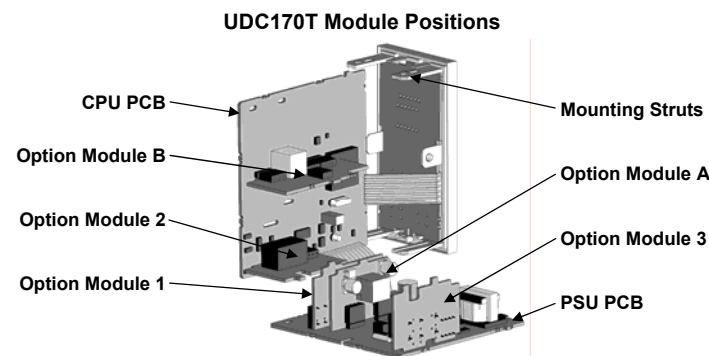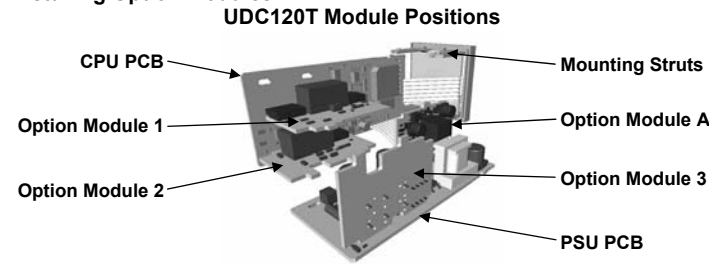## HONEYWELL UDC120T & UDC170T
Three Position Step Control Product Manual (51-52-25-145-EN)

⚠️ **CAUTION: Installation should be only performed by technically competent personnel. Local Regulations regarding electrical installation & safety must be observed.**

1. INSTALLATION

Models UDC120T and UDC170T have different case sizes (refer to section 10). Installation differences between the two models have been clearly shown.
Note: The functions described in sections 2 thru 9 are common to all models.
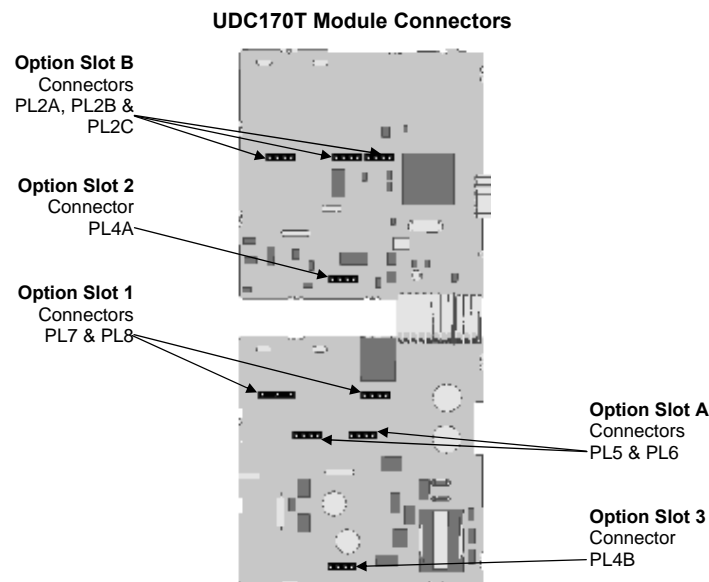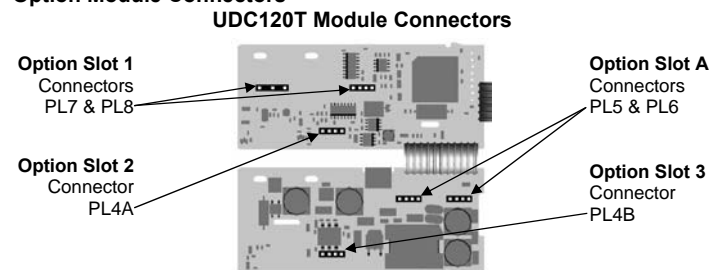
Installing Option Modules

UDC120T Module Positions

- CPU PCB
- Option Module 1
- Option Module 2
- Mounting Struts
- Option Module A
- Option Module 3
- PSU PCB

UDC170T Module Positions

- CPU PCB
- Option Module B
- Option Module 2
- Option Module 1
- Mounting Struts
- Option Module A
- Option Module 3
- PSU PCB

To access modules 1, A or B, first detach the PSU and CPU boards from the front by lifting first the upper, and then lower mounting struts. Gently separate the boards.
a. Plug the required option modules into the correct connectors, as shown below.
b. Locate the module tongues in the corresponding slot on the opposite board.
c. Hold the main boards together while relocating back on the mounting struts.
d. Replace the instrument by aligning the CPU and PSU boards with their guides in the housing, then slowly push the instrument back into position.
Note: Option modules are automatically detected at power up.

