

HPM3180 Compact Differential Pressure Transmitter



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Overview

HPM3180 differential pressure transmitter uses a silicon piezoresistive differential pressure core and features a stainless-steel process interface with strong corrosion resistance. The pressure interface is threaded, allowing direct installation on the measuring pipeline or connection via a pