

DPT Series Differential Pressure Transmitter

PRODUCT DATA




Application

Differential pressure transmitters are used for acquiring the differential pressure of air in ventilation, air conditioning, and heating plants, which measures the pressure of air and nonaggressive gases with great accuracy and no offset drift. It can measure over- or under-pressure in air ducts in relation to ambient pressure as well as to monitor filters and to control fans and acquire pressure difference between different rooms. It can be widely applied to Air-conditioning and ventilation systems, Building automation, Environmental protection, Fan and ventilation control, Valve and shutter control, Filter and fan monitoring.

Features

- LCD display option
- High reliability & accuracy
- Rapid response
- Pressure range is selectable
- 4~20 mA, / 2~10 VDC Mod-bus RTU output

Specifications

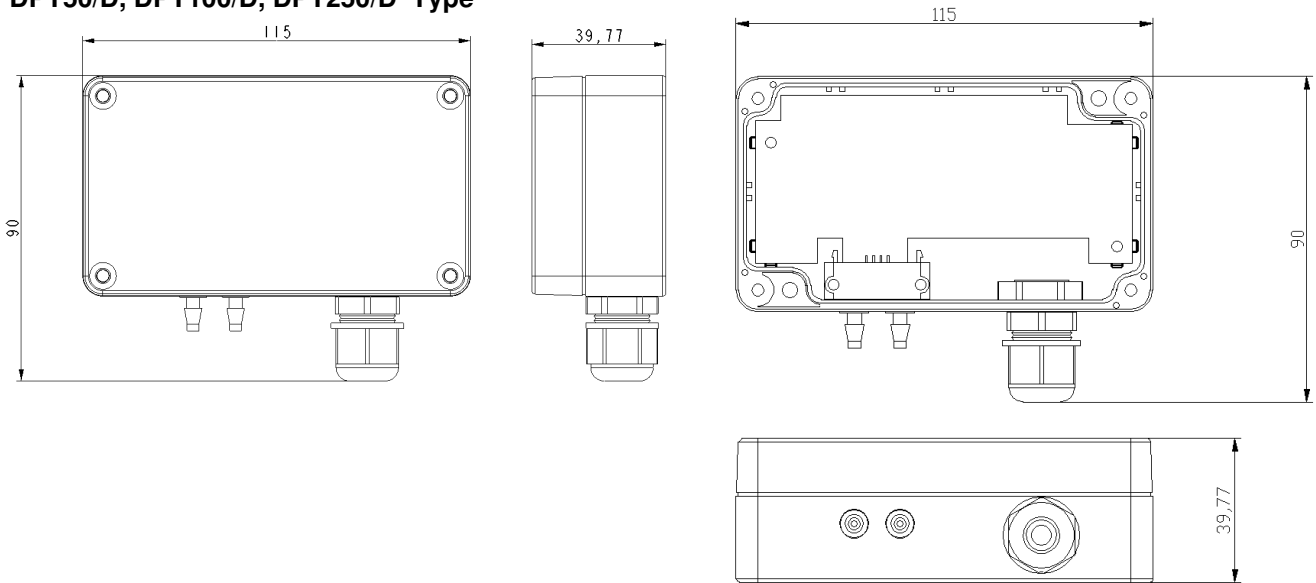
| | |
|------------------------------------|---|
| Sensor element : | Thermal flow-through principal: DPT50/D,DPT100/D,DPT250/D Piezo-resistive: DPT1000/D |
| Accuracy: | DPT50/D,DPT100/D,DPT250/D: 3% of full scale (FS) DPT1000/D: 1% of full scale (FS) |
| Signal Output: | 4~20mA , 2~10VDC,ModbusRTU |
| Media compatibility | Air, N2, O2 |
| Response time(T1/e) | 4.6 ms typical at 12-bit resolution |
| Linearity and Repeatability | ≤±1.0% of FS 0.2% of FS |
| Offset stability | < 0.1% / yr. |
| Withstand pressure | 1 bar |
| Burst pressure | > 5 bar |
| Power Supply: | 24 VAC/VDC ±10% |
| Power consumption: | <0.6W (peak value) |
| Current Output Load: | 500 Ohm Max |
| Warm-up time | Typ. 1s |
| Working temperature: | 0~50℃ |
| Storage | -10℃ ~ +70℃ |
| Certification: |  |
| Housing Material: | Plastic (ABS) Flame retarded acc. to UL94-V1 |
| Protection Standard | |
| Room type | IP54 |
| Installation | Wall-mount |
| Calibration: | Factory calibrated |