Option Module Connectors

UDC120T Module Connectors

- Option Slot 1 Connectors PL7 & PL8
- Option Slot 2 Connector PL4A
- Option Slot A Connectors PL5 & PL6
- Option Slot 3 Connector PL4B

UDC170T Module Connectors

- Option Slot B Connectors PL2A, PL2B & PL2C
- Option Slot 2 Connector PL4A
- Option Slot 1 Connectors PL7 & PL8
- Option Slot A Connectors PL5 & PL6
- Option Slot 3 Connector PL4B

Panel-Mounting
The mounting panel must be rigid, and may be up to 6.0mm (0.25inch) thick. Cut-out sizes are:
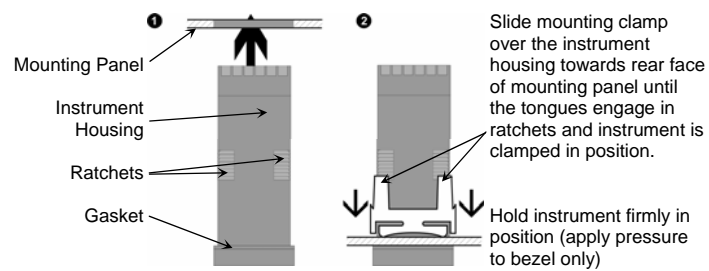
UDC120T	UDC170T
Dim A = 45mm	Dim A = 45mm
Dim B = 45mm	Dim B = 92mm
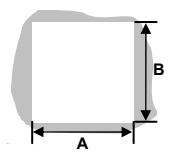
For n multiple instruments mounted side-by-side, cut-out dimension A is 48n-4mm

Tolerance +0.5, -0.0mm

Slide mounting clamp over the instrument housing towards rear face of mounting panel until the tongues engage in ratchets and instrument is clamped in position.

- Mounting Panel
- Instrument Housing
- Ratchets
- Gasket

Hold instrument firmly in position (apply pressure to bezel only)

⚠️ **CAUTION:** Do not remove the panel gasket; it is a seal against dust and moisture.

Rear Terminal Wiring
USE COPPER CONDUCTORS (EXCEPT FOR T/C INPUT)
Single Strand wire gauge: Max 1.2mm (18SWG)

UDC120T Wiring Diagram

UDC170T Wiring Diagram
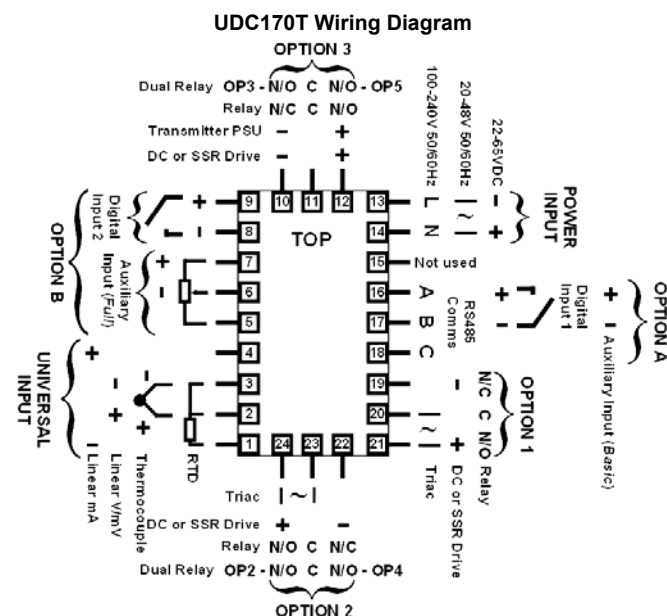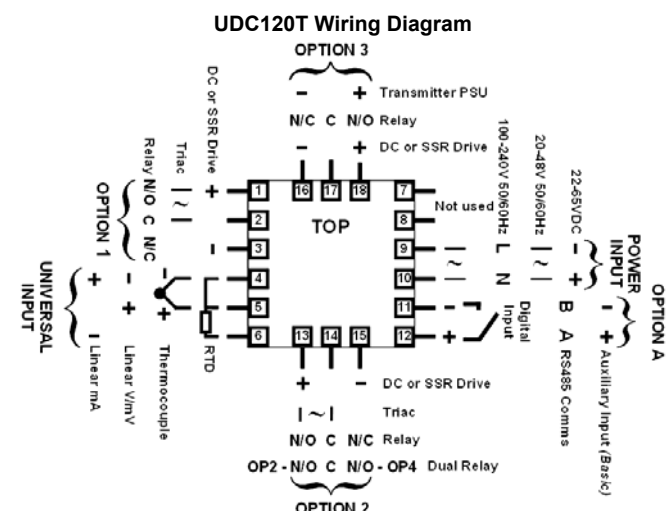
These diagrams show all possible option combinations. The actual connections required depends on the exact model and options fitted.

Note: This controller uses Three-Point Stepping Control. This requires two identical outputs (2 Relays, 2 Triacs, 2 SSR Drivers or 1 Dual Relay) for the valve Open & Close functions. See Output Usage 1-5 in Configuration Mode.

⚠️ **CAUTION:** Check information label on housing for correct operating voltage before connecting supply to Power Input
Fuse: 100 – 240V ac – 1amp anti-surge
24/48V ac/dc – 315mA anti-surge

Note: At first power-up the message ᴳᵒᵗᵃ ᶜᵒⁿᶠ is displayed, as described in section 7 of this manual. Access to other menus is denied until configuration mode is completed

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2. SELECT MODE

Select mode is used to access the configuration and operation menu functions. It can be accessed at any time by holding down **SETUP** and pressing **▲**.
In select mode, press **▲** or **▼** to choose the required mode, press **SETUP** to enter. An unlock code is required to prevent unauthorised entry to Configuration, & Setup modes. Press **▲** or **▼** to enter the unlock code, then press **SETUP** to proceed.

Mode	Upper Display	Lower Display	Description	Default Unlock Codes
Operator	OPtr	SLCt	Normal operation	None
Set Up	SEtP	SLCt	Tailor settings to the application	10
Configuration	ConF	SLCt	Configure the instrument for use	20
Product Info	inFo	SLCt	Check manufacturing information	None
Auto-Tuning	Atun	SLCt	Invoke Pre-Tune or Self-Tune	0

Note: The instrument will always return automatically to Operator mode if there is no key activity for 2 minutes.

3. CONFIGURATION MODE

First select Configuration mode from Select mode (refer to section 2).
Press **SETUP** to scroll through the parameters, then press **▲** or **▼** to set the required value. Press **Man Auto** to accept the change, otherwise parameter will revert to previous value. To exit from Configuration mode, hold down **SETUP** and press **▲**, to return to Select mode.
Note: Parameters displayed depends on how instrument has been configured. Refer to user guide (available from your supplier) for further details.
Parameters marked ** are repeated in Setup Mode.

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Input Range/Type	inPt	*See following table for possible codes*		JC

Code	Input Type & Range	Code	Input Type & Range	Code	Input Type & Range
bC	B: 100 - 1824 ºC	LC	L: 0.0 - 537.7 ºC	P24F	PtRh20% vs 40%: 32 - 3362 ºF
bF	B: 211 - 3315 ºF	LF	L: 32.0 - 999.9 ºF		
CC	C: 0 - 2320 ºC	nC	N: 0 - 1399 ºC	PtC	Pt100: –199 - 800 ºC
CF	C: 32 - 4208 ºF	nF	N: 32 - 2551 ºF	PtF	Pt100: –328 - 1472 ºF
JC	J: –200 - 1200 ºC	rC	R: 0 - 1759 ºC	Pt.C	Pt100: –128.8 - 537.7 ºC
JF	J: –328 - 2192 ºF	rF	R: 32 - 3198 ºF	Pt.F	Pt100: –199.9 - 999.9 ºF
J.C	J: –128.8 - 537.7 ºC	SC	S: 0 - 1762 ºC	0.20	0 - 20 mA DC
J.F	J: –199.9 - 999.9 ºF	SF	S: 32 - 3204 ºF	4.20	4 - 20 mA DC
HC	K: –240 - 1373 ºC	tC	T: –240 - 400 ºC	0.50	0 - 50 mV DC
HF	K: –400 - 2503 ºF	tF	T: –400 - 752 ºF	10.50	10 - 50 mV DC
H.C	K: –128.8 - 537.7 ºC	t.C	T: –128.8 - 400.0 ºC	0.5	0 - 5 V DC
H.F	K: –199.9 - 999.9 ºF	t.F	T: –199.9 - 752.0 ºF	1.5	1 - 5 V DC
LC	L: 0 - 762 ºC	P24C	PtRh20% vs. 40%: 0 - 1850 ºC	0.10	0 - 10 V DC
LF	L: 32 - 1403 ºF			2.10	2 - 10 V DC

Note: Decimal point shown in table indicates temperature resolution of 0.1°

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Scale Range Upper Limit	ruL		Scale Range Lower Limit +100 to Range Maximum	Range max (Lin=1000)
Scale Range Lower Limit	rLL		Range Minimum to Scale Range Upper Limit -100	Range min (Linear=0)
Decimal point position	dPoS		0=XXXX, 1=XXX.X, 2=XX.XX, 3=X.XXX (non-temperature ranges only)	1
Primary Output Control Action	Ctrl	rEu / d ir	Reverse Acting / Direct Acting	rEu
Motor Travel Time	tr		0.05 to 5.00 (5 secs to 5 mins 0 secs) Time Valve takes to move between its physical end stops (full Open to full Closed).	1.00
Alarm 1Type	ALA1	P_H1 / P_Lo / dE / bAnd / nonE	Process High Alarm / Process Low Alarm / Deviation Alarm / Band Alarm / No alarm	P_H1
High Alarm 1 value**	PhA1		Range Minimum to Range Maximum in display units	Range Max
Low Alarm 1 value**	PLA1			Range Min
Band Alarm 1 value**	bAL1		1 LSD to span from setpoint in display units	5
Dev. Alarm 1 value**	dAL1		+/- Span from setpoint in display units	5
Alarm 1 Hysteresis**	AHY1		1 LSD to full span in display units	1
Alarm 2 Type**	ALA2			P_Lo
High Alarm 2 value**	PhA2			Range Max
Low Alarm 2 value**	PLA2		Options as for alarm 1	Range Min
Band Alarm 2 value**	bAL2			5

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Dev. Alarm 2 Value**	dAL2			5
Alarm 2 Hysteresis**	AHY2	Options as for alarm 1		1
Loop Alarm	LAEn	d iSA (disabled) or EnAb (enabled)		d iSA
Alarm Inhibit	Inh i	nonE / ALA1 / ALA2 / both	No alarms Inhibited / Alarm 1 inhibited / Alarm 2 inhibited / Alarm 1 and alarm 2 inhibited	nonE
Output 1 Usage*	USE1	OPn / CLS / A1.d / A1.r / A2.d / A2.r / LP.d / LP.r / Or.d / Or.r / Ad.d / Ad.r / rEtS / rEtP	Valve Open / Valve Close / Alarm 1, Direct / Alarm 1, Reverse / Alarm 2, Direct / Alarm 2, Reverse / Loop Alarm, Direct / Loop Alarm, Reverse / Logical Alarm 1 OR 2, Direct / Logical Alarm 1 OR 2, Reverse / Logical Alarm 1 AND 2, Direct / Logical Alarm 1 AND 2, Reverse / Retransmit SP Output / Retransmit PV Output	OPn
Linear Output 1 Range	tYP1	0.5 / 0.10 / 2.10 / 0.20 / 4.20	0 to 5 V DC output / 0 to 10 V DC output / 2 to 10 V DC output / 0 to 20 mA DC output / 4 to 20 mA DC output	0.10
Retransmit Output 1 Scale maximum	ro1H		-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 1 Scale minimum	ro1L		-1999 to 9999 (display value at which output will be minimum)	Range min
Output 2 Usage*	USE2	As for output 1		Sec or AI2
Linear Output 2 Range	tYP2	As for output 1		0.10
Retransmit Output 2 Scale maximum	ro2H		-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 2 Scale minimum	ro2L		-1999 to 9999 (display value at which output will be minimum)	Range min
Output 3 Usage*	USE3	As for output 1		A1.d
Linear Output 3 Range	tYP3	As for output 1		0.10
Retransmit Output 3 Scale maximum	ro3H		-1999 to 9999 (display value at which output will be maximum)	Range max
Retransmit Output 3 Scale minimum	ro3L		-1999 to 9999 (display value at which output will be minimum)	Range min
Output 4 Usage*	USE4	As for output 1 except Retransmit of PV or SP is not possible.		OPn
Output 5 Usage*	USE5			A1.d
Display Strategy	d iSP	1, 2, 3, 4, 5, 6 or 7 (refer to section 8)		1
Serial Communications Protocol	Prot	Mbn / MbE / Mbo	Modbus with no parity / Modbus with Even Parity / Modbus with Odd Parity	Mbn
Serial Communications Bit Rate	bAud	1.2 / 2.4 / 4.8 / 9.6 / 19.2	1.2 kbps / 2.4 kbps / 4.8 kbps / 9.6 kbps / 19.2 kbps	4.8
Comms Address	Addr	1	1 to 255	1
Comms Write	CoEn	r_W / r_O	Read/Write / Read only	r_W
Auxiliary Input A Usage	A iPA	rSP / P in	Remote Setpoint (basic) / Valve Position Indication (basic)	P in
Auxiliary Input B Usage	A iPB	rSP / P in	Remote Setpoint (Full) / Valve Position Indication (Full)	P in
Digital Input 1 Usage	d iG1	d iS1 / d iAS	Setpoint 1 / Setpoint 2 select** / Automatic / Manual select	d iS1
Digital Input 2 Usage	d iG2	d iS1 / d iAS / d irS	Setpoint 1 / Setpoint 2 select** / Automatic / Manual select / Remote / Local setpoint select	d irS

