

PB570-P series is a new kind of differential pressure transmitter, which has main and auxiliary screens for double display. The working status of the instrument can be known 10 meters away. With Bluetooth technology, the non-contact setting of the manual operator can be carried out, which is more convenient for the working condition of manual key pressing due to unsuitable installation position.

This transmitter is more suitable for monitoring pressure and flow in air conditioning system and laboratory.

A group of analog signal output can carry out two groups of switch alarm signal at the same time.

This product has two series: ordinary type and explosion-proof type.



Characteristic

1. Multi-angle and long-distance view thanks to 5-bit wide screen LED digital display
2. Light strip for remote monitoring
3. Easy and fast setting and operating from the manual operator
4. High stability thanks to robust design, excellent membrane technology, and ceramic combination
5. Simple installation
6. Maintenance-free

Typical applications

- Filter monitoring
- Flow measurement
- Clean room monitoring
- Fume hoods

Specifications

Reference condition:	25°C
Accuracy:	0.2%FS,0.5%FS
Repeatability:	0.1%FS
Measurement ranges:	100Pa~25kPa, $\pm 100\text{Pa} \sim \pm 10\text{kPa}$
Overload capacity:	25kPa(span \leq 1kPa), 50kPa(Span $>$ 1kPa)
Common-mode Pressure:	$\pm 70\text{kPa}$
Protection class:	IP66

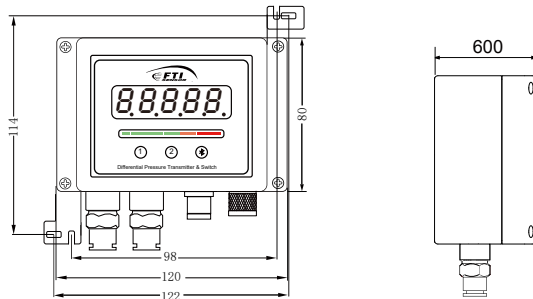
Temperature limits

Operating:	-20~80°C, -20~60(expllosion-proof type)
Storage:	-30~80°C
Compensated:	0~50°C

Temperature Coefficients

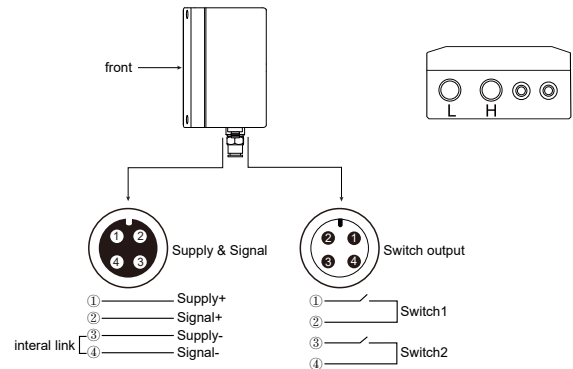
Zero:	0.2%FS/10°C
Span:	0.5%FS/10°C
Media:	Clean, Dry Air/Non-Corrosive Gas
Display:	5 Digits LED, 12 Segments Light trip
Output Signal:	4-20mA(3wire)
Switch output:	EMR(2A 30VDC / 2A 250VAC) SSR(0.1A 60V AC/DC RON $<$ 0.8ohm(typ.))
Supply Voltage:	10-32VDC(Nominal 24VDC)
Power consumption:	approx. 0.8W
Span Adjustment:	25%~300%(basic measurement range)
Explosion-proof:	EX ia II CT4
Signal-Ui:	28VDC, Li:93mA, Pi:0.66W, Ci:0 μ F, Li:0mH
Switch-Ui:	30VDC, Li:100mA, Pi:42W, Ci:0 μ F, Li:0mH
Electrical Connection:	2 x round plug connector M12
Pressure Connection:	for tubing $\phi 8$ (Standard)
Mounting:	Wall Mount (Standard)

