Single Channel Process Indicator

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1.INTRODUCTION

Single Channel Fix/Universal input Process indicator/controller/transmitter is designed to accept various types of inputs, & displays the process parameter through a 4 or 5 digit red LED display.

The instrument is available in a panel mounted housing which requires a cut out of 92mm(W) x 44 mm(H) x 85 (D)mm. A variety of power supply options are available for this.

The instrument employs low drift precision components for long trouble-free operation.

The instrument is a jumper-less system, there are different types of modes such as configuration mode, setup mode, calibration mode. Four keys provided can do any change in the mode. Default mode is normal mode.

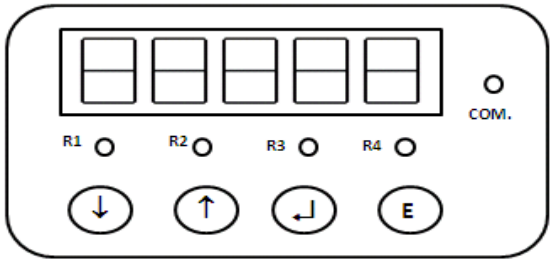
2.SPECIFICATION

Input	: 4 to20 mA DC,k,b,e,t,s,r,n,j-Tc,PT100,PT46,0-10Vdc,CU53,
Display Range	: -1999 to 9999
Display	: 4 digit,(5 dgt optionally) red led, 12.5mm for PV Alarm status LEDs & Communication status LEDs.
Accuracy	: ± 0.25% for Linear Input,
Power Supply	: 24Vdc, 90 - 260Vac
Ambient Temp	: 0-50 deg C
Dimensions	: 48 mm (H) * 92 mm (W) * 85mm (D) Panel mounting, 96mm (H) * 96 mm (W) * 85mm (D)

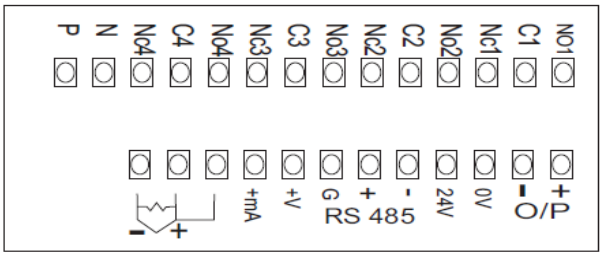
3.INSTALLATION

The instrument is designed for mounting on a panel. It requires a cut out of 92 mm * 44mm. Leave clear space of at-least 50 mm on top and bottom of the instrument for mounting the instruments from the back.
All field termination is done at the back of the instrument. The terminal strips are provided for the termination.

3.1Key Functions:

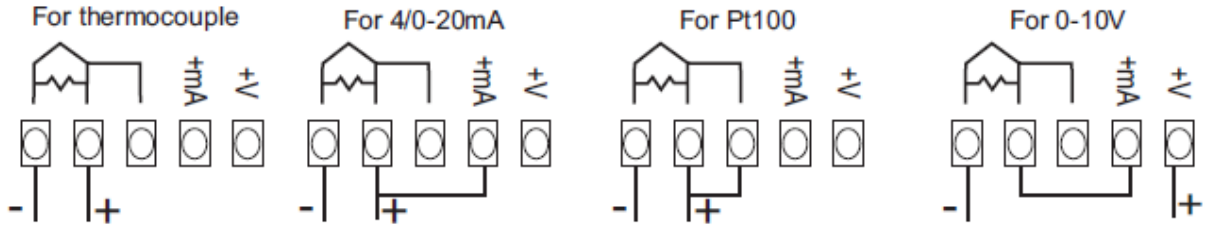


3.2 Termination Board:



E : EXIT Key
↵ : Enter key / NEXT
↑ : Increment key
↓ : Decrement key
Note: To see Ambient temperature press down key (↓)

3.3Connection Digram :



4.OPERATION

4.1 How to set Zero /Span Range:

Press Enter key
0000 (password, factory set is 0000)
Press Enter
Setp (setup menu)
Dp (press Up key select span)
Press Enter
100.0 (press up/ down key to set span value)
Press Enter
Press UP key
Zero (zero value)
Press enter
0000 (press up/down key to set zero value)
Press enter

Press E (for Escape)

4.2 How to set Decimal Point:

Press Enter key
0000 (password, factory set is 0000)
Press Enter
Setp (setup menu)
Dp
Press Enter
100.0 (press up key to shift decimal Point)
Press Enter
Press E (for Escape)

4.3 How to set Alarm value & its logic:

Press Enter key
0000 (password, factory set is 0000)
Press Enter
Setp (setup menu)
Dp (press Up key select Alarm)
Press Enter
Rly 1 (press up/ down key to select 1,2,3,4 alarm)
Press Enter
L – ON (it will flash for type i.e Hi/Lo alarm select by UP/Down key)
Press enter
000.0 (it will flash for Setp i.e setpoint value set by up/down key desired value)
Press enter
000.0 (it will flash for hysteresis set desired value by up/down key)
Press enter
Rly 1 (select required alarm by pressing down key)
Press E for Exit

(follow similar procedure for other relays)

4.4 How to change Password:

PRESS	**DISPLAY MESSAGE**
Press **down key and turn on power supply**	**opas**
Set old password by up and down	**xxxx**
Press '↵'	**npas**
Set new password by up and down key	**xxxx**
Press '↵'	
Press ESC KEY	
TURN OFF POWER SUPPLY & RESTART IT.	

