Dynisco

From lab to production,
providing a window into the process

Universal Input Indicator Start-up Guide

Operating Manual

Contents

1. Setting up a unit straight out of the box

1.1. Entry into Configuration mode

When the unit is first powered on, the message goto Conf, will appear on the screen. This is the first step to set up the unit for the functionality required by the user. To enter configuration mode press the ↻ key, this will then prompt you to enter an unlock code. ULoc will appear followed by 0. To enter into the configuration mode the user must enter the correct unlock code using the △ and ▽ keys.

The default unlock code is 20, if you do not enter the correct code the unit will revert back to the previous screen asking you to enter the code again.

If you forget any of the unlock code there is a hidden read only menu for them. To enter this mode you must power the unit down, whilst powered down you must press the ↻ and △, keeping them pressed whilst repowering the unit for 10-15 seconds. You will then enter a read only loc code view.

If not from first power up Configuration is entered from Select Mode

Hold down ↻ and △ press to force the controller into the Select Mode.

The SLCT legend is shown for 1 second, followed by the legend for the current mode.

Press △ or ▽ to navigate to the Configuration Mode option, then press ↻ .

Note:

Set LED SET *. This flashes in Configuration Mode.*

1.2. Scrolling through Parameters and Values

Press ↻ to scroll through the parameters. While this key is pressed, and up to 1 second after, the parameter legend is shown, followed by the current parameter value.

Note:

Only parameters that are applicable to the hardware options chosen will be displayed.

1.3. Changing Parameter Values

Press ↻ to navigate to the required parameter, then press △ or ▽ to set the value as required.

Once the desired value is set, press to display YES? , press △ within 10 seconds, accept the change, otherwise parameter will revert to previous value.

Or

Press ↻ to reject the change and to move onto the next parameter.

Hold down ↻ and press △ to return to Select Mode.

Note:

If there is no key activity for 2 minutes the instrument returns to the operator mode.

1. 1480 Configuration Mode Parameters

Parameter	Legend *for 1 sec followed by →*	Set Value	Adjustment Range & Description	Default Value	When Visible	Units Display
Mode Default	dFnn	d iSA	Enable or disable default of all parameters in configuration mode	d iSA	Always	
		EnAb				
Input type and Range	InPt	St_G	Strain Guage: -10 to 50mV	St_G	Always	°
		bC	B type: 100 to 1824 °C			
		bF	B type: 211 to 3315 °F			
		CC	C type: 0 to 2320 °C			
		CF	C type: 32 to 4208 °F			
		JC	J type: -200 to 1200 °C			
		JF	J type: -328 to 2192 °F			
		J.C	J type: -128.8 to 537.7 °C with decimal point			
		J.F	J type: -199.9 to 999.9 °F with decimal point			
		KC	K type: -240 to 1373 °C			
		KF	K type: -400 to 2503 °F			
		K.C	K type: -128.8 to 537.7 °C with decimal point			
		K.F	K type: -199.9 to 999.9 °F with decimal point			
		0_20	0 to 20mA DC			
		4_20	4 to 20mA DC			
		0_50	0 to 50mV DC			
		10.50	10 to 50mV DC			
		0_5	0 to 5V DC			
		1_5	1 to 5V DC			
		0_10	0 to 10V DC			
		2_10	2 to 10V DC			
Scale Range Upper Limit	rUL	Scale Range Lower Limit +100 to Range Max		Strain Gauge/ Linear = 1000 = max range	Always	u