Model Selection

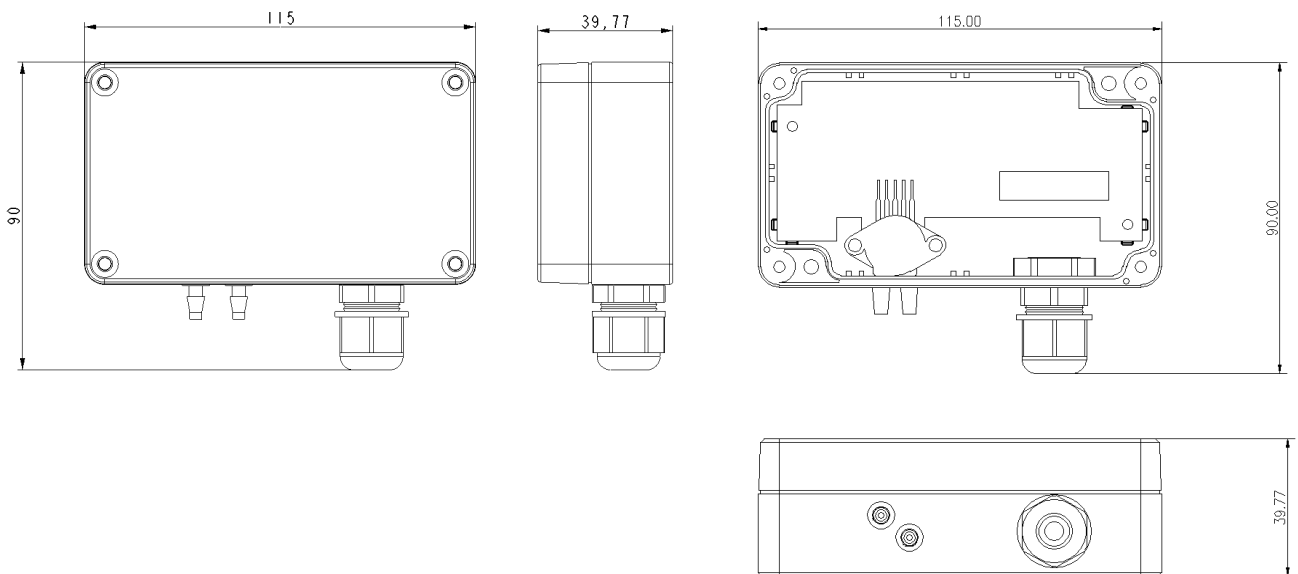
| Model | Range | Signal |
|----------|-----------------------|--|
| DPT50 | -50~+50Pa | 4~20mA / 2~10V + Mod-bus RTU |
| DPT100 | -100 ~+100Pa, | 4~20mA / 2~10V + Mod-bus RTU |
| DPT250 | 0~+250 Pa / 0~+500Pa | 4~20mA / 2~10V + Mod-bus RTU |
| DPT1000 | 0~+1000Pa / 0~+2500Pa | 4~20mA / 2~10V + Mod-bus RTU |
| DPT50D | -50 ~+50Pa | 4~20mA / 2~10V + Mod-bus RTU, with LCD |
| DPT100D | -100 ~+100Pa | 4~20mA / 2~10V + Mod-bus RTU, with LCD |
| DPT250D | 0~+250 Pa / 0~+500Pa | 4~20mA / 2~10V + Mod-bus RTU, with LCD |
| DPT1000D | 0~+1000Pa / 0~+2500Pa | 4~20mA / 2~10V + Mod-bus RTU, with LCD |

Appearance and Dimension (Dimension in mm)

