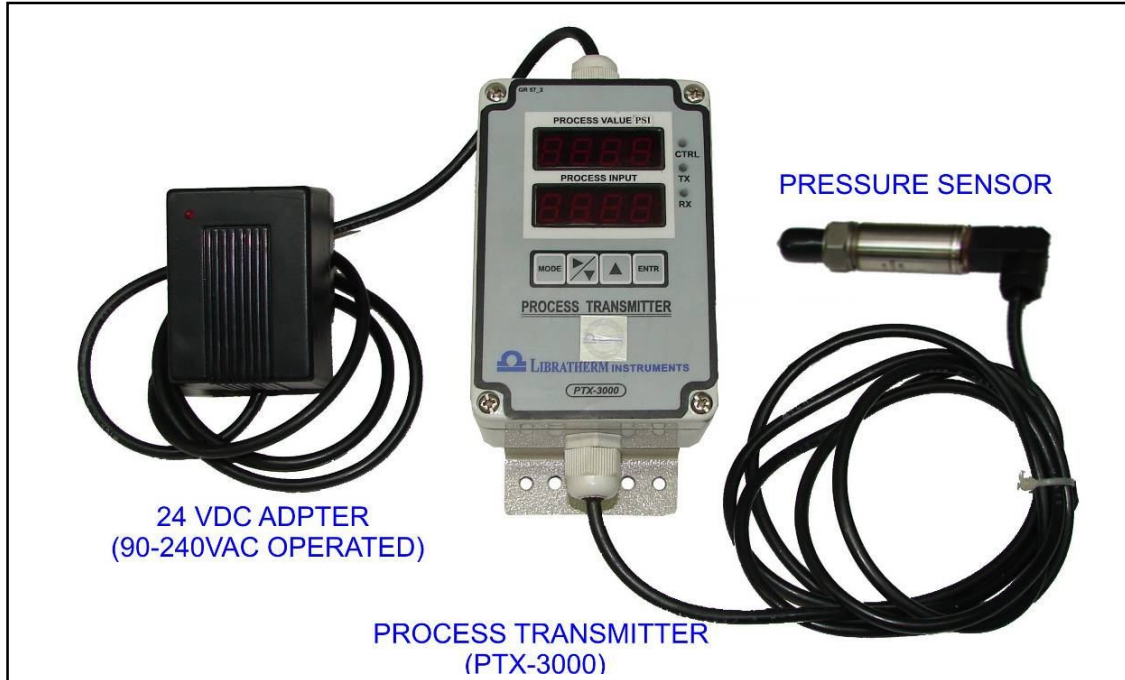


Process Transmitter with 4-20mA / RS-485 Interface (Model PTX-3000) (Product Code 17.1 To 17.3)



Model Wise Description:

Sr.No	Model	Product Description	Size (mm.)
17.1	PTX-3000-U	Process Transmitter – with universal input/single 4-20mA and RS485 interface. (8 user selectable)	120 x 80 x 55
17.2	PTX-3000-F	Process Transmitter – with single fixed input/single 4-20mA and RS485 interface.	120 x 80 x 55
17.3	PTX-3000-T	Process Transmitter – with two same input/Dual 4-20mA and RS485 interface.	120 x 80 x 55

Description:

Libratherm offers micro-controller based Process Transmitter model **PTX-3000** for measuring and transmitting the analogue and digital values proportional to the low level field signal.

