Instruction Manual

(Digital Differential Pressure Transmitter)

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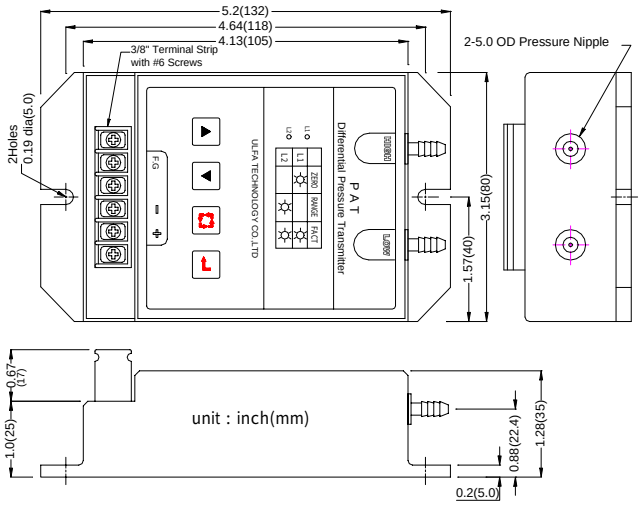


General

PAT Series pressure transmitters are measures positive, negative(vacuum) and differential pressure of air or non corrosive gases, and for the variously choice of ranges available to suit your needs precisely.

The PAT Widely used to measure fan and blower pressures, filter resistance, pressure drop across orifice plates, liquid levels in storage tanks and many other applications. The PAT has one touch zero set functions. It is very easy to set and use by front pad key.

Accuracy is +/-0.25% of full scale.

Range selection table

MODEL No	Range	Resolution
-B15M	±15.0 mmH_2O	0.1 mmH_2O
-B150M	±150.0 mmH_2O	0.1 mmH_2O
-B1500M	±1500 mmH_2O	1 mmH_2O
-B760H	±760 mmHg	1 mmHg
-D30M	0~30.0 mmH_2O	0.1 mmH_2O
-D300M	0~300.0 mmH_2O	0.1 mmH_2O
-D3000M	0~3000 mmH_2O	1 mmH_2O
-B01K	±1.000 kg/cm^2	0.001 kg/cm^2
-B07K	±7.00 kg/cm^2	0.01 kg/cm^2
We can apply to other user specification (Pressure units and range)		

Specification

GENERAL

Maximum Pressure:	Rated Range x 3
Media Compatibility:	Air and non corrosive gas
Pressure Range:	Refer to range table

ELECTRICAL

Power Supply:	Ext DC24V 2 Wire loop power
Connections:	2 screw terminal block
Warm up Time:	15 minutes

TRANSMITTER

Connections:	2 Screw terminal block
Output Signal:	4-20mADC(limited at 30mADC)
Loop Resistance:	0 - 1100Ω
Zero & Span Adj:	One touch Adjustable on Panel

PERFORMANCE AT 23 ℃

Zero Output:	4 mA(Adjustable)
Full Span Output:	20 mA(Adjustable)
Accuracy:	±0.25 % FSO(Includes Linearity, Hysteresis & Repeatability)
Operating Temperature:	0 to 70 ℃

MECHANICAL

Pressure Connections:	ϕ5 OD Nipple
Materials:	Aluminum Case
Weight	600g

STANDARD ACCESSARIES

Instruction Manual

Installation

LOCATION : Select your site location , Clean and dry, no shock and vibration, proper to the ambient temperature and humidity in use.

MOUNTING

The PAT Series Digital Pressure Transmitter is designed for floor and wall mounting.
You may prepare the horizontal or vertical location and tightening PAT .