Scale Range Lower Limit	rLL	Range Min. to Scale range Upper Limit - 100		Strain Gauge/ Linear = 0 = min range	Always	L
Decimal point position	dPoS	0	Decimal point position in non-temperature ranges. 0 = XXXX 1 = XXX.X 2 = XX.XX 3 = X.XXX	1	InPt = mV, V or mA	P
		1				
		2				
		3				
Linear Range Engineering Units Display	L nU	nonE	nonE (Blank), C = °C or F = °F For use where linear inputs represent temperature.	nonE	InPt = mV, V or mA	
		C				°C
		F				°F
Multi-Point Scaling	MPS	EnAb	d iSA disabled or EnAb enabled	d iSA	Always	S
		d iSA				
Alarm 1Type	ALA 1	P_H 1	Process High Alarm	P_H 1	Always	1
		P_Lo	Process Low Alarm			
		nonE	No alarm			
Process High Alarm 1 value"	PHA 1	Range Min. to Range Max. *Parameter repeated in Setup Mode*		Range Max.	ALA 1 = P_H 1	Alr alarm 1 only or 1
Process Low Alarm 1 value"	PLA 1	Range Min. to Range Max *Parameter repeated in Setup Mode*		Range Min.	ALA 1 = P_Lo	
Alarm 1 Hysteresis"	HYS 1	1 LSD to 100% of span (in display units) on "safe" side of alarm point. *Parameter repeated in Setup Mode*		1	ALA 1 is not nonE	-
Alarm 2 Type	ALA2	As for alarm 1 type		nonE	Always	2
Process High Alarm 2 value"	PHA2	Range Min. to Range Max. *Parameter repeated in Setup Mode*		Range Max.	ALA2 = P_H 1	2
Process Low Alarm 2 value"	PLA2	Range Min. to Range Max. *Parameter repeated in Setup Mode*		Range Min.	ALA2 = P_Lo	
Alarm 2 Hysteresis"	HYS2	1 LSD to 100% of span (in display units) on "safe" side of alarm point. *Parameter repeated in Setup Mode*		1	ALA2 is not nonE	=
Output 1 Usage	USE 1	rEtP	Retransmit PV Output	rEtP if OPn 1 is linear output type	OPn 1 is not linear or empty	1
		dc 10	0 to 10VDC (adjustable) transmitter power supply"			

Output 1 PV Retransmit Type	tYP 1	0_5	0 to 5 V DC output 1	0_10	USE 1 - rEtP	1
		0_10	0 to 10 V DC output			
		2_10	2 to 10 V DC output			
		0_20	0 to 20 mA DC output			
		4_20	4 to 20 mA DC output			
Retransmit Output 1 Scale maximum	ro 1H	-1999 to 9999 Display value where output is maximum		Range max	USE 1 - rEtP	H
Retransmit Output 1 Scale minimum	ro 1L	-1999 to 9999 Display value where output is minimum		Range min	USE 1 - rEtP	L
Output 1 TxPSU voltage level	PSU 1	0 to 10VDC transmitter power supply output in 0.1V steps*		10.0	USE 1 - dc 10	1
Output 2 Usage	USE2	A 1nd	Alarm 1, direct, non-latching	A 1nd	OPn2 is not empty	2
		A 1nr	Alarm 1, reverse, non-latching			
		A 1Ld	Alarm 1, direct, latching			
		A 1Lr	Alarm 1, reverse, latching			
		A2nd	Alarm 2, direct, non-latching			
		A2nr	Alarm 2, reverse, non-latching			
		A2Ld	Alarm 2, direct, latching			
		A2Lr	Alarm 2, reverse, latching			
		0 12d	Logical Alarm 1 OR 2, direct			
		0 12r	Logical Alarm 1 OR 2, reverse			
		AnYd	Any active alarm, direct			
		AnYr	Any active alarm, reverse			
Output 3 Usage	USE3	As for Output 2 usage		A2nd	OPn3 is not empty	3
Display Strategy	d 1SP	0, 1, 2, 3, 4 or 6 *(see Operator Mode for details)*		0	Always	d
Logic Input Usage	d 1G 1	rrLY	Reset latched relay(s)	rrLY	OPnA - d 1G 1	1
		tArE	Initiate Tare (zero display)			
		rPu	Reset min/max PV values			
		rE	Reset Alarm 1 elapsed time			
		rPuE	Reset Alarm 1 elapsed time & min/max PV values			

Logic Input State	d iGd	CLS	Normally closed contact action	CLS	CLS	
		OPn	Normally open contact action			
Configuration Mode Lock Code	CLoc	0 to 9999		20	Always	C

Note:
**Linear Outputs can be configured to provide an adjustable 0.0 to 10.0VDC transmitter power supply for external devices.*

2. Calibration Mode

2.1. Entry to Configuration mode

Note: *Configuration mode must be completed before adjusting Calibration parameters.*

First select Calibration mode from Select mode.

Hold down ↺ and press △ to force the controller into the Select Mode.
The SLCt legend is shown for 1 second, followed by the legend for the current mode.
Press △ or ▽ to navigate to the Calibration Mode option, then press ↺.
You then need to enter the unlock code using the △ or ▽ keys, then press ↺ to enter the mode.
Press ↺ to scroll through the parameters (while this key is pressed, and for 1 sec after, the parameter legend is shown, then the current value). Press △ or ▽ to change the value.
To exit from Calibration mode, hold down ↺ and press △ to return to Select mode.

Note:

Entry into Calibration Mode is security-protected by the Calibration Mode lock code. Default value is IO.