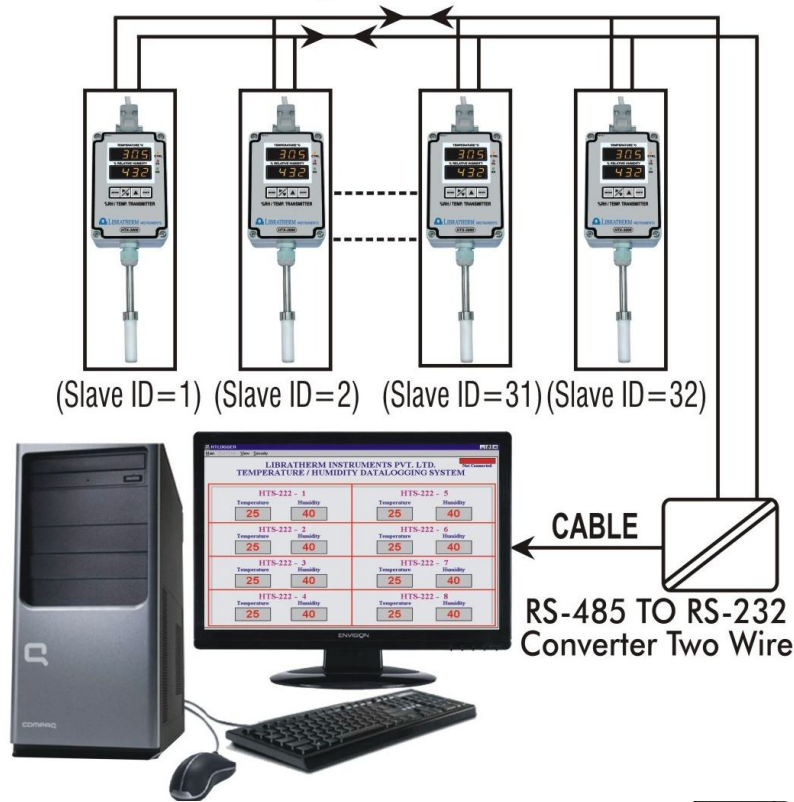
For input selection, three options are available, where user can specify the desired model for a) universal input (max. 8) or b) any of the two fixed inputs or c) any of the single fixed input.

Temperature or Process values corresponding to the input is indicated on the display and the corresponding display range is converted to the 2 wire isolated current output of 4-20mA signal proportional and linearized to the process input. This linearized signal can be used for remote measurement and indication. For the dual input model **PTX-3000-T**, two independent 4-20mA signals are available. For process inputs like 4-20mA or (0-10)VDC the display range is user scalable from -1999 to + 1999 counts or 0 to 4000 counts with facility to program the desired decimal point.

For digital interface with PLC or DCS or with any other process controller – the measured and displayed analog input is converted to 2 wire serial signal on RS485 bus with MODBUS RTU protocol in slave mode.

Advantage of RS485 interface: Providing the feature of RS 485 digital serial interface is advantageous, since the number of wires coming from the various sensors can be avoided and instead, only two wires can be used to interface multiple such PTX-3000 on serial port. For example, for a large heating system incorporating 16 thermocouples, under conventional method 16 dual core compensating cables will run from the heating system to the control panel, where as in case of RS485 interface, only two wires will run from the system to the control panel. Another advantage of RS485 interface is that, when to be interfaced with PLC – the additional analogue module is not required, since most PLC accepts RS485 interface on MODBUS RTU protocol.

32-Channel DATALOGGER Data Logging using 32 Nos. PTX-3000 on PC using RS-485 interface.



Features:

- ❖ Microcontroller based design.
- ❖ Universal industrial input (user selectable).
- ❖ Isolated 4-20mA proportional and linearized for the selected input.
- ❖ RS-485 MODBUS RTU serial interface.
- ❖ Bright red LED display.
- ❖ IP 65 ABS plastic enclosure.
- ❖ Operates on 24VDC.



Technical Specification:

