

# USER'S OPERATING MANUAL FOR DIGITAL PROCESS INDICATOR

(Models:- PI - 44 / PI - 77 / PI - 88 / PI - 99)



PI - 44  
(48 X 48)



PI - 77  
(72 X 72)



PI - 88  
(48 X 96)



PI - 99  
(96 X 96)

## SPECIFICATIONS: -

### 1. DISPLAY TYPE : 4-Digit 7 segment LED (WHITE)

Model	PI-44	PI-77	PI-88	PI-99
Display height	0.36"	0.56"	0.56"	0.56"

### 2. INPUT

Analog Input	: 0 - 20mA, 4 - 20mA & 0 - 1, 0-5, 0-3.3, 0-10 VDC (Selectable)		
Range	: -1999 to 9999		
Resolution	: 0.001, 0.01, 0.1 & 1°C (Selectable)		
Digital Filter	: 1 to 10 (Selectable)		

### 3. ENVIRONMENTAL

Operating Range	: 0 ~50°C, 5~90% Rh
Storage Humidity	: 95% Rh (Non-condensing)

### 4. POWER SUPPLY

Supply Voltage	: 90~270VAC, 50/60Hz.
Consumption	: 4W Maximum.

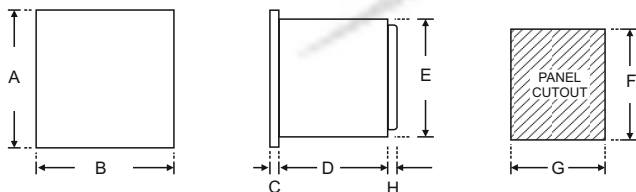
### 5. PHYSICAL

Housing	: ABS Plastic.
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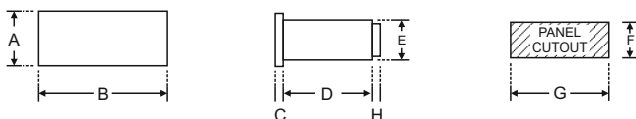
Model no.	PI-44	PI-77	PI-88	PI-99
Weight (gms.)	130	200	200	240

## OVER ALL DIMENSIONS & PANEL CUT OUT (IN MM)

### MODEL:- PI - 44 / PI - 77 / PI - 99



### MODEL : PI - 88



## SAFETY INSTRUCTION:-

### GENERAL

- ❖ The controller must be configured correctly for intended operation. Incorrect configuration could result in damage to the equipment or the process under control or it may lead to personnel injury.
- ❖ The controller is generally part of control panel and in such a case the terminals should not remain accessible to the user after installation.

### MECHANICAL

- ❖ The Controller in its installed state must not come in close proximity to any corrosive/combustible gases, caustic vapors, oils, steam or any other process by-products.
- ❖ The Controller in its installed state should not be exposed to carbon dust, salt air, direct sunlight or radiant heat.
- ❖ Ambient temperature and relative humidity surrounding the controller must not exceed the maximum specified limit for proper operation of the controller.

### ELECTRICAL

- ❖ The controller must be wired as per wiring diagram & it must comply with local electrical regulation.
- ❖ Care must be taken not to connect AC supplies to low voltage sensor input.
- ❖ Circuit breaker or mains s/w with fuse (275V/1A) must be installed between power supply and supply terminals to protect the controller from any possible damage due to high voltage surges of extended duration.
- ❖ Circuit breaker and appropriate fuses must be used for driving high voltage loads to protect the controller from any possible damage due to short circuit on loads.
- ❖ To minimize pickup of electrical noise, the wiring for low voltage DC and sensor input must be routed away from high current power cables. Where it is impractical to do so, use shielded ground at both ends.