Note: d iG2 has priority over d iG1 if both are configured for the same usage. If d iG1 or d iG2 = d iS1 the remote setpoint (RSP) input is disabled.

Parameter	Lower Display	Upper Display	Adjustment range & Description	Default Value
Remote Auxiliary Input Range	r inP	0.20	0 to 20 mA DC input	0_10
		4.20	4 to 20 mA DC input	
		0_10	0 to 10 V DC input	
		2_10	2 to 10 V DC input	
		0.5	0 to 5 V DC input	
		1.5	1 to 5 V DC input	
		100	0 to 100mV DC input	Available on full Aux. (Slot B) only
		Pot	Potentiometer (2KΩ minimum)	
RSP Upper Limit	r5Pu		-1999 to 9999. Remote SP for max. input	Range max
RSP Lower Limit	r5PL		-1999 to 9999. Remote SP for min. input	Range min
RSP Offset	r5Po		Constrained within Scale Range Upper & Scale Range Lower limits	0
Configuration Lock Code	CLoc		0 to 9999. Unlock Code for this mode	20

4. SETUP MODE

Note: Configuration must be completed before adjusting Setup parameters.
First select Setup mode from Select mode *(refer to section 2).* The MAN LED will light while in Setup mode. Press setup to scroll through the parameters, then press ▲ or ▼ to set the required value.
To exit from Setup mode, hold down setup and press ▲ to return to Select mode.
Note: Parameters displayed depends on how instrument has been configured.

Parameter	Lower Display	Upper Display Adjustment Range & Description	Default Value
Input Filter Time Constant	F iLt	0.0 (Off) or 0.5 to 100.0 secs.	2.0
Process Variable Offset	OFFS	±Span of controller	0
Primary Proportional Band	Pb_P	0.5 to 999.9 % of input span	10.0
Automatic Reset (Integral Time)	Ar5t	0.01 to 99.59 1 sec to 99 mins 59 secs	5.00
Rate (Derivative Time)	rAtE	0.00 to 99.59 0 sec to 99 mins 59 secs	0.00
Setpoint Upper Limit	5PuL	Current Setpoint to Range max	R/max
Setpoint Lower limit	5PLL	Range min to Current Setpoint	R/min
Minimum Motor On Time	ton	0.0 secs to (Motor Travel time / 10) secs. The minimum drive effort to begin moving valve.	0.0
Set Valve Open Position	PcuL	See instructions below to set the valve's fully open and closed positions.	Max. Aux.
Set Valve Closed Position	PcLL		Min. Aux.
Valve Open Limit	P iuL	P iLL +1 to 100. The maximum position valve will be driven to	0
Valve Closed Limit	P iLL	P iuL -1 to 100. The minimum position valve will be driven to	100
High Alarm 1 value	PhA1	Range Minimum to Range Maximum	R/max
Low Alarm 1 value	PLA1		R/min
Deviation Alarm 1 Value	dAL1	±Span from SP in display units	5
Band Alarm 1 value	bAL1	1 LSD to span from setpoint	5
Alarm 1 Hysteresis	AHY1	1 LSD to full span in display units	1
High Alarm 2 value	PhA2	Range Minimum to Range Maximum	R/max
Low Alarm 2 value	PLA2		R/min
Deviation Alarm 2 Value	dAL2	±Span from SP in display units	5
Band Alarm 2 value	bAL2	1 LSD to span from setpoint	5
Alarm 2 Hysteresis	AHY2	1 LSD to full span in display units	1
Auto Pre-tune	APt		
Auto/manual Control selection	PoEn	d iSA (disabled) or EnAb (enabled)	d iSA
Setpoint Select shown in Operator Mode	5SEn		
Setpoint ramp adjustment shown in Operator Mode	5Pr		
SP Ramp Rate Value	rP	1 to 9999 units/hour or Off (blank)	Off
Setpoint Value	5P	Scale range upper to lower limits. (when dual or remote setpoint options are used, 5P is replaced by 5P1 & 5P2 or L5P - or ≡ before the legend indicates the currently active SP)	Scale Range Minimum
Local Setpoint Value	_L5P		
Setpoint 1 Value	_5P1		
Setpoint 2 Value	_5P2		
Setup Lock Code	5Loc	0 to 9999	10