Dimensions



unit: mm

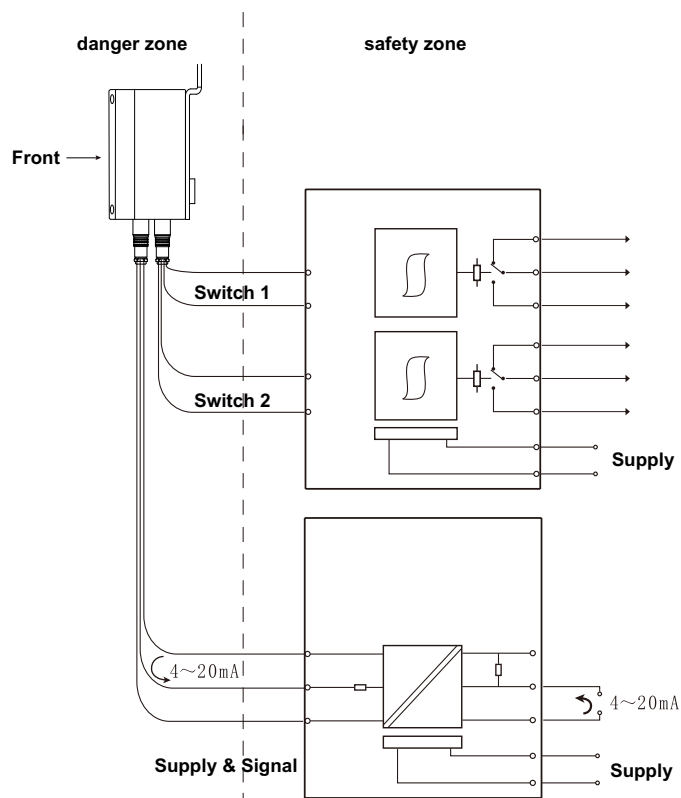
Electrical connection



Installation and operation

PB570 can be mounted on a wall or other appropriate flat plates fixed by assembly bracket, but typically vertical installation. It can be fixed with M4 screws. As for assembly bracket specification, please refer to "Dimensional drawing".

Connection Diagram of PB570-P Intrinsic Safety Type



Process connection

Pressure connection port adopts quick-fit pneumatic connector, adapting to pneumatic tubes with $\phi 8/\phi 6$ (for instance, PE tube). The pressure connections are marked with (H) and (L) symbols on the device. For differential pressure measurements, the higher pressure is connected to the (H) side and the lower pressure to the (L) side of the device. Make sure that the pneumatic tube be inserted in place to avoid loose air tightness.

Electrical connection

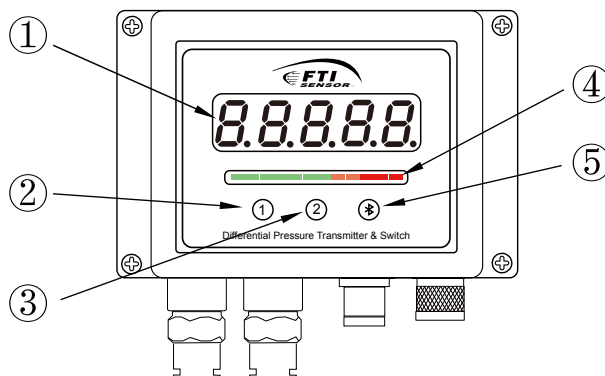
Two aerial plugs are used for electrical connection. Power supply and signal output shared one, while two switch outputs shared the other. Please follow the "Connection diagram" to wire the aerial plugs. Wires with OD 4~6mm are suggested. Intrinsic safety type must be used with safety fence in order to form an intrinsically safe explosion-proof system (See pic above: Connection diagram of PB570 intrinsic safety type). Please note the distinction that the supply voltage of intrinsic safety type is lower than that of general type.

Caution

Improper installation method may produce overload pressure, even exceeding the admissible upper limited value, resulting in product damage. During operation, it is necessary to prevent from exceeding the upper limit of the overload pressure, otherwise it will cause damage to the product. During installation and operation of intrinsic safety type, in addition to this instruction manual, installers and operators must also comply with the following regulations: GB336.13-2013 Explosive atmospheres-Part 13: Equipment repair, overhaul and reclamation, GB3836.15-2000 Electrical apparatus for explosive gas atmospheres-Part 15: Electrical installation in hazardous areas (other than mines), and GB3836.18-2010 Explosive atmospheres-Part 18: Intrinsically safe system.

Commissioning and setting

Display



- 1. Measurement display
- 2. Switch 1
- 3. Switch 2
- 4. Measurement ratio display
- 5. Bluetooth

Parameter setting

PB570-P series are based on Bluetooth communication. The device can be completely set conveniently on a device communicator, with no need for complicated key-press. Device communicator, similar to a smart phone, is an intelligent device that runs a dedicated APP. Further guidelines on this program can be found in the documentation for this program.