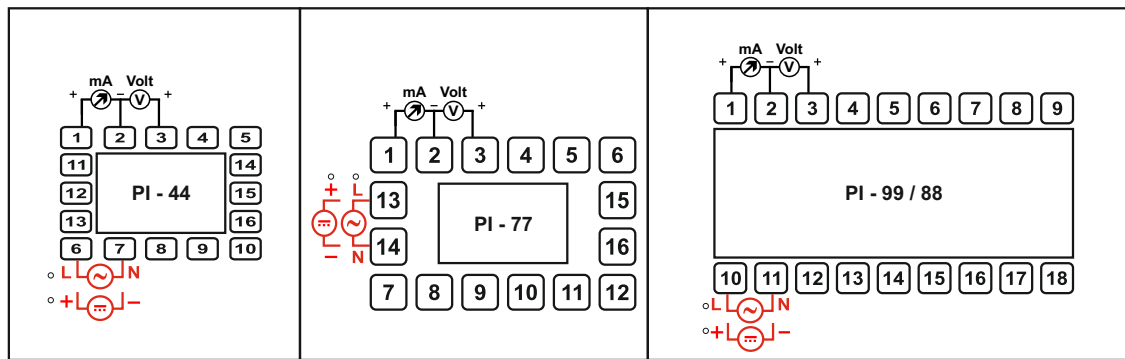
TABLE : 1

Dim Model	A	B	C	D	E	F	G	H
PI - 44	48	48	8	75	43	44	44	9
PI - 77	72	72	10	65	66	68	68	9
PI - 88	48	96	10	45	43	44	92	9
PI - 99	96	96	10	45	89	92	92	9

## INSTALLATION GUIDELINES

1. Prepare the cut-out with proper dimension as shown in figure.
2. Remove clamp from controller
3. Push the controller through panel cut-out and secure the controller in its place by tightening the side clamp.

## TERMINAL DIAGRAM:



## POWER UP :-

At power on, following sequence will be prompted on the display till it reaches to Home display mode.



## Programming :-

### Configuration List :-

- (1) To enter in this mode, Press and hold SET & UP key simultaneously for 3 sec.
  - (2) Press UP or DOWN key to scroll between parameter options.
  - (3) Press SET key to store the current parameter & move on to the next parameter.
- (All following selected parameter's code shown in shaded will be displayed for 1 sec. followed by their values / options)

PARA METER	DISPLAY	DESCRIPTION	DEFAULT
Lock Code	<b>LOCK</b> > 0	Set this parameter to 15 (Default LOCK CODE) to access Config. List. User has a choice to set different Lock Code in the range 1 ~ 9999 via USER LOCK CODE in Config. List.	15
Input	<b>InPt</b> > 0-1 0-3.3 0-5 0-10 0-20 4-20	By this parameter user can select the Input type. '0 - 1' :- If selected, instrument will accept 0 - 1VDC input at rear terminal. Below 0V it will display 'LLLL' message & Above 1V it will display 'HHHH'. '0 - 3.3' :- If selected, instrument will accept 0 - 3.3VDC input at rear terminal. Below 0V it will display 'LLLL' message & above 3.3V it will display 'HHHH'. '0 - 5' :- If selected, instrument will accept 0 - 5 VDC input at rear terminal. Below 0V it will display 'LLLL' message & above 5V it will display 'HHHH'. '0 - 10' :- If selected, instrument will accept 0 - 10VDC input at rear terminal. Below 0V it will display 'LLLL' message & Above 10V it will display 'HHHH'. '0 - 20' :- If selected, instrument will accept 0 - 20mA input at rear terminal. Below 0mA it will display 'LLLL' message & Above 20mA it will display 'HHHH'. '4 - 20' :- If selected, instrument will accept 4 - 20mA input at rear terminal. Below 3.8mA it will display 'LLLL' message & Above 20mA it will display 'HHHH'. If input is less than 3.2mA it will display 'L.BRK'(Loop Break) message.	4 - 20 mA
Resolution	<b>RESL</b> > 0 0.0 0.00 0.000	By this parameter user can select four format of resolution, i.e. "0.000, 0.00, 0.0, 0".	0