Input Sensor	J,K,R,S,B thermocouple or RTD (Pt-100) or 4-20mA/0-10VDC signal (Input type not listed here can also be provided)
Range	Full range of the selected input – desired measuring range can be chosen from range selection table. For 4-20mA/0-10VDC the display range is scalable from -1999 to +1999 and 0 to 4000 counts with selectable decimal point.
Accuracy	Software linearized to +/-1 °C for thermocouple input and +/-0.1°C for Pt-100 input. For Voltage and Current – the accuracy is absolute to the input.
Power Supply	24VDC +/- 10% @ 150mA (External or through 24vdc adapter)
Current Output 1	4-20mA proportional to the specified range of the user selected input. (12 bit resolution). – 2 wire
Current Output 2	4-20mA proportional to the specified range of the second specified input. (12 bit resolution). For PTX-3000-T
Digital Serial Output	Isolated 2 wire RS485 on MODBUS RTU protocol in SLAVE mode
Isolation	4-20mA and RS485 outputs are isolated from DC Power supply. Isolation voltage > 1.5KV DC.
Loop Resistance	RLmax = 400 Ohms - for each output.
Display	4 digit - 0.3" red seven segment LED . 4 digit each for PTX-3000-T
Connection	2 or 3 wire for sensor input, 2 wire for DC supply and 2 x 4-20mA for current outputs, 2 wire for RS-485 outputs.
Cable Entry	Through suitable size gland for supply and input/output.
Enclosure (Size)	ABS plastic IP-65 (120 x 80 x 55) mm.

Input and Range Selection Table:

Code	Input	Range
A1	Factory set to 8 universal inputs marked (*) below : A2,A3,A4,A5,A6,A13,A15,A17	Subject to input
A2	J type : Fe/Con thermocouple (*)	0 to 760 °C
A3	K type : Cr/Al thermocouple (*)	0 to 1372 °C
A4	R type : Pt/PtRh13% thermocouple (*)	0 to 1768 °C
A5	S type : Pt/PtRh10% - thermocouple (*)	0 to 1768 °C
A6	B type : Pt30%Rh/Pt6%Rh thermocouple (*)	200 to 1820 °C
A7	T type : Cu/Con thermocouple	0 to 350 °C
A8	E type : NiCr/CuNi thermocouple	0 to 900 °C
A9	C type : W5%Re/W26%Re thermocouple	0 to 2300 °C
A10	D type : W3%Re/W25%Re thermocouple	0 to 2300 °C
A12	Pt-100 (Alpha = 0.00385) DIN 43760 (*)	0.0 to 400.0 °C
A13	Pt-100 (Alpha = 0.00385) DIN 43760	-100.0 to 200.0 °C
A14	Pt-1000 (Alpha = 0.00385) DIN 43760 (*)	0.0 to 400.0°C
A15	Pt-1000 (Alpha = 0.00385) DIN 43760	-100.0 to 200.0°C
A16	4-20mA (*) – with programmable decimal point	-1999 to 1999 units
A17	4-20mA (*) – with programmable decimal point	0 to 4000 units
A18	0-10VDC (*) - with programmable decimal point	-1999 to 1999 units
A19	0-10VDC (*) - with programmable decimal point	0 to 4000 units

Ordering Information for Model PTX-3000-U, PTX-3000-T, PTX-3000-F:

Model	A- Input	B- Retransmission	C – Serial Communication
PTX-3000-U	A1- (Factory set to 8 inputs)	B1- (4-20mA x 1) For PTX-3000-U and F	C1 - RS 485 (Yes)
PTX-3000-F	A2 to A18- (Single Fixed input)	B2- (4-20mA x 2) For PTX-3000 - T	00 - (None)
PTX-3000-T	A2 to A18- (Two Fixed inputs both of the same type)	00- (None)	

Examples:

Model	A- Input	B- Retransmission	C – Serial Communication
PTX-3000-U	A3	B1	00
PTX-3000-F	A16	00	C1
PTX-3000-T	A16	B2	00

Example	Ordering Code	Description
1	PTX-3000-U-A3-B1-00	This is a process transmitter with K type thermocouple input and 4-20mA current output which is linear and proportional to the display range of 0 to 1372oC.
2	PTX-3000-F-A16-00-C1	This is a process transmitter with 4-20mA input and display range of 0.0 to 100.0% with RS 485 serial output.
3	PTX-3000-T-A16-B2-00	This is process transmitter with two 4-20mA type input and dual 4-20mA current output which is linear and proportional to the display range of 0 to 4000 counts.

REMARK :