Setting the Valve Opened & Valve Closed Positions

With PcuL in the lower display press 🔘. The top display shows oPnG.
Press ▲ to drive open the valve until it reaches the "fully open" end stop.
Press 🔘. The top display will go *Blank* and the Auxiliary Input value will be measured and stored as the value equal to the fully open valve position.
Press setup The lower display shows PcLL. Press 🔘. The top display shows cLSG.
Press ▼ to drive closed the valve until it reaches the "fully closed" end stop.
Press 🔘. The top display will go *Blank* and the Auxiliary Input value will be measured and stored as the value equal to the fully closed valve position.

5. AUTOMATIC TUNING MODE

First select Automatic tuning mode from Select mode *(refer to section 2).*
Press setup to scroll through the modes, then press ▲ or ▼ to set the required value.
To exit from Automatic tuning mode, hold down setup and press ▲, to return to Select mode.
Pre-tune is a single-shot routine and is thus self-disengaging when complete.
If APt in Setup mode = EnAb, Pre-tune will attempt to run at every power up*.
Refer to the full user guide (available from your supplier) for details on controller tuning.

Parameter	Lower Display	Upper Display	Default Value
Pre-Tune	Ptun	On or OFF. *Pre-tune will not engage if setpoint is ramping, or the PV is less than 5% of input span from the setpoint . Indication remains OFF	OFF
Self-Tune	5tun		
Tune Lock	tLoc	0 to 9999	0

6. PRODUCT INFORMATION MODE

First select Product information mode from Select mode *(refer to section 2).*
Press setup to view each parameter. To exit from Product Information mode, hold down setup and press ▲ to return to Select mode.
Note: These parameters are all read only.

Parameter	Lower Display	Upper Display	Description
Input type	In_1		Universal input
Option 1 module type fitted	OPn1	nonE	No option fitted
		rLY	Relay output
		5Sr	SSR drive output
		tr i	Triac output
		L in	Linear DC voltage / current output
Option 2 module type fitted	OPn2	nonE	No option fitted
		drLY	Dual Relay output
		rLY	Relay output
		5Sr	SSR drive output
		tr i	Triac output
		L in	Linear DC voltage / current output
		dc24	Transmitter power supply
Option 3 module type fitted	OPn3		As Option 2
Auxiliary Option A module type fitted	OPnA	nonE	No option fitted
		r485	RS485 communications
		d iG i	Digital Input*
		r5P i	Auxiliary Input (basic)*
Auxiliary Option B module type fitted	OPnb	nonE	No option fitted
		r5P i	Auxiliary Input (full) and Digital Input 2*
Firmware type	FLu		Value displayed is firmware type number
Firmware issue	155		Value displayed is firmware issue number
Product Revision Level	PrL		Value displayed is Product Revision level
Date of manufacture	dOr7		Manufacturing date code (mmyy)
Serial number 1	5n1		First four digits of serial number
Serial number 2	5n2		Middle four digits of serial number
Serial number 3	5n3		Last four digits of serial number

7. MESSAGES & ERROR INDICATIONS

These messages indicate that an error has occurred, or there is a problem with the process variable input connection or signal.
Caution: Do not continue with the process until the issue is resolved.

