

UDC 1000 Start Up Guide

- 1. Check Model Number.** See Appendix A
- 2. Verify Hardware Jumpers** for Input & Output. See Section (7.5 -7.6) in the Product Manual.
- 3. Install Unit.** See Wiring diagram in Section 3.3 in the Product Manual.
- 4. Set Hardware Configuration Codes.** See Section 6.2 in the Product Manual and sheet 2 attached.
- 5. Set Configuration Code Parameters.** See Section 6.3 in the Product Manual and sheet 3 attached.
- 6. Set the Setup Code Parameters.** See Section 4.1 - 4.2 in the Product Manual and sheet 4 & 5 attached.
- 7. Tune the Controller.** See Section 4.4 for Manual Tuning or See Section 2.3 - 2.6 in the Product Manual for Self-tuning.
- 8. Enter your control Setpoint.** See Section 2.2 in the Product Manual.
Display indication & Manual operation: See Section 2.3 - 2.6 in the Product Manual.

Hardware Configuration Codes

1. Remove the Controller from the case. While you are inserting the controller back into the case, hold down the “↑” and the SET UP” keys simultaneously. Keep these keys held in until “InPt” appears in the lower display. This is approximately 10 seconds:

2. Hold down the “↓ and the SET UP” keys:

1701
dEFn

* Use the Raise/Lower key to make changes.

* Once **Change is made**, Press the **MAN/AUTO** key to confirm.

* Press the SETUP key to Configure next Option.

* for Setting options see Page 6-1 in the Product Manual.

First (left most) <i>INPUT</i>	Second Digit <i>OUTPUT 1</i>	Third Digit <i>OUTPUT 2</i>	Fourth Digit <i>OUTPUT 3</i>
1. RTD Linear MV 2. Thermocouple 3. Linear DCmA 4. Linear DC V	1. Relay Output 2. SSR Output 3. DC Output 0-10 V 4. DC Output 0-20 mA 5. DC Output 0-5 V 7. DC Output 4-20 mA	0. Output 2 not installed. 1. Relay Output (Cont. or Alarm) 2. SSR Output (Cont.or Alarm) 3. DC Output 0-10 V (Cont. or Alarm) 4. DC Output 0-20 mA (Cont.or Alarm) 5. DC Output 0-5 V (Cont. or Alarm) 7. DC Output 4-20 mA (Cont. or Alarm)	0. Output 3 not installed. 1. Relay Output (Alarm only) 2. SSR Output (Alarm only) 3. DC Output 0-10 V (Recorder Output Only) 4. DC Output 0-20 mA (Recorder Output Only) 5. DC Output 0-5 V (Recorder Output Only) 7. DC Output 4-20 mA (Recorder Output Only)

Press the SETUP key

r485
OPtn

* This indicates the presence of the RS485 Communication card.

None RS485 Not Installed
r485 Communication Card Installed
 duAL Dual Setpoint

To Exit:

Hold down the “↓ and the SET UP” keys simultaneously.

Configuration Mode Parameters

Remove the Controller from the case. While you are inserting the controller back into the case, hold down the “↑“ and the SET UP” keys simultaneously. Keep these keys held in until “InPt” appears in the lower display. This is approximately 10 seconds:

* Use the Raise/Lower key to make changes.

* Once **Change is made**, Press the **MAN/AUTO** key to confirm.

* Press the SETUP key to Configure next Option.

* For Setting options see Page 6-3 in the Product Manual.

CODE	SETUP ITEM	INITIAL VALUE	SETTING	DEFINITIONS Product Manual
inPt	Input Code (See page A-2)	1419		Section A-2
Ctrl	Output 1 Control Action	rEu		Section 6.3.2
ALA1	Alarm 1 Type	P_hi		Section 6.3.3
ALA2	Alarm 2 Type	P_lo		Section 6.3.4
USER2	Output 2 Usage	ouE2		Section 6.3.5
USER3	Output 3 Usage	A1_d		Section 6.3.6
bAud	Baud Rate	4800		Section 6.3.7
PaR	Parity	none		
Addr	Communication Address	1		Section 6.3.8
CjC	Cold Junction Compensation	EnAb		Section 6.3.9
Loc	Lockout Code	10		Section 6.3.10

To Exit:

Hold down the “↑“ and the SET UP” keys simultaneously.

Set Up Configuration Codes

1. Hold down the “↑ and the SET UP” key simultaneously:
2. Set the “Uloc” to your Lockout code, and then press the Set Up key.

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- * Use the Raise/Lower key to make changes.
 - * Once **Change is made**, Press the **Set Up key to confirm**.
 - * Press the SETUP key to Configure next Option.
 - * For Setting options see Page 4-2 in the Product Manual.