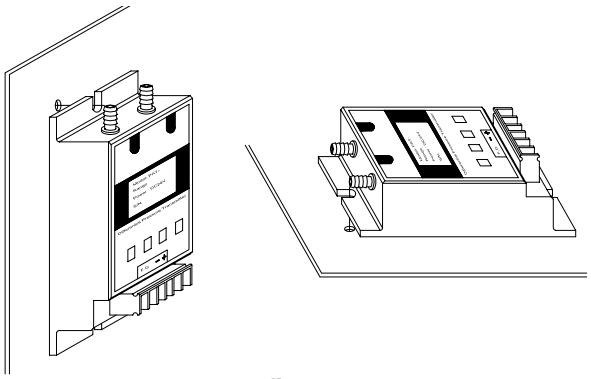


fig.1

PRESSURE PORT CONNECTION

Tow(2) ϕ5 barbed nipples are mounted all PAT Series Pressure Transmitter

1. Standard pressure connections are barbed nipples for 3/16" I.D. tubing.
2. If you use the PAT to measure differential pressure, high pressure is connect to 'HIGH" port, and low pressure is connect to "LOW" port.
3. If you use PAT to measure single pressure, positive pressure is connect to "HIGH" port and negative pressure(vacuum) is connect to "LOW" port. (In this case, another port is open to air)

Caution : do not supply shock pressure to pressure ports. It may cause to sensor broken

Wiring

POWER CONNECTION

The following procedures are to be used to install a standard 24V DC main power source.

1. Before connection, the user must first confirm that the power specification is DC24V or others.
2. Verify that the facility's main power source is turned off or disconnected.
3. Connect lead cable to power terminal matching polarity as shown in FIG.2 below. Take care that wrong wiring will damage the Instrument and malfunction.

CURRENT OUT CONNECTION(4-20mA)

The PAT sends a standard 2wire 4-20mA current out

1. Connect lead cable to current out terminal matching polarity as shown in FIG.2 below.
2. Do not run the signal cable along with any high voltage or power cable or put them in the same race way. It may cause malfunction due to induction.

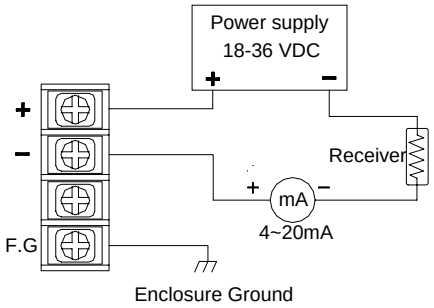
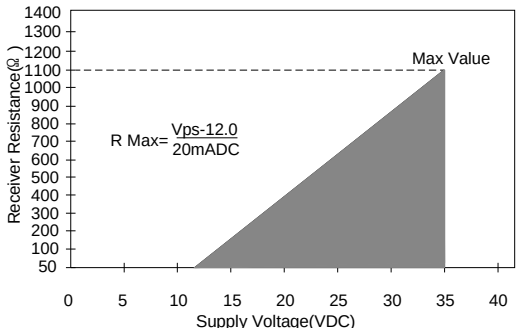


fig.2



POWER ON

Reconfirmation your connection is correct. And power switch on.

Function

Zero setting : Optimize current out to zero (4mA, 12mA-both type) automatically by front key pressed.

Sampling time setting : Sample rate is 0.1sec of this product. Sampling time is measuring time by sample rate. For example, if setting time is 2 sec, PAT measures 20 times for 2 seconds and out to display and 4-20mA out put by average of 20 times measured value.

Transmitter : PAT has 4-20mA current out put. Span (20mA) range can be changed within original range.

Over pressure warning : PAT displays warning on LED for over pressure (positive and negative). L2 LED blink for warning when measurement pressure over 10% for high pressure(factory setting value), L1 LED is blinked while normal measuring status.

Factory setting recovery : This function is initializing PAT to factory out status.
The parameters are changed all to factory setting value and all user setting value is cleared.
This function is useful to clear extraordinary user setting and recall to factory setting value.

Setting and Calibration

Hear by describe key function and setting methode. Please read this section carefully for the correct and optimum use of this product.