Parameter	Upper Display	Lower Display	Description
Instrument parameters are in default conditions	Goto	ConF	Configuration & Setup required. This screen is seen at first turn on, or if hardware configuration has been changed. Press setup to enter the Configuration Mode, next press ▲ or ▼ to enter the unlock code then, then press setup to proceed
Input Over Range	CHHJ	Normal	Process variable input > 5% over-range
Input Under Range	CLLJ	Normal	Process variable input > 5% under-range
Input Sensor Break	OPEN	Normal	Break detected in process variable input sensor or wiring.
Aux. Over Range	Normal	CHHJ **	Auxiliary input over-range	** also seen wherever Aux value would be displayed
Aux. Under Range	Normal	CLLJ **	Auxiliary input under-range
Auxiliary Input Break	Normal	OPEN **	Break detected in Auxiliary input signal
Option 1 Error	OPn1		Option 1 module fault
Option 2 Error	OPn2		Option 2 module fault
Option 3 Error	OPn3	Err	Option 3 module fault
Option A Error	OPnA		Option A fault or Aux fitted in both A & B
Option B Error	OPnb		Option B module fault

8. OPERATOR MODE

This mode is entered at power on, or accessed from Select mode *(see section 2).*
Note: All Configuration mode and Setup mode parameters must be set as required before starting normal operations.
Press setup to scroll through the parameters, then press ▲ or ▼ to set the required value.
Note: All Operator Mode parameters in Display strategy 6 are read only (see d i5P in configuration mode), they can only be adjusted via Setup mode.

Upper Display	Lower Display	Display Strategy and When Visible	Description
PV Value	Active SP Value	1 & 2 (initial screen)	PV and target value of selected SP *Local Setpoints are adjustable in Strategy 2*
PV Value	Actual SP Value	3 & 6 (initial screen)	PV and actual value of selected SP (e.g. ramping SP value). *Read only*
PV Value	(Blank)	4 (initial screen)	Process variable value *Read only*
Active SP Value	(Blank)	5 (initial screen)	Target value of selected setpoint only. *Read only*
PV Value	Auxiliary Input Value	7 (initial screen)	PV and Valve Position or Flow *Read only*
SP Value	5P	1 – 3 & 4 - 7 if digital input is not d i51 and RSP not configured	Target value of SP *Adjustable except in Strategy 6*
SP1 Value	_5P1	Digital input = d i51. - lit if active SP = SP1	Target value of SP1 *Adjustable except in Strategy 6*
SP2 Value	_5P2	Digital input = d i51. - lit if active SP = SP2	Target value of SP2 *Adjustable except in Strategy 6*
Local SP Value	_L5P	RSP fitted. - or ≡ lit if the active SP = L5P	Target value of local setpoint *Adjustable except in Strategy 6*
Remote SP Value	_r5P	RSP fitted. - or ≡ lit if the active SP = r5P	Target value of remote setpoint *Read only*
d iG i, L5P or r5P	5P5	RSP is fitted, digital input is not d i51 and 55En is enabled in Setup mode	Selects local/remote active setpoint L5P = local SP, r5P = remote SP d iG i = selection via digital input (if configured). *Note: selecting L5P or r5P will override digital input, active SP indication changes to ≡ Adjustable except in Strategy 6*
Actual SP Value	5P-P	rP is not blank	Actual (ramping) value of selected SP. *Read only*
Ramp Rate	rP	5Pr enabled in Setup mode	SP ramping rate, in units per hour *Adjustable except in Strategy 6*
Active Alarm Status	AL5t	When one or more alarms are active. ALM indicator will also flash	Alarm 2 active — L2 1 — Alarm 1 active — Loop Alarm active

Manual Valve Control

If PoEn is set to EnAb in Setup mode, manual control can be selected/de-selected by pressing the 🔘 key in Operator mode, via serial communications, or by changing the status of a digital input if d iG i or d iG2 has been configured for d iA5 in Configuration mode.
While in Manual Control mode, the 🔘 indicator will flash and the lower display will show r7An. If Valve Position Indication is configured, the lower display will show Pxxx instead of r7An, where xxx is the valve position as read by the Auxiliary Input. P0 means the valve is fully closed, P100 means the valve is fully opened.