Note: Calibration mode will only be displayed if input type is set to ST_G

Parameter	Legend for 1 sec followed by →	Set Value	Adjustment Range & Description	Default Value	When Visible	Units Display
Mode Default	dFLT	d iSA	Enable or disable default of all parameters in configuration mode	d iSA	Always	
		EnAb				
Shunt Resistor	Shnt	EnAb	Enables or disables use of the Shunt Resistor (should be enabled with Dynisco probes)	St_G	Always	r
		d iSA				
Calibration Resistor Value	rCAL	80 .0	40% to 100% (appears only when Shnt is EnAb)	80 .0	If Shunt is Enabled	
Start Low Calibration	C .LO	0 .0	Press △ and ▽ together to start calibration	0 .0	Always	

Parameter	Legend *for 1 sec followed by* →	Set Value	Adjustment Range & Description	Default Value	When Visible	Units Display
Start High Calibration	C.H.	1000	Press △ and ▽ together to start calibration	1000	Always	
Calibration Lock code	rLoc	10	Can set the lock code from 0 to 9999	10	Always	

When the calibration procedure begins ---- appears on the screen. Once Calibration is complete donE appears on screen. If there are any Faults with the calibration an error message will appear either Er_r or Er_C.

Er_C means the low calibration will fail if the offset is less than -10mV or greater than +10mV. This signifies potential faulty sensors or the high calibration will fail if the count value is less than +20mV or greater than +50mV. This signifies potential faulty sensors

Er_r means the high calibration will fail if the mV value is within 10mV of the low calibration value. This is a potential RCAL failure.

Setup Mode

This mode is normally selected only after Configuration Mode has been completed, or is used when a change to the process set up is required. These parameters must be set as required before attempting to use the indicator in an application.

3 Setup Mode

3.1 Entry into the Setup Mode

Setup Mode is entered from Select Mode

Hold down ↻ and press △ to force the controller into the Select Mode.

The SLCt legend is shown for 1 second, followed by the legend for the current mode.

Press △ or ▽ to navigate to the Setup Mode option, then press ↻ .

Note:

Entry into Setup Mode is security-protected by the Setup Mode lock code. Default value is IO.

Note:

Set LED SET. *This is on in Setup Mode.*

3.2 Scrolling through Parameters and Values

Press ↻ to scroll through the parameters. While this key is pressed, and up to 1 second after, the parameter legend is shown, followed by the current parameter value.

3.3 Changing Parameter Values

Press ↻ to select the required parameter, then press or to set the value as required. Once the displayed value is changed, it is effective is immediately. No confirmation of the change is required.

Press ↻ to move onto the next parameter.

Hold down ↻ and press △ to return to Select Mode.

Note:

If there is no key activity for two minutes the instrument returns to the operator mode.

Parameter	Legend for 1 sec followed by →	Set Value	Adjustment Range & Description	Default Value	When Visible	Units Display
Default Mode	dFnn	d iSA EnAb	Enables or Disables Defaulting of Values within Mode	d iSA	Always	
Input Filter Time constant	F iLt	OFF, 0.5 to 100.0 seconds in 0.5 sec increments		0.5	Always	t
Alarm Filter time Constant	ALFL	OFF, 0.5 to 100.0 seconds in 0.5 sec increments		0.0	Always	t
Input fail Mode	InPF	LoW H iGh	When input fails PV should go Low or High scale reading	H iGh	Always	
Process Variable Offset	OFFS	±Instrument Span		0	Always	o
Raw Process Variable value	S iG	The un-scaled value of the input signal in mV, V or mA DC as defined by the input range and type. Resolution to 1 decimal place (e.g. 4.0 to 20.0mA). *This parameter is Read Only*		InPt - mV, V or mA		blank
Process High Alarm 1 value*	PhA1	Range Min. to Range Max. *Repeat of Configuration Mode parameter*		Range Max.	ALA1 - P_H,	Alr alarm 1 only or I
Process Low Alarm 1 value*	PLA1	Range Min. to Range Max *Repeat of Configuration Mode parameter*		Range Min.	ALA1 - P_Lo	
Alarm 1 Hysteresis*	AHY1	1 LSD to 100% of span (in display units) on "safe" side of alarm point. *Repeat of Configuration Mode parameter*		1	ALA1 is not nonE	-
Process High Alarm 2 value*	PhA2	Range Min. to Range Max. *Repeat of Configuration Mode parameter*		Range Max.	ALA2 - P_H,	2
Process Low Alarm 2 value*	PLA2	Range Min. to Range Max. *Repeat of Configuration Mode parameter*		Range Min.	ALA2 - P_Lo	
Alarm 2 Hysteresis*	AHY2	1 LSD to 100% of span (in display units) on "safe" side of alarm point. *Repeat of Configuration Mode parameter*		1	ALA2 is not nonE	=
Scaling Breakpoint 1	ScA1	Multi-point scaling breakpoint 1 value, adjustable from 0 to 100 in % of span		100	nnPS = EnAb	1
Display Value 1	d iS1	Value to be displayed at multi-point scaling breakpoint 1, in display units		Range Max.		
Scaling Breakpoint 2	ScA2	Multi-point scaling breakpoint 2, adjustable up to 100% of span. Must be >ScA1 value			nnPS = EnAb	2
Display Value 2	d iS2	Value to be displayed at Multi-point scaling breakpoint 2, in display units				
Scaling Breakpoint 3	ScA3	Multi-point scaling breakpoint 3, adjustable up to 100% of span. Must be >ScA2 value			nnPS = EnAb	3
Display Value 3	d iS3	Value to be displayed at Multi-point scaling breakpoint 3, in display units				