Key functions

▲	UP	- Increase setting value - Offset mode set/reset
▼	DOWN	- Decrease setting value - Peak pressure mode set/reset
	MODE	- Entering into the setting mode - Setting item circulation
↵	ENTER	- Save setting value - Clear peak value in the peak mode - Release setting mode

Setting and Calibration

User setting mode

Entering User setting mode : Press MODE key for more than 3seconds till L1 on for into the user setting mode. Press the MODE key once in user setting mode to change setting item. The setting item circulate " Zero " ⇒ " SPAn " ⇒ " FACt " ⇒ " I n t " while mode key press repeated.
Each item setting methode is refer to next.

Save : If you complete your setting in the each mode, Press ENTER once to save and exit to measure mode.
Press ENTER for more than 3 seconds till L1,L2 blinked rapidly to save and exist in the setting mode.

Release User setting mode :
Select " I n t " mode(L1,L2 blink). Press ENTER once to save and exit to measure mode.
If you are not operate this instrument for about 1 minute, It's released user setting mode automatically and return to measuring mode.

Zero setting

Optimize zero current out automatically by front key pressed.

CAUTION : Release pressure port free before zero set

1. Press MODE key for more than 3seconds till L1 LED is on for into the user setting mode.
2. Press ENTER key once shortly, then PAT automatically zero set and release user setting mode . It takes a few seconds.
3. If you press ENTER key for a long time till L1,L2 Blinked rapidly . Then PAT automatically zero set and remain user setting mode. It takes a few seconds.

The current out is optimized 4.0mA after complete zero set. (Both type(±out) PAT is optimized 12.0mA.)

Range setting

This function is set pressure level to 20mA current out, That is set span. PAT can be set any pressure level to 20mA current out between low and high pressure ranges.
Low and high pressure ranges are setting in factory.

Range setting

First of all, Supply pressure for setting level you want. For example, if you want to set range 100mmH_2O, then you have to supply 100mmH_2O pressure to PAT.

1. Press MODE key for more than 3seconds till L1 is on for into the user setting mode.
2. Press MODE key once shortly till L2 is on
3. Press ENTER key once shortly, then PAT automatically range set and release user setting mode . It takes a few seconds.
4. If you press ENTER key for a long time till L1,L2 Blinked rapidly . Then PAT automatically range set and remain user setting mode. It takes a few seconds.

Recall to Factory setting value

This function is recall to initial states of factory out from unmatched user parameters that zero, range etc.

1. Press MODE key for more than 3seconds till L1 is on for into the user setting mode.
2. Press MODE key once shortly till L1,L2 is on
3. Press ENTER key once shortly, then PAT automatically Initialize factory out states and release user setting mode.
4. If you press ENTER key for a long time till L1,L2 Blinked rapidly . Then PAT automatically Initialize factory out states and remain user setting mode.

Sampling time setting

It can be set 0.1~5.0 seconds by 0.1 sec resolution. PAT is reading pressure 0.1sec interval for a setting time and calculate average pressure to 4-20mA output.

(ex) setting time : 2 sec

PAT measure pressure 20 times for 2 seconds and calculate average of measured 20 data to 4-20mA current output.

This functions is useful to measure hunted pressure.

Default setting time is 0.5sec.

Time is indicated by current out. Default current is 10.5mA(0.5sec)

Sampling time setting

ex) 10.1mA (0.1 sec) , 10.5mA (0.5 sec)
11.0mA (1.0 sec) , 15.0mA (5.0 sec)

1. Connect current meter on excitation power loop
2. Press MODE key for more than 3seconds till L1 is on for into the user setting mode.
3. Press MODE key once shortly till L1,L2 is blink. Then current meter indicate present setting value
4. Set new time you want by use Up & Down key and check the current meter .
5. Press ENTER key once shortly, then PAT save new setting value and release user setting mode.
6. If you press ENTER key for a long time till L1,L2 Blinked rapidly . Then PAT save new setting value and remain user setting mode.

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