CODE	SETUP ITEM	INITIAL VALUE	SETTING	DEFINITIONS Product Manual
FiLt	Digital Filter Constant	2.0 sec.		Section 4.2.1
OFFS	Process Variable Bias/Offset	0		Section 4.2.2
OuE1	Output Percent	Read Only		Section 4.2.3
OuE2	Output Percent 2	Read Only		Section 4.2.4
Pb1	Proportional Band	10.0		Section 4.2.5
Pb2	Proportional Band 2	10.0		Section 4.2.6
rSEC	Reset (Integral Time)	5min 00s		Section 4.2.7
rAtE	Rate (Derivative Time)	1min 15s		Section 4.2.8
OL	Overlap / Deadband	0		Section 4.2.9
biAS	Manual Reset	25		Section 4.2.10
diF1	On/Off Hysteresis	0.5		Section 4.2.11
diF2	On/Off Hysteresis 2	0.5		Section 4.2.11
diFF	Deadband	0.5		Section 4.2.11
Sphi	Setpoint High Limit	Range Max		Section 4.2.12
SPlo	Setpoint Low Limit	Range Min		Section 4.2.13
roPH	Recorder Output High Value	Range Max		Section 4.2.14
roPL	Recorder Output Low Value	Range Min		Section 4.2.15
OPhi	Output High Limit	100.0		Section 4.2.16
Ct1	Output 1 Cycle Time	32sec		Section 4.2.17
Ct2	Output 2 Cycle Time	32sec		Section 4.2.18
h_A1	Process High Alarm 1 Value	Range Max		Section 4.2.19
l_A1	Process Low Alarm 1 Value	Range Min		Section 4.2.20
b_A1	Band Alarm 1 Value	5		Section 4.2.21
d_A1	Deviation Alarm 1 Value	5		Section 4.2.22
h_A2	Process High Alarm 2 Value	Range Max		Section 4.2.23
l_A2	Process Low Alarm 2 Value	Range Min		Section 4.2.24
b_A2	Band Alarm 2 Value	5		Section 4.2.25
d_A2	Deviation Alarm 2 Value	5		Section 4.2.26
LAEn	Loop Alarm Enable	0		Section 4.2.27
LAti	Loop Alarm Time	99min 59s		Section 4.2.28
rPnt	Linear Decimal Point Location	1		Section 4.2.29
rhi	Linear High Range Value	1000		Section 4.2.30
rLo	Linear Low Range Value	0		Section 4.2.31
APE	Autotune Enable	0		Section 4.2.32
PoEn	Manual Control Enable	0		Section 4.2.33

Set Up Configuration Codes (cont.)

CODE	SETUP ITEM	INITIAL VALUE	SETTING	DEFINITIONS Product Manual
rPEn	Setpoint Ramp Enable	0		Section 4.2.34
SPSt	Setpoint Strategy	1		Section 4.2.35
CoEn	Communication Enable	1		Section 4.2.36
Loc	Lock Code Value	10		Section 4.2.37
Current Temp/SP	Process variable & Setpoint	Read Only		
SP	Setpoint	Read Only		Section 2.2
SPrP	Ramping Setpoint Value	Read Only		Section 2.2
rP	Setpoint Ramp Rate	Read Only		Section 2.3

To Exit:

Hold down the “↑“ and the SET UP” keys simultaneously.

INITIAL DISPLAYS

- * **Software Version**- Hold in SET UP key on power up.
- * **Sp -Setpoint** - Press SET UP until SP shows. Adjust SP to desired setting.
- * **SPrP-Ramping Setpoint Value**- Press SET UP until SPrP shows. (Read Only)
- * **rP - Setpoint Ramp Rate** - In units/hr, the rate at which the Setpoint will ramp from one value to another setpoint.
- * **P - Percent Output** - In Manual, the value to the right of the P is the percent output.
- * **ALSt -Alarm Status** - Pressing the SET UP key repeatedly until ALSt is shown in the lower display. The upper display will show the alarm status:

L	2	1
<u>Loop Alarm Status</u>	<u>Alarm 2 Status</u>	<u>Alarm 1 Status</u>
L = Active	2 = Active	1 = Active
Blank = Inactive	Blank = Inactive	Blank = Inactive

- * **CHH** -PV Overrange-
- * **CLL** -PV Overrange-
- * **OPEN** - Thermocouple Open

7.4 REPLACING THE CONTROLLER IN ITS HOUSING

To replace the Controller, simply align the CPU PCB and Power Supply PCB with their guides and connectors in the housing and slowly but firmly push the Controller into position.

