



*From lab to production,
providing a window into the process*



Instrumentation training guide

Models: 1480/1490

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1/8 DIN indicators



- Universal Input 4-digit indicator (strain gauge, voltage, current, thermocouple or RTD)
- Min/max Value Hold
- Single or dual configurable alarms
- Retransmission of displayed PV option

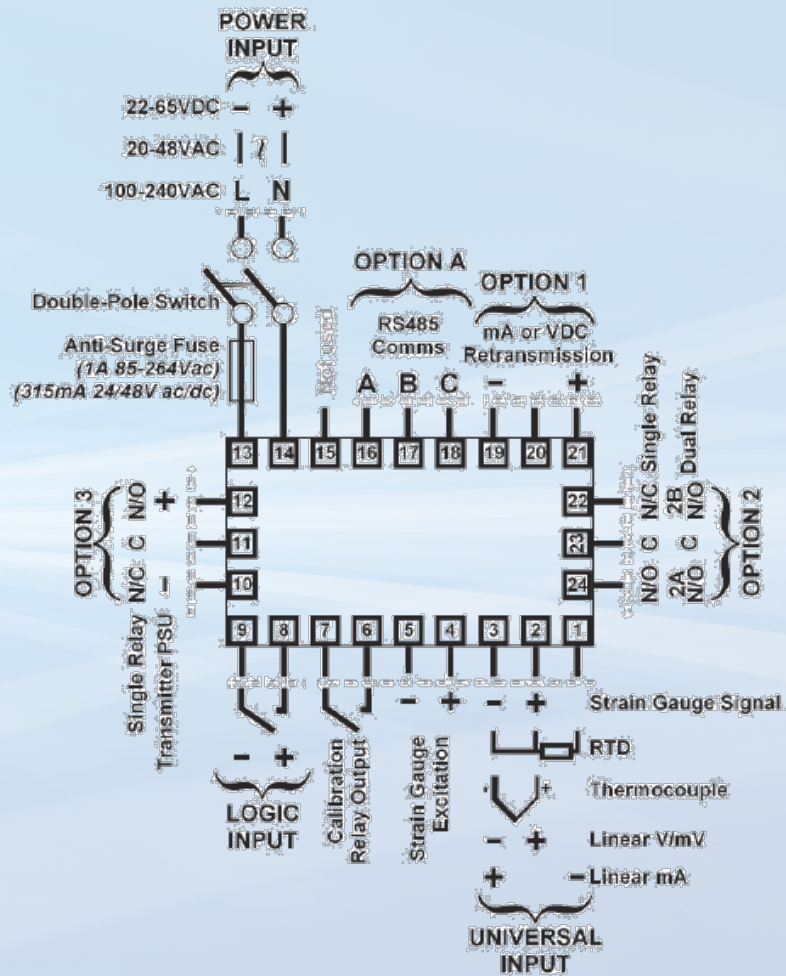
- Universal Input 5-digit Indicator
 - Improved specification for input & output
 - Single or dual configurable alarms
 - Min/Max hold values
- Options include:
- Linear retransmission of PV
 - Transmitter power supply
 - Modbus



