USER'S OPERATING MANUAL FOR PROCESS INDICATOR JUMBO DISPLAY WITH UNIVERSAL INPUT
(Models:- PI - JD - 2 / PI - JD - 4)

PI-JD-2
(2 Inch)

PI-JD-4
(4 Inch)

SPECIFICATIONS: -

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

Model no.	PI-JD-2	PI-JD-4	Display Colour
Display height (PV)	2.7"	4"	Red

2. INPUT

Sensor Input	: TC-J,K,R,S,N,T,B & RTD (PT-100)
Analog Input	: 0 - 20mA, 4 - 20mA, 0 - 1VDC,
	0 - 5VDC, 0 - 3.3VDC, 0 - 10VDC
	(Selectable)
Range	: -1999 to 9999
Resolution	: 0.001, 0.01, 0.1 & 1°C (Selectable)
Digital Filter	: 1 to 10 (Selectable)

4. ENVIRONMENTAL

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

5. POWER SUPPLY

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

6. PHYSICAL

Housing	: ABS Plastic.

Model no.	PI-JD-2	PI-JD-4
Weight	1.5 Kg	4.25 Kg

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.
❖ 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 maxium 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.
❖ 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.

OVER ALL DIMENSIONS & PANEL CUT OUT (IN MM)
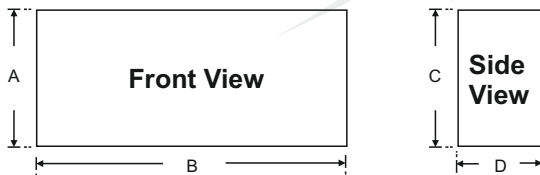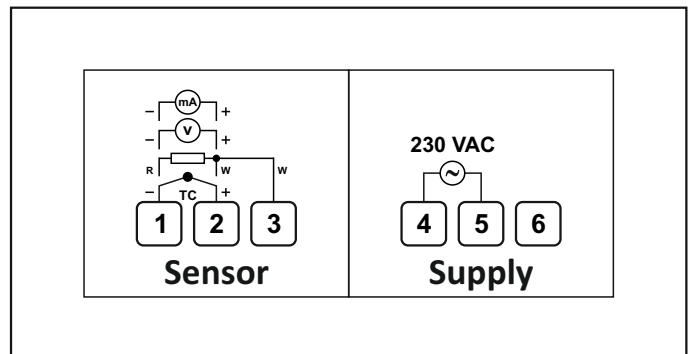
MODEL:-PI- JD-2 / PI-JD-4

Front View

Side View

TABLE : 1

Dim Model	A	B	C	D
PI-JD-2	120	230	120	80
PI-JD-4	165	390	165	50

TERMINAL DIAGRAM:

230 VAC

1	2	3

Sensor

4	5	6

Supply

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

`P1`	>	`U.10.0`	>	`0` PV
MODEL		VERSION		HOME

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)

PARAMETER	DISPLAY	DESCRIPTION	DEFAULT
CONFIG LOCK CODE	`Cn.LK` > `0`	Set this parameter to 15 (Default LOCK CODE) to access Configuration List. User has a choice to set different Lock Code in the range 1 ~ 9999 via USER LOCK CODE in Configuration List.	0
Input Types	`InPt` > `tC - J`	'TC-J' :- If selected, instrument will accept temperature input from thermocouple J type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	TC-J
	`tC - K`	'TC-K' :- If selected, instrument will accept temperature input from thermocouple K type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`tC - r`	'TC-R' :- If selected, instrument will accept temperature input from thermocouple R type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`tC - S`	'TC-S' :- If selected, instrument will accept temperature input from thermocouple S type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`tC - n`	'TC-N' :- If selected, instrument will accept temperature input from thermocouple N type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`tC - t`	'TC-T' :- If selected, instrument will accept temperature input from thermocouple N type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`tC - b`	'TC-B' :- If selected, instrument will accept temperature input from thermocouple B type sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`rtd`	'RTD' :- If selected, instrument will accept temperature input from PT-100 sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`rtd.1`	'RTD.1' :- If selected, instrument will accept temperature input from PT-100 sensor at rear terminal. Below range it will display 'LLLL' message & above range it will display 'HHHH'.	
	`0 - 1`	'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`	'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`	'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`	'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`	'0 - 20' :- If selected, instrument will accept 0 - 20 mA input at rear terminal. Below 0 mA it will display 'LLLL' message & Above 20 mA it will display 'HHHH'.	
	`4 - 20`	'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.	
RESOLUTION	`rESL` > `0` / `0.0` / `0.00` / `0.000`	This parameter will **NOT** be prompted when input type is selected as Thermocouple (TC-J,K,R,S,N & B) & RTD. By this parameter user can select four format of resolution only for analog input, i.e. "0.000, 0.00, 0.0, 0". For range limit as per resolution selected Ref. Table No.2 (Page No. 4).	0