DPT50/D, DPT100/D, DPT250/D Type



DPT1000/D Type



Wiring

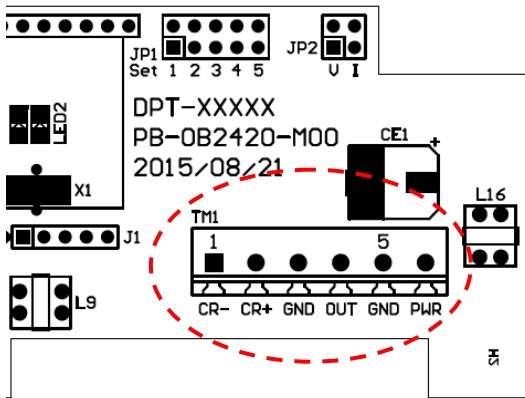
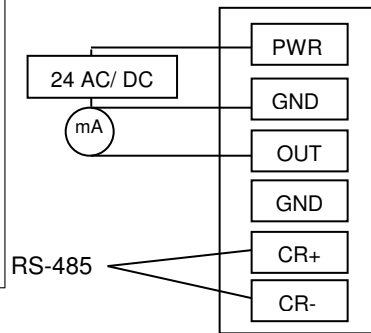
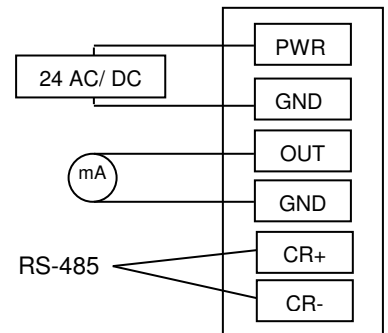


Figure 1

3-wire Connecting

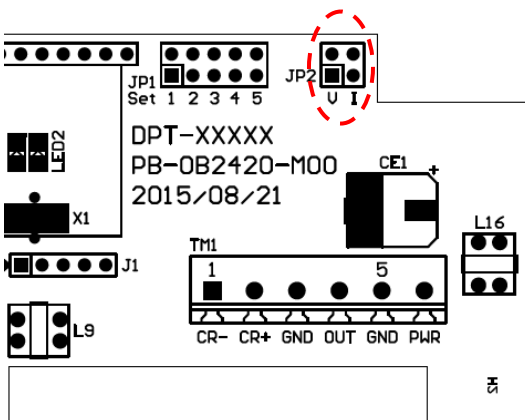


4-wire Connecting



| | | |
|----|-----|----------------|
| 1. | PWR | AC/DC 24V |
| 2. | GND | System GND |
| 3. | OUT | 4~20mA / 2~10V |
| 4. | GND | Signal GND |
| 5. | CR+ | RS-485 A(+) |
| 6. | CR- | RS-485 B(-) |

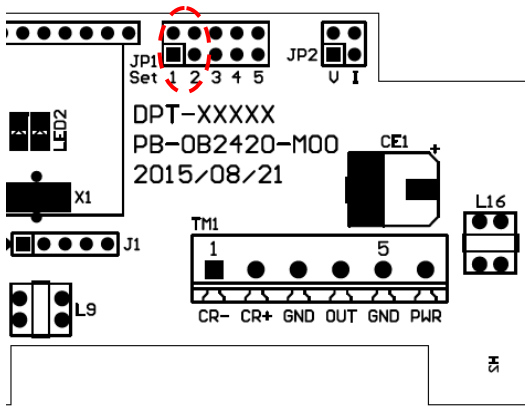
4~20mA / 2~10v Selection



JP2 are used to select 4~20mA / 2~10v linear outputs mode.

| Output Configurations | JP2 |
|-----------------------|-----|
| 4~20 mA(Default) | |
| 2~10 V | |