Parameter	Legend for 1 sec followed by →	Set Value	Adjustment Range & Description	Default Value	When Visible	Units Display
Scaling Breakpoint 4	ScA4	Multi-point scaling breakpoint 4, adjustable up to 100% of span. Must be >ScA3 value			ᑎᑎPS = EnAb	4
Display Value 4	d iS4	Value to be displayed at Multi-point scaling breakpoint 4, in display units				
Scaling Breakpoint 5	ScA5	Multi-point scaling breakpoint 5, adjustable up to 100% of span. Must be >ScA4 value			ᑎᑎPS = EnAb	5
Display Value 5	d iS5	Value to be displayed at Multi-point scaling breakpoint 5, in display units				
Scaling Breakpoint 6	ScA6	Multi-point scaling breakpoint 6, adjustable up to 100% of span. Must be >ScA5 value			ᑎᑎPS = EnAb	6
Display Value 6	d iS6	Value to be displayed at Multi-point scaling breakpoint 6, in display units				
Scaling Breakpoint 7	ScA7	Multi-point scaling breakpoint 7, adjustable up to 100% of span. Must be >ScA6 value			ᑎᑎPS = EnAb	7
Display Value 7	d iS7	Value to be displayed at Multi-point scaling breakpoint 7, in display units				
Scaling Breakpoint 8	ScA8	Multi-point scaling breakpoint 8, adjustable up to 100% of span. Must be >ScA7 value			ᑎᑎPS = EnAb	8
Display Value 8	d iS8	Value to be displayed at Multi-point scaling breakpoint 8, in display units				
Scaling Breakpoint 9	ScA9	Multi-point scaling breakpoint 9, adjustable up to 100% of span. Must be >ScA8 value			ᑎᑎPS = EnAb	9
Display Value 9	d iS9	Value to be displayed at Multi-point scaling breakpoint 9, in display units				
Tare Function	tArE	EnAb d iSA	Enables or disables the input auto-zero Tare feature	d iSA	Always	r
Set-up Lock Code	SLoc	0 to 9999		10	Always	5
**Operator mode displays follows.						

Note:
*Alarm parameters marked * are repeated in Configuration Mode.*
Note:
***Once the complete list of Set Up Mode parameters has been displayed, the Operator Mode displays are shown without exiting from Set Up Mode.*

4 Operator Mode

This is the mode used during normal operation of the instrument. It can be accessed from Select Mode, and is the usual mode entered at power-up. The available displays are dependent upon the setting of the Display Strategy parameter in Configuration Mode.
WARNING:
IN NORMAL OPERATION, THE OPERATOR MUST NOT REMOVE THE INSTRUMENT FROM ITS HOUSING OR HAVE UNRESTRICTED ACCESS TO THE REAR TERMINALS, AS THIS WOULD PROVIDE POTENTIAL CONTACT WITH HAZARDOUS LIVE PARTS.

CAUTION:

Set all Configuration Mode parameters and Set Up Mode parameters as required before starting normal operations.

4.1 Entry into Operator Mode

This is the normal operating mode of the instrument from power-up. It can also be accessed from any other mode via Select Mode as follows:

Hold down ↺ and press △ to force the controller into the Select Mode.
The SLCt legend is shown for 1 second, followed by the legend for the current mode.
Press △ or ▽ to navigate to the Operator Mode option, then press ↺.

4.2 Scrolling through Parameters and Values

Press ↺ to scroll through the parameters. While this key is pressed, and up to 1 second after, the parameter legend is shown, followed by the current parameter value.