PARA METER	DISPLAY	DESCRIPTION	DEFAULT
ANALOG INPUT LOW VALUE	`Ai.Lo` > `0`	By this parameter user can define Low scale for input signal. Which can be in between '-1999 to Ai.Hi'. For range limit as per resolution selected Ref. Table No.2 (Page No. 4).	0
ANALOG INPUT HIGH VALUE	`Ai.Hi` > `1200`	By this parameter user can define HIGH scale for input signal. Which can be in between 'Ai.Lo to 9999'. For range limit as per resolution selected Ref. Table No.2 (Page No. 4).	1200
Analog Input Logic	`A iLG` > `dir` ∨ ∧ `rEu`	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	`OFSt` > `0`	Function of this parameter is to add/subtract a constant value to the measured PV to obtain Final PV. For range limit as per resolution selected Ref. Table No.2 (Page No. 4).	0
INPUT FILTER	`FLtr` > `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.	04
USER LOCK CODE	`U.LOC` > `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 SHIFT 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
User Calib. Lock	`UC.LY` > `0`	Set this parameter to "7" (Default LOCK CODE) to access User Calibration List.	7
Low Calib- ration	`LCAL` > `0`	This parameter allows the user to program "Lower Calibration" values other than factory programed 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 Calib- ration	`HCAL` > `9999.`	This parameter allows the user to program "Higher calibration" values other than factory programed 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	`F.dEF` > `YES` ∨ ∧ `n0`	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 1 :- Range of Different Sensor Types.

Sensor Type	Range	Resolution	Accuracy
Fe-k(J) T/C	0 ~ 760°C	1 °C	
Cr-AL(K) T/C	-99 ~ 1300°C	1 °C	
(R) T/C	0 ~ 1700°C	1 °C	
(S) T/C	0 ~ 1700°C	1 °C	
TC - N	-99 ~ 1300°C	1 °C	± 1 °C
TC - T	-99 ~ 400°C	1 °C	
TC - B	0 ~ 1800°C	1 °C	
Pt-100(RTD)	-100 ~ 450°C	1 °C	
Pt-100(RTD 0.1)	-100.0 ~ 450.0°C	0.1 °C	± 0.3 °C

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
"OPEN"	TC-J,K,R,S,N,B or RTD	**Open Circuit of Control Sensor**
"HHHH"	TC-J,K,R,S,N,B or RTD	**If input is above HSPL it will display "HHHH" message.**
"HHHH"	0 ~ 20 / 4 ~ 20 / 0 ~ 10	**If input is above range it will display "HHHH" message.**
"LLLL"	TC - J,K,R,S,N,B or RTD	**If input is below LSPL it will display "LLLL" message.**
"LLLL"	0 ~ 20 / 0 ~ 10	**If input is below '0' it will display "LLLL" message.**
"LLLL"	4 ~ 20	**If input is below "3.8mA" and above "3.2mA" it will display "LLLL" message.**
"L.BRK"	4 ~ 20	**If input is less than "3.2mA" it will display "L.BRK" (Loop Break) message.**
"C.E.R.R."	Any Input Selected	**The device is out of calibration and need to be sent to factory for re-calibration.**