Pressure Range Selection



Jumper Setting Description

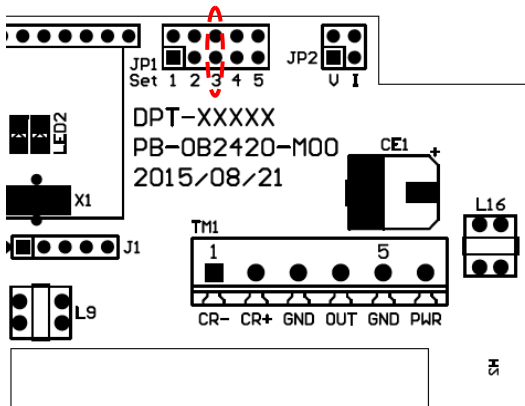
Use the shorting clip to **JP1** set measuring differential pressure range, 1: short circuit , 0: Open

| DPT50/ DPT50D | | |
|----------------------------|-------|-------|
| Range Selection | JP1-1 | JP1-2 |
| -50~+50 Pa | 0 | 0 |
| 0~+50 Pa(Default) | 0 | 1 |
| 0~-50Pa | 1 | 0 |

| DPT100/ DPT100D | | |
|-----------------------------|-------|-------|
| Range Selection | JP1-1 | JP1-2 |
| -100~+100 Pa | 0 | 0 |
| 0~+100 Pa(Default) | 0 | 1 |
| 0~-100Pa | 1 | 0 |

Differential pressure measuring range setting:

- JP1**-(1,2) is set to "0 1" set differential pressure measurement range from zero to positive pressure
- JP1**-(1,2) is set to "1 0" set differential pressure measurement range of zero to negative pressure difference
- JP1**-(1,2) is set to "0 0" set differential pressure measurement ranges from negative to positive pressure difference



Jumper Setting Description

Use the shorting clip to **JP1** set measuring differential pressure range, 1: short circuit, , 0: Open

| DPT250/ DPT250D | |
|------------------------------|-------|
| Range Selection | JP1-3 |
| 0~+250 Pa (Default) | 1 |
| 0~+500 Pa | 0 |

| DPT1000/ DPT1000D | |
|-------------------------------|-------|
| Range Selection | JP1-3 |
| 0~+1000 Pa (Default) | 1 |
| 0~+2500 Pa | 0 |

Differential pressure measuring range setting:

- JP1**-(3) is set to "0 1" set differential pressure measurement range from zero to positive pressure

Device ID Selection

Device ID : Setup device ID with dip switch;

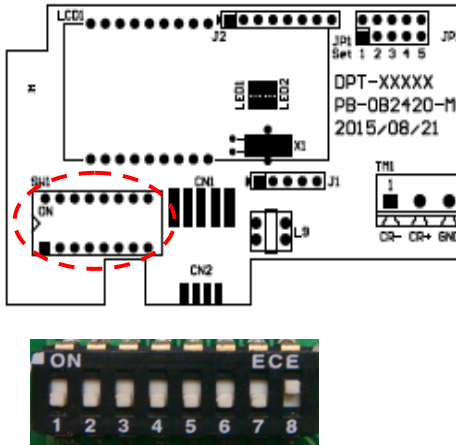
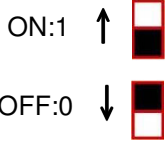





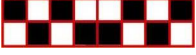
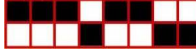

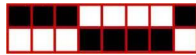









Figure 2

| Device ID (ON:1,OFF:0) | | | | | |
|------------------------|-----------|--|-----|-----------|---|
| 1 | 0000 0001 |  | 64 | 0100 0000 |  |
| 2 | 0000 0010 |  | 65 | 0100 0001 |  |
| . | . | . | . | . | . |
| 18 | 00010010 |  | 90 | 0101 1010 |  |
| 19 | 0001 0011 |  | 92 | 0101 1100 |  |
| . | . | . | . | . | . |
| 30 | 0001 1110 |  | 100 | 0110 0100 |  |
| 31 | 0001 1111 |  | 101 | 0110 0101 |  |
| . | . | . | . | . | . |
| 60 | 0011 1100 |  | 127 | 0111 1111 |  |
| 61 | 0011 1101 |  | 128 | 1000 0000 |  |

Protocol

Baud Rate = 9600 · Word Length = 8 · Parity = none · Stop Bits = 1 ·

Data Reading Type

| | Device ID | Function | Address | Data Length | Error Check |
|----------|-----------|----------|---------|-------------|-------------|
| Pressure | 01 | 03 | 0001 | 0001 | XXXX |