Press ▲ to move the valve mother in the "open" direction or ▼ to move the valve mother in the "close" direction. Keep pressing the key until the desired valve position is achieved

9. SERIAL COMMUNICATIONS

Refer to the full user guide (available from your supplier) for details.

10. SPECIFICATIONS

UNIVERSAL INPUT
Thermocouple Calibration: ±0.1% of full range, ±1LSD (±1°C for Thermocouple CJC). BS4937, NBS125 & IEC584.
PT100 Calibration: ±0.1% of full range, ±1LSD. BS1904 & DIN43760 (0.00385Ω/Ω/°C).
DC Calibration: ±0.1% of full range, ±1LSD.
Sampling Rate: 4 per second.
Impedance: >10MΩ resistive, except DC mA (5Ω) and V (47kΩ).
Sensor Break Detection: Thermocouple, RTD, 4 to 20 mA, 2 to 10V and 1 to 5V ranges only. "Close Valve" outputs turn ON.
Isolation: Isolated from all outputs (except SSR driver).
Universal input must not be connected to operator accessible circuits if relay outputs are connected to a hazardous voltage source. Supplementary insulation or input grounding would then be required.

AUXILIARY INPUT
Calibration: ±0.25% of input range ±1 LSD.
Sampling Rate: 4 per second.
Sensor Break Detection: 4 to 20 mA, 2 to 10V and 1 to 5V ranges only. *Valve control outputs turn off if RSP is the active SP.*
Isolation: Slot A - Basic isolation, Slot B - Reinforced safety isolation from other inputs and outputs.

DIGITAL INPUTS
Volt-free(or TTL): Open(2 to 24VDC) = SP1, Local SP or Auto Mode, Closed(<0.8VDC) = SP2, Remote SP or Manual Mode.
Isolation: Reinforced safety isolation from inputs and other outputs.

OUTPUTS
Relay
Contact Type & Rating: Single pole double throw (SPDT); 2A resistive. 120VAC max. (240V for alarm or indirect switching of valves).
Lifetime: >500,000 operations at rated voltage/current.
Isolation: Basic Isolation from universal input and SSR outputs.
Dual Relay
Contact Type & Rating: 2 x single pole single throw, with shared common; 2A resistive. 120VAC max. (240V for alarm or indirect switching of valves).
Lifetime: >200,000 operations at rated voltage/current.
Isolation: Reinforced safety isolation from inputs and other outputs.
SSR Driver
Drive Capability: SSR drive voltage >10V into 500Ω min.
Isolation: Not isolated from universal input or other SSR driver outputs.
Triac
Operating Voltage: 20 to 140Vrms (280V max. for alarm or indirect switching of valves) @ 47 to 63Hz.
Current Rating: 0.01 to 1A (full cycle rms on-state @ 25°C); derates linearly above 40°C to 0.5A @ 80°C.
Isolation: Reinforced safety isolation from inputs and other outputs.
DC Linear
Resolution: 8 bits in 250mS (10 bits in 1s typical, >10 bits in >1s typical).
Isolation: Reinforced safety isolation from inputs and other outputs.
Transmitter PSU
Power Rating: 19 to 28V DC (24V nominal) into 910Ω minimum resistance.
Isolation: Reinforced safety isolation from inputs and other outputs.

SERIAL COMMUNICATIONS
Physical: RS485, at 1200, 2400, 4800, 9600 or 19200 bps.
Protocol: Modbus RTU.
Isolation: Reinforced safety isolation from all inputs and outputs.

OPERATING CONDITIONS (FOR INDOOR USE)
Ambient Temperature: 0°C to 55°C (Operating), –20°C to 80°C (Storage).
Relative Humidity: 20% to 95% non-condensing.
Supply Voltage and Power: 100 to 240VAC ±10%, 50/60Hz, 7.5VA (for mains powered versions), or 20 to 48VAC 50/60Hz 7.5VA or 22 to 65VDC 5W (for low voltage versions).

ENVIRONMENTAL
Standards: CE, UL, ULC.
EMI: Complies with EN61326 (Susceptibility & Emissions).
Safety Considerations: Complies with EN61010-1 & UL3121. Pollution Degree 2, Installation Category II.
Front Panel Sealing: To IP66 (IP20 behind the panel).

PHYSICAL
Front Bezel Size: UDC120T = 48 x 48mm, UDC170T = 96 x 48mm,
Depth Behind Panel: UDC120T = 110mm, UDC170T = 100mm.
Weight: 0.21kg maximum.

Honeywell