PARAMETER	DISPLAY	DESCRIPTION	DEFAULT
Analog Input Low Value	<b>AI.LO</b> > <input type="text" value="0"/>	By this parameter user can define Low scale for input signal. Which can be in between '-1999 to Ai.Hi'.	0
Analog Input High Value	<b>AI.HI</b> > <input type="text" value="9999"/>	By this parameter user can define HIGH scale for input signal. Which can be in between 'Ai.Lo to 9999'.	9999
Analog Input Logic	<b>AILG</b> > <input type="text" value="dir"/> ↓ ↑ <input type="text" value="rev"/>	By this parameter user can select the logic of the Analog Input. 'DIR' :- If selected then the value will vary from Ai.Lo to Ai.Hi. 'REV' :- If selected then the value will vary from Ai.Hi to Ai.Lo.	Dir
Process Value Offset	<b>OFSE</b> > <input type="text" value="0"/>	Function of this parameter is to add/subtract a constant value to the measured PV to obtain Final PV for control applications. This parameter value needs to be altered for one of the following reason : (i) To compensate for known thermal gradient. (ii) To match the display values with another recorder or indicator measuring the same PV.	0
Input Filter	<b>FLTR</b> > <input type="text" value="4"/>	Controller is equipped with an adaptive digital filter which is used to filter out any extraneous pulses on the PV. Filtered PV Value is used for all PV dependent functions. If PV signal is fluctuating due to noise, increase the filter time constant value.	4
User Lock Code	<b>ULOC</b> > <input type="text" value="15"/>	Default USER LOCK CODE is 15 to access Control & Configuration List. User has a choice to set its own USER LOCK CODE between 1 to 9999, this is to prevent unauthorized access of Control & Configuration List.	15

## User Calibration List:-

- (1) To enter in this mode, Press and hold UP and DOWN key simultaneously for 3 sec.
  - (2) Press UP or DOWN key to scroll between parameter options.
  - (3) Press SET key to store the current parameter & move on to the next parameter.
- (All following selected parameter's code shown in shaded will be displayed for 1 sec. followed by their values / options)

PARAMETER	DISPLAY	DESCRIPTION	DEFAULT
User Calib. Lock	<b>UCLP</b> > <input type="text" value="0"/>	Set this parameter to "7" (Default LOCK CODE) to access User Calibration List.	7
Low Calibration	<b>LCAL</b> > <input type="text" value="0"/>	This parameter allows the user to program "Lower Calibration" values other than factory programmed values. With the help of Up / Down Key "Low Calibration" can be adjusted (As per selected input apply Low mA/Volt at input terminal).	0
High Calibration	<b>HCAL</b> > <input type="text" value="9999"/>	This parameter allows the user to program "Higher calibration" values other than factory programmed values. With the help of Up / Down Key "High Calibration" can be adjusted (As per selected input apply High mA/Volt at input terminal)	9999
Factory Default	<b>FDEF</b> > <input type="text" value="YES"/> ↓ ↑ <input type="text" value="NO"/>	Yes:- If selected, User calibration will be canceled and instrument will run on factory set calibration values. No:- If selected, there is no effect on User Calibration and instrument will run as per User defined Calibration values.	No

**Table 2 :- Range as per Resolution.**

Resolution	Analog Input Low Value	Analog Input High Value	Process Value Offset
0000	-1999 to 9999	-1999 to 9999	-25 to 25
000.0	-199.9 to 999.9	-199.9 to 999.9	-25.0 to 25.0
00.00	-19.99 to 99.99	-19.99 to 99.99	-15.00 to 25.00
0.000	-1.999 to 9.999	-1.999 to 9.999	-1.500 to 2.500

### **Error Message:-**

Display Message	Selected Input	Descriptions
"L.BRK"	4 ~ 20	If input is less than "3.2mA" it will display "L.BRK" (Loop Break) message.
"LLLL"	4 ~ 20	If input is below "3.8mA" and above "3.2mA" it will display "LLLL" message.
"LLLL"	0 ~ 20 / 0 ~ 10	If input is below '0' it will display "LLLL" message.
"HHHH"	0 ~ 20 / 4 ~ 20 / 0 ~ 10	If input is above range it will display "HHHH" message.



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