Terminal assignments for 1480/1490

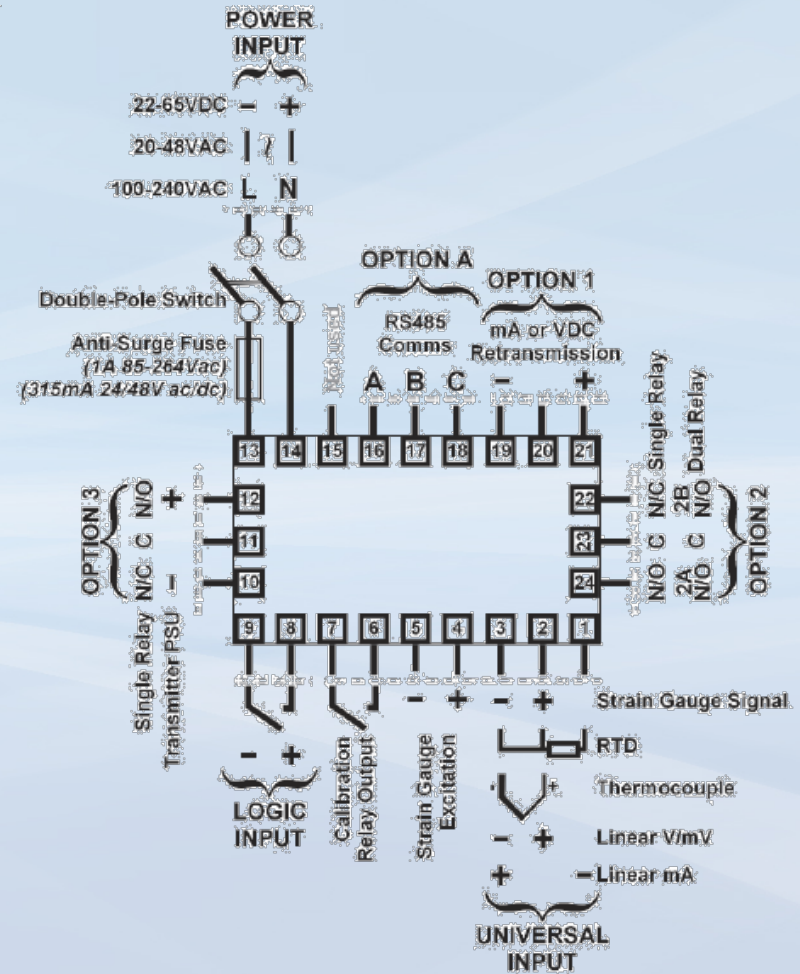


Terminal assignments for 1480/1490



Terminal assignments for 1480/1490

Connector wiring		Wire Color	1480/1490 Terminal	
Pin A	Signal +	Red	2	2
Pin B	Signal -	Black	3	3
Pin C	Exc +	White	4	4
Pin D	Exc -	Green	5	5
Pin E	Cal 1	Blue	6	6
Pin F	Cal 2	Orange	7	7



Wiring for strain gauge pressure transducer, mV output




Configuration and set up

1480 Quick start Instructions



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 . This flashes in Configuration Mode.

1480 Quick start instructions




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.

1480 Quick start instructions

1. 1480 Configuration Mode Parameters

Parameter	Legend <i>for 1 sec followed by</i> →	Set Value	Adjustment Range & Description	Default Value	When Visible	Units Display
Mode Default	<i>d f f 7</i>	<i>d , 5A</i> <i>EnAb</i>	Enable or disable default of all parameters in configuration mode	<i>d , 5A</i>	Always	
Input type and Range	<i>InPt</i>	<i>St_G</i>	Strain Guage: -10 to 50mV	<i>St_G</i>	Always	r
		<i>bC</i>	B type: 100 to 1824 °C			
		<i>bF</i>	B type: 211 to 3315 °F			
		<i>C</i>	C type: 0 to 2320 °C			
		<i>C</i>	C type: 32 to 4208 °F			
		<i>J</i>	J type: -200 to 1200 °C			
		<i>J</i>	J type: -328 to 2192 °F			
		<i>J.C</i>	J type: -128.8 to 537.7 °C with decimal point			
		<i>J.F</i>	J type: -199.9 to 999.9 °F with decimal point			
		<i>P</i>	K type: -240 to 1373 °C			
		<i>P</i>	K type: -400 to 2503 °F			
		<i>P.C</i>	K type: -128.8 to 537.7 °C with decimal point			
		<i>P.F</i>	K type: -199.9 to 999.9 °F with decimal point			

1480 Quick start instructions

		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				

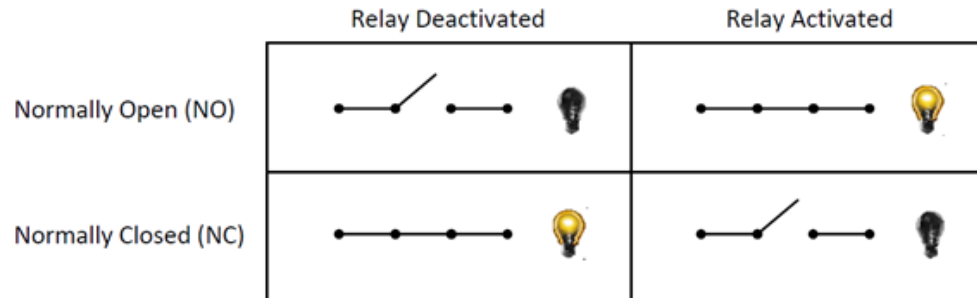
1480 Quick start instructions

Process Low Alarm 2 value*	PLA2	Range Min. to Range Max. <i>Parameter repeated in Setup Mode</i>	Range Min.	ALA2 = P.Lo		
Alarm 2 Hysteresis*	AHY2	1 LSD to 100% of span (in display units) on "safe" side of alarm point. <i>Parameter repeated in Setup Mode</i>	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	