Responding Data Type

| | Device ID | Function | Data byte | Pressure | Error Check |
|----------|-----------|----------|-----------|----------|-------------|
| Pressure | 01 | 03 | 02 | 02DC | XXXX |

**** Remark 1 :**

XXXX is the CRC16 checksum (**Check Sum**) ·

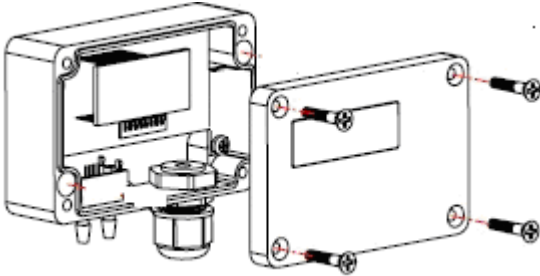
**** Remark 2 :**

Pressure resulting data in hex.

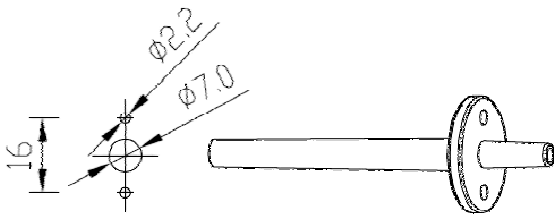
The resulting data is 0x02DC into decimal, ie 732 pa.

Installation

1. Place the lid loosen four screws to remove the cover



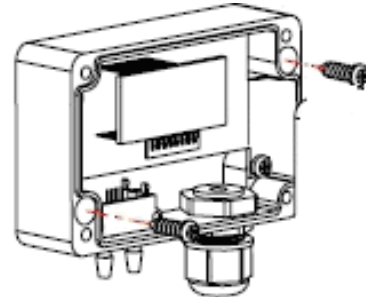
3. Drill two 7mm diameter circular hole in the desire to measure the duct, and in a round hole Drill two 2.2mm screws on each side of the hole to install and fixed guide pressure pipe.



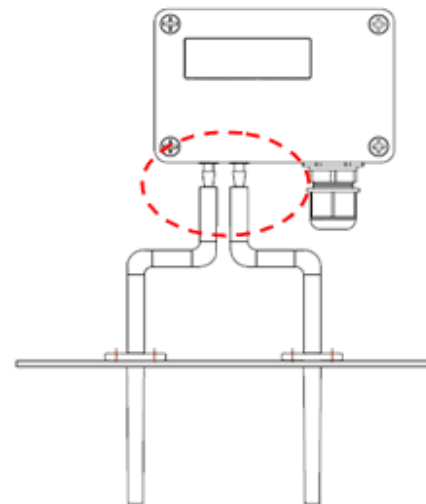
INSTALLATION GUIDE FOR DUCT MOUNT SENSOR OR TRANSMITTER:

- Drilling a mounting hole with diameter 13mm on the duct near measuring point. Insert the probe pipe into duct.
- Unscrew & open the front cover of the product.
- Use enclosed screws to install the wiring box on the duct.
- Lead wire from DDC or PLC panel through opening by using a properly sized screw driver to connect each wire to the terminals of the transducer module according to field wiring diagram.
- Put front cover back and tighten front cover by screw.
- Use a properly sized screw driver to connect the lead wires to the terminals.

2. To screw around on both sides of the diagonal direction, respectively, the body is fixed to the wall. If installed in the concrete wall, you need to match gecko fixed; if mounted on metal surface, it is only with screws.



4. Impulse control and measurement of the joint body, with parts in plastic sleeve connection, and according to wiring diagram to connect the signal line (current output, refer to Figure 1). Then screw lock back cover, namely to complete the



INSTALLATION GUIDE FOR WALL MOUNT SENSOR OR TRANSMITTER:

- Remove the front cover and place the back panel to the desired location.
- Attaching the enclosed screws to the back panel.
- Place the front cover to the back panel.
- Keep the sensor or transmitter away direct sun light, heat source and cold source.
- The recommended location of wall mount sensor or transmitter is 1.5M above the ground.
- Note: the documentation may be subject to change without pre-notification