4.5 How to Calibrate the Instrument:

FOR RTD CALIBRATION (for PT100,PT46,CU53 **)**

PRESS	**DISPLAY MESSAGE**
Press '↵' **key and turn on power supply**	**PASS**
Press '↵'	**0000**
Press '↵'	**CAL**
Press '↵'	**Inp**
Press '↵'	**t-c**
Press '↑' /'↓'	**rtd (select rtd)**
Press '↵'	**C000**
(Set input as 0 degc i.e 100 ohms to make it zero value)	
Press '↵'	**C350**
(feed 350 degc i.e 229.7 ohms at input terminal)	
Press '↵'	**(hex value)**
Press '↑' /'↓'	**9999 or 0000**
Press '↑' /'↓'	**2297(set 2297)**
Press '↵'	
Press '**E**'	
Ok	

FOR THERMOCOUPLE (For all type of thermocouple**)**

Press '↵' **key and turn on power supply**	**PASS**
Press '↵'	**0000**
	(k,b,e,t,s,r,k,j-tc)
Press '↵'	**CAL**
Press '↵'	**Inp**
Press '↵'	**t-c**
Press '↑' /'↓'	**t-c (select thermocouple)**
Press '↵'	**zero**
(Set input as zero mv or short input terminals to make it zero value)	
Press '↵'	**span**
(feed 50.00 mV at input terminal)	
Press '↵'	**(hex value)**
Press '↑' /'↓'	**9999**
Press '↑' /'↓'	**5000(set 5000)**
Press '↵'	
Press '**E**'	
Ok	

FOR 0-10

Press '↵' **key and turn on power supply** **PASS**
Press '↵' **0000**
Press '↵' **CAL**
Press '↵' **Inp**
Press '↵' **t-c**
Press '↑' /'↓' **0-10 (for 0-10)**
Press '↵' **zero**
(Set input as zero v or short input terminals to make it zero value)
Press '↵' **span**
(feed 10.00 v at input terminal)
Press '↵' **(hex value)**

Press '↑' /'↓' **0000**
Press '↑' /'↓' **9999 (set 9999)**
Press '↵'
Press **'E'**
Ok

FOR 0/4-20mA DC

Press '↵' **key and turn on power supply** **PASS**
Press '↵' **0000**
Press '↵' **CAL**

Press '↵' **Inp**
Press '↵' **t-c**
Press '↑' /'↓' **0-20 (for 4-20)**
Press '↵' **zero**
(Set input as 4 mA make it zero value)
Press '↵' **span**
(Set input as 20 mA make it span value)
Press '↵' **(random value)**

Press '↑' /'↓' **0000**
Press '↑' /'↓' **9999 (set 9999)**
Press '↵'
Press **'E'**
Ok

FOR 0/4-20mA Output calibration
Press '↵' **key and turn on power supply** **PASS**
Press '↵' **0000**
Press '↵' **CAL**
Press '↵' **Inp(select OUT)**
Press '↵' **out**
Press '↵' **zero**
(Set output as 4 mA make it zero value)
Press '↵' **0000**
(Set output as 4 mA make it zero value)

Press '↵' **span**

(Set output as 20 mA make it span value)

Press '↵' **(random value)**

Press '↑' /'↓' **9999**
Press '↑' /'↓' **(set span value for output 20mA)**
Press '↵'
Press '**E**'
Ok

FOR AMBIENT

Press '↵' **key and turn on power supply** **PASS**
Press '↵' **0000**
Press '↵' **CAL**
Press '↵' **Inp**
Press '↑' /'↓' **Amb (select Amb.)**
Press '↵' **9999 or 0000**
Press '↑' /'↓' **set room temp.**
Press '↵'
Press '**E**'
Ok

4.5 How to set Modbus Connectivity:

Press Enter key
0000 (password, factory set is 0000)
Press Enter
Setp (setup menu)
Press up key select rtu
Press enter
bAUd (Baud rate)
Press enter
9600 (select desired baud rate value by pressing up key 19.2,4800, 2400)
Press Enter & E for EXIT

Modbus Register Details :

40001 : Signed Process Value (LS Word)
40002 : Signed Process Value (MS Word) (in case of 5 digit)
40003 : Signed Ambiet Value
40004 : Current Status 00=Normal, 01=Under, 02=Over, 03=Open
40005 : On board Relay Status Register. Only Lower 4 bit Status remarks the Status of Relay.
Bit2= Relay1,…,Bit5=Relay4
BitValue=0 means Off & BitValue=1 means On
40006 : Input Type Register
Value 12= 4-20 mA
40007 : Decimal Point Register
40008 : Setpoint1 Register (LS Word)
40009 : Setpoint1 Register (MS Word) (in case of 5 digit)
40010 : Hysterasis1 Register
40011 : Setpoint2 Register (LS Word)
40012 : Setpoint2 Register (MS Word) (in case of 5 digit)

40013 : Hysterasis2 Register
40014 : Setpoint3 Register (LS Word)
40015 : Setpoint3 Register (MS Word) (in case of 5 digit)
40016 : Hysterasis3 Register
40017 : Setpoint4 Register (LS Word)
40018 : Setpoint4 Register (MS Word) (in case of 5 digit)
40019 : Hysterasis4 Register
40020 : ZERO Register (LS Word)
40021 : ZERO Register (MS Word) (in case of 5 digit)
40022 : SPAN Register (LS Word)
40023 : SPAN Register (MS Word) (in case of 5 digit)
40024 : ALARM1 TYPE
40025 : ALARM2 TYPE
40026 : ALARM3 TYPE
40027 : ALARM4 TYPE
End…….