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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			
		A 2nd	Alarm 2, direct, non-latching			
		A 2nr	Alarm 2, reverse, non-latching			
		A 2Ld	Alarm 2, direct, latching			
		A 2Lr	Alarm 2, reverse, latching			
		O 12d	Logical Alarm 1 OR 2, direct			
		O 12r	Logical Alarm 1 OR 2, reverse			
		A nYd	Any active alarm, direct			
		A nYr	Any active alarm, reverse			
Output 3 Usage	USE3	As for Output 2 usage		A 2nd	OPn3 is not empty	3

Alarm actions



NORMALLY CLOSED

Wire the positive on "NC" and negative on "Common", and the action is **reverse** (relay energized in non alarm condition) Normally closed example above is what will happen when we hit the alarm threshold.

Wire the positive on "NC" and select the alarm as **direct**, the example of normally open above is what will happen when we hit alarm threshold.

NORMALLY OPEN

Wire to "NO" side with positive and negative on "Common", and the action is **reverse** (relay energized in non alarm condition) Normally open example is what will happen when we hit alarm threshold

If we wire the same way, and select the alarm as **direct**, the example of normally closed is what will happen at alarm threshold.

NOTE* If "NO" has positive wire, then the power will remain constant, even if main power is interrupted at the indicator supply*



1480 Calibration

2 Calibration Mode




2.1 Entry to Calibration 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 10.*

*Note: Calibration mode will only be displayed if input type is set to **St-G***



1490 Quick start instructions




Set up parameters:




*Note: At first power-up the message **Go to ConF** is displayed, as described in section 3 of this manual. Access to other menus is denied until configuration mode is completed*

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  and pressing . The **SELCt** legend is shown for 1 second, followed by the legend for the current mode.

Press  or  to choose the required mode, then press  to enter.

An unlock code is required to prevent unauthorised entry to Configuration, & Setup modes. Press  or  to enter the unlock code, then press  to proceed.

Mode	Legend <i>for 1 sec followed by</i>	Set Value	Description	Default Unlock Codes
Operator	SELCt	OPt_r	Normal operation	None
Set Up		SEtUP	Tailor settings for application	10
Configuration		ConF	Configure instrument for use	20
Product Info		inFo	Instrument information	None
Calibration		UCAL	Calibrate Strain Gauge input	10
Special		SPECL	Special	None

1. Enter "ConF" via select menu
2. Unlock code is 20(press  till you see 20, then press )
3. Continue through section 3 below , for parameter settings
(default input is STR_G for strain gauge)

1490 Quick start instructions

3. CONFIGURATION MODE

First select Configuration mode from Select mode (refer to section 2).

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 value.*

Press or to set the required value. Press to display YES, press accept the change, otherwise parameter will revert to previous value. To exit from Configuration mode, hold down and press to return to Select mode.

*Note: Parameters displayed depend 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	Legend <small>for 1 sec followed by</small>	Set Value	Adjustment Range & Description	Default Value	
Mode Default	dF n7	d .5A EnAb	Enables or Disables Defaulting of Values within Mode	d .5A	
Input Range/Type	inP ut	See following table for possible codes		Str _G	
Code	Input Type & Range	Code	Input Type & Range	Code	Input Type & Range
bC	B: 100 - 1824 °C	LF	L: 32.0 - 999.9 °C	PtF	Pt100: -328 - 1472 °F
bF	B: 211 - 3315 °F	nC	N: 0 - 1399 °C	PtC	Pt100: -128.8 - 537.7 °C
cC	C: 0 - 2320 °C	nF	N: 32 - 2551 °F	PtF	Pt100: -199.9 - 999.9 °F
cF	C: 32 - 4208 °F	rC	R: 0 - 1759 °C	0_20	0 - 20 mA DC
JC	J: -200 - 1200 °C	rF	R: 32 - 3198 °F	4_20	4 - 20 mA DC
JF	J: -328 - 2192 °F	SC	S: 0 - 1762 °C	0_50	0 - 50 mV DC

