 205.7°C	1815	B	211 - 3315°F	1934
L	32.0 - 402.2°F	1816	B	100 - 1824°C	1938
L	0 - 450°C	1817	N	0 - 1399°C	5371
L	32 - 841°F	1818	N	32 - 2550°F	5324
L	0 - 762°C	1819	C/W5	0 - 2316°C	1541
L	32 - 1403°F	1820	C/W5	32 - 4201°F	1542

* Default

RTD Inputs:

Input Range	Displayed Code	Input Range	Displayed Code
0 - 800°C *	7220	0.0 - 100.9°C	2295
32 - 1471°F	7221	32.0 - 213.6°F	2296
32 - 571°F	2229	-200 - 206°C	2297
-100.9 - 100.0°C	2230	-328 - 402°F	2298
-149.7 - 211.9°F	2231	-100.9 - 537.3°C	7222
0 - 300°C	2251	-149.7 - 999.1°F	7223

* default

DC Inputs:

Input Range	Displayed Code	Input Range	Displayed Code
0 - 20mA	3413	0 - 5V	4445
4 - 20mA *	3414	1 - 5V	4434
0 - 50mV	4443	0 - 10V *	4446
10 - 50mV	4499	2 - 10V	4450

* Default

OUTPUT 1 TYPE (CONTROL 1)

Code	Description	Notes
1	Relay	Linear type factory-set to 4 - 20mA.
2	SSR Drive	
7	Solid State	
8	Linear (4 - 20mA)	

OUTPUT 2 TYPE (CONTROL 2 OR ALARM 2)

Code	Description	Notes
0	Not fitted	
1	Relay	Control 2 or Alarm 2
2	SSR Drive	Control 2 or Alarm 2
7	Linear (4 - 20mA factory-set)	Control 2 only
8	Solid state	Control 2 or Alarm 2

OUTPUT 3 TYPE (ALARM 1 OR RE-TRANSMITTED OUTPUT)

Code	Description	Notes
0	Not fitted	
1	Relay	Alarm 1 only
2	SSR Drive	Alarm 1 only
7	Linear (4 - 20mA factory-set)	Re-transmission output only

OPTION 1

Code	Description
0	No option fitted
2	Remote Run/Hold (Digital) Input
3	RS485 MODBUS Communications

OPTION 2

Code	Description
1	90 - 264V AC Power Supply
2	24 -m 48V DC Power Supply