Parameter overview

Damping

If there are unsteady pressure readings, you can use damping setting to stabilize the reading and signal output. The damp setting range comprehends 0.0~100.0s. However, with maximum damping, it will take more time to response. In actual use, please reasonably set damping according to measurement and control requirements.

K1 Switch-off point, K1 Switch-on point

Together, K1 Switch-off point and K1 Switch-on point determine the control effects. There are 3 different control effects.

- 1) If switch-off point is smaller than switch-on point, the output switch on if measuring value exceeds switch-on point and off if measuring value underruns switch-off point.
- 2) If switch-off point and switch-on point are equal, the output switch on if measuring value exceeds switch-on point and off if measuring value underruns switch-off point.
- 3) If switch-off point is larger than switch-on point, the output switch on if switch-on point < measuring value < switch-off point, and off otherwise.

K1 Delay

K1 Delay allows the reaction of the switching output to be delayed by 0.0 to 100.0s. This value applies equally for switch-on and switch-off.

K2 switch-off point, K2 switch-on point, K2 Delay

Please refer to related parameters of Switch 1

Light Strip Function

0: Default

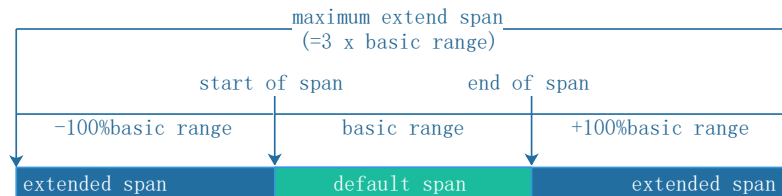
1: Segmented display

Default: Light strip display is based on the ratio of current measuring value to measuring range. For example, the measuring range is 0~1000, current measuring value is 500. The first half of light strip will light up.

Segmented display: The measuring range is divided into 3 segments by the switch-on points of two switches, which are respectively green, orange and red. The light strip segment or segments will light up where current measuring value is located. The segment will light up proportionally. For example: The measuring range is 0~1000. Switch-on point of switch 1 is 700. Switch-on point of switch 2 is 800. Therefore, the 3 segments are respectively 0~700, 700~800 and 800~1000. When measuring value is 300, about 40% of the green segment (0~700) will light up. When measuring value is 750, the whole green segment and half of the orange segment will light up. The ratio will be rounder off due to limited segments.

Start of Span, End of Span

Start of span is set in a way that results in a minimum output signal. End of span is set in a way that results in a maximum output signal. The user can modify the span as needed. The minimum span can be 1/4 of the basic measuring range. The span can be set extended outside the basic range (as shown in the pic below).



Note: The measurement accuracy cannot be guaranteed to completely meet the given accuracy parameter if the measuring range is extended.

Zero Point Stabilization

When the absolute value of the measuring value is smaller than this parameter, the measuring value is defined 0.

Offset

When measuring value deviation occurs, a deviation correction parameter ($\pm 1/4$ of measuring range) can be set. For example, at zero point, measuring display is 5Pa, the parameter can be set as -5Pa to correct output as 0.

Output Function

Output function refers to signal output mode.

0=linear

1=root-extracted

Output Lower Limit, Output Upper Limit

These two parameters are used to limit the range of output signal. For current output type, output lower limit can be set as 0.0mA, output upper limit as 22.0mA. For voltage output type, output lower limit can be set as 0.0V, output upper limit as 12.0V.

Actual signal output is limited by hardware. It cannot be absolute 0 even when set as 0.0mA.

Fault Output

When the device detects some internal errors, it will output a specified signal value (Fault Output). The device can only detect limited error conditions, such as sensor abnormality, calculation overflow, etc. When error detected, "Err" will also display in addition to outputting a specific signal value.

Maintenance

If you have any problems during installation and use, please contact our company in time. Do not disassemble the device for repairs without authorization. Installers and operators must strictly refer to the "Connection diagram" to prevent product damage.

During product installation and use, please avoid impacts and knocks to prevent excessive impact from damaging the product or affecting performance. It is recommended to check the zero point regularly, and correct the deviation through parameter setting to reduce the measurement error if necessary.