CAUTION

Ensure that the instrument is correctly orientated. A stop will operate if an attempt is made to insert the instrument in the wrong orientation (e.g. upside-down). *This stop must not be over-ridden.*

7.5 SELECTION OF INPUT TYPE AND OUTPUT 1 TYPE

The selection of input type and Output 1 type is accomplished on link jumpers on the CPU PCB. The CPU PCB may be either of two forms: (a) for a relay or SSR Output 1 (see Figure 7-4) or for a DC Output 1 (see Figure 7-5).

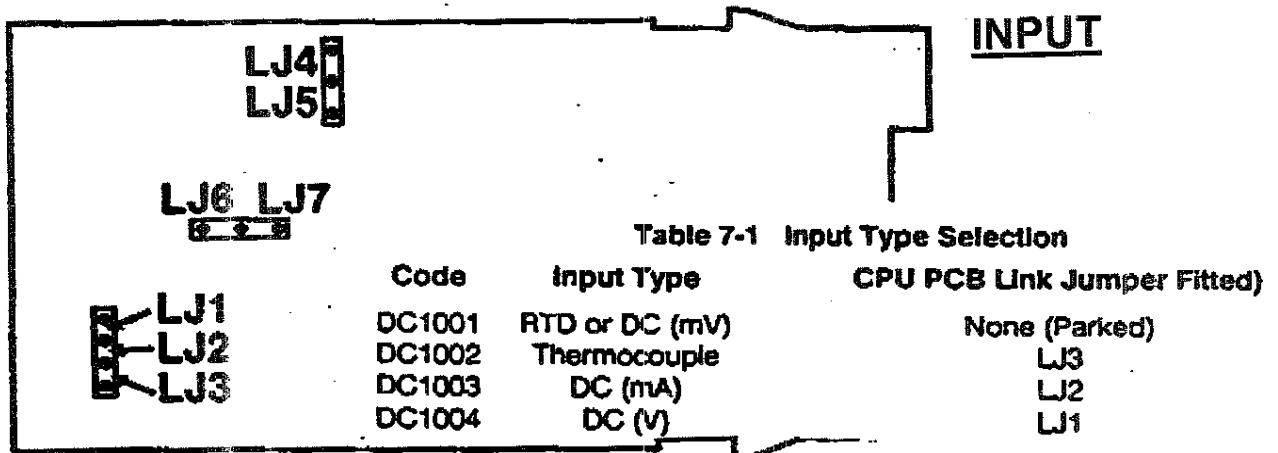


Figure 7-4 CPU PCB (Relay/SSR Output 1)

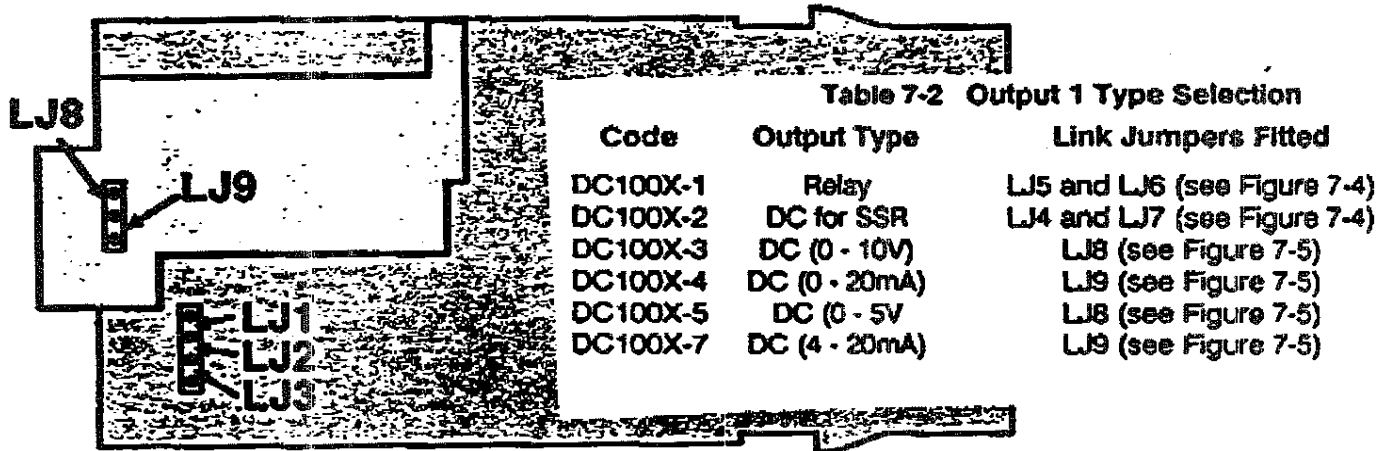


Figure 7-5 CPU PCB (DC Output 1)

2.4 NEW INPUT TYPES

The following input types are available:

For Thermocouple Inputs:

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

* Default state

For 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 state

For 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 state