4.3 Changing Parameter Values

Press ↺ to select the required parameter, then press △ or ▽ to set the value as required.
Once the displayed value is changed, it is effective is immediately. No confirmation of the change is required.
Press ↺ to move onto the next parameter.

Note:

The operator can freely view the parameters in this mode, but alteration depends on the Display strategy setting in Configuration Mode. All parameters in Display strategy 6 are read only, and can only be adjusted via Setup mode.

Parameter	Legend (for 1 sec followed by →)	Set Value	Adjustment Range & Description	Display Strategy & When Visible	Units Display
Process Variable	Proc		Current Process Variable value. Read only, but latched relays can be reset (*see below*)	Always	C, F or blank
Maximum PV Value	MAX		Maximum displayed value (inc CHHC or OPEN) since MAX was last reset. Max LED ▲ is lit on model P8010	Strategies 0, 1, 3, 4, & 6	C, F or blank
Minimum PV Value	MIN		Minimum displayed value (inc CLLC or OPEN) since MIN was last reset. Min LED ▼ is lit on model P8010	Strategies 0, 1, 3, 4, & 6	C, F or blank
Alarm 1 Active Time	Et 1		Accumulated time alarm 1 has been active since Et 1 was last reset. Format *mm.ss to 99.59 then mmm.s (10 sec increments)* Shows CHHC if >999.9	Strategies 0, 4 & 6 If alarm 1 configured.	E
Process Alarm 1 value	AL 1		Alarm 1 value. Adjustable except in Strategy 6	Strategies 2, 3, 4 & 6 If alarm 1 configured	A if alarm 1 only or 1
Process Alarm 2 value	AL2		Alarm 2 value. Adjustable except in Strategy 6	Strategies 2, 3, 4 & 6 If alarm 2 configured	2
Active Alarm Status	ALSt		The alarm status screen indicates any active alarms. When alarms are active, the associated Alarm LED flashes. *Latched relays can be reset (see below)*	Display(s) show active alarms. Inactive alarms are blank: 1 = Alarm 1 Active; 2 = Alarm 2 Active	1

1/8 Din Indicator Units Display
The 1480 1/8 Din indicator has an additional Units Display. In Operator Mode, this display shows °C or °F when a temperature input range is displayed, and is blank for strain gauge or linear inputs.
The units display is also used in other modes as a confirmation of the parameter type currently shown in the main display.

5 Alarm Indications

The alarm status screen indicates any active alarms, in addition the associated Alarm LED flashes. For latching alarm outputs, the LED FLASHES when the alarm condition exists, and goes to ON when the alarm condition is no longer present if the output has not yet been reset, to indicate that the relay is in the Latched on condition.

5.1 Resetting Latched Alarm Outputs

Latched outputs can be reset whilst the Process variable or Alarm Status screens are displayed, via the Digital Input (if fitted), from the front keypad as follows:

Press either ▲ or ▽ to reset the latched relay(s).
Note:
Outputs will only reset if their alarm condition is no longer present.
CAUTION:
A reset will affect ALL latched outputs.

5.2 Resetting Alarm 1 Active Time, Minimum PV or Maximum PV

The stored Maximum PV value, Minimum PV value or Alarm 1 active Elapsed Time value can be reset via the Digital Input (if fitted), with a communications command via the RS485 module (if fitted) or from the front keypad as follows:
Press ↻ to select the parameter to be reset.
Press either ▲ or ▽ for three seconds.

The display briefly shows ---- when the value is reset before the unit reverts to the requested display.

Multi-Point Scaling

When Multi-Point Scaling is enabled (MPS = EnAb in Configuration Mode), up to 9 breakpoints can be set to linearize the input signal. This only applies to mA, mV or Voltage input types.

For each breakpoint the input scale value (ScAn) is entered in % of input span, followed by the value to be shown (diSn) in display units. Each breakpoint's input scale value must be higher than the previous value, but the display values can be either higher or lower. Any scale value set to 100% becomes the last in the series.

6 Tare Feature

When Tare is enabled (tArE = EnAb in Configuration Mode), it can be used to set the displayed value to zero automatically, by making the PV Offset parameter equal, but opposite to, the current process variable value. Tare can be initiated via the Digital Input (if fitted), or by using the following key press sequence:

Press ↺ until the process variable is displayed.
Hold down ▽ and △ together for three seconds until the display shows YES?
Release both keys and press △ within 3 seconds to confirm the request.
Note:
The Tare request is aborted if this sequence is not followed exactly.