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JL	J: -128.8 - 537.7 °C	SF	S: 32 - 3204 °F	10.50	10 - 50 mV DC
JF	J: -199.9 - 999.9 °F	LC	T: -240 - 400 °C	0.5	0 - 5 V DC
KL	K: -240 - 1373 °C	LF	T: -400 - 752 °F	1.5	1 - 5 V DC
KF	K: -400 - 2503 °F	LC	T: -128.8 - 400 °C	0.10	0 - 10 V DC
KL	K: -128.8 - 537.7 °C	LF	T: -199.9 - 752 °F	2.10	2 - 10 V DC
KF	K: -199.9 - 999.9 °F	P24L	PtRh20% vs. 40%: 0 - 1850 °C	Str_G	-10mV-50mV
LL	L: 0 - 762 °C	P24F	PtRh20% vs 40%: 32 - 3362 °F		
LF	L: 32 - 1403 °F				
LL	L: 0.0 - 537.7 °C	PLC	Pt100: -199 - 800 °C		

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

Parameter	Legend <i>for 1 sec followed by</i>	Set Value	Adjustment Range & Description	Default Value
Scale Range Upper Limit	ruL		Scale Range Lower Limit +100 to Range Maximum	Max (Lin = 1000)

The “ruL” should match the upper range of the pressure sensor being used

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Parameter	Legend <i>for 1 sec followed by</i> →	Set Value	Adjustment Range & Description	Default Value
Scale Range Lower Limit	rLL		Range Minimum to Scale Range Upper Limit -100	Min (Lin = 0)
Decimal point position	dPoS	0=XXXX, 1=XXX.X, 2=XX.XX, 3=X.XXX	(non-temperature ranges only)	0
*Multi-Point Scaling	mPS	EnAb d,SA	Enables or disables the input multi-point scaling feature	d,SA
Alarm 1 Type	ALM1	P_H, P_Lo	Process High Alarm Process Low Alarm	P_H,

The “rLL” should match the lower range of the pressure sensor being used.
 Decimal point is “0” meaning no decimal is used by default
 Multipoint scaling is not a common selection in pressure measurement
 Alarm 1 type is high by default

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		nonE	No alarm	
High Alarm 1*	PhA 1		Alarm 1 value, adjustable within scaled range, in display units	Max
Low Alarm 1*	PLA 1			Min
Alarm 1 Hysteresis*	AHY 1		1 LSD to full span in display units on safe side of alarm	10
Alarm 2 Type	ALP2		Options as for alarm 1	nonE
High Alarm 2*	PhA 2			Max
Low Alarm 2*	PLA 2			Min
Al 2 Hysteresis*	AHY 2			10
Output 1 Usage	USE 1	rEtP	Retransmit PV Output	rEtP
		dc 10	0 to 10VDC (adjustable) transmitter power supply*	
Output 1 PV Retransmit Type	tYP 1	0_5	0 to 5 V DC output	0_10
		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	

Alarm 1 & 2 value can be high or low
 Hysteresis default value is 10 units (psi/bar/etc..)
 Output 1= retransmission of pressure value

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Retransmit OP 1 Scale maximum	<i>rtHG 1</i>	Display value between, -1999 & 99999 at which Output 1 will be at maximum	Range max	
Retransmit OP 1 Scale minimum	<i>rtLo 1</i>	Display value between, -1999 & 99999 at which Output 1 will be at minimum	Range min	
TxPSU 1 level	<i>PSU 1</i>	Output 1 Power Supply (0 to 10VDC)*	10.0	
Output 2A Usage	<i>USE2A</i>	<i>R1 nd</i>	Alarm 1, direct, non-latching	<i>R Ind</i>
		<i>R1 nr</i>	Alarm 1, reverse, non-latching	
		<i>R1 Ld</i>	Alarm 1, direct, latching	
		<i>R1 Lr</i>	Alarm 1, reverse, latching	
		<i>R2 nd</i>	Alarm 2, direct, non-latching	
		<i>R2 nr</i>	Alarm 2, reverse, non-latching	
		<i>R2 Ld</i>	Alarm 2, direct, latching	
		<i>R2 Lr</i>	Alarm 2, reverse, latching	
		<i>Or 12d</i>	Logical Alarm 1 OR 2, direct	
		<i>Or 12r</i>	Logical Alarm 1 OR 2, reverse	
		<i>RnY d</i>	Any active alarm, direct	
		<i>RnY r</i>	Any active alarm, reverse	

Retransmission output max and min settings should reflect the range of the pressure sensor.

Output usage will be assigned to Alarms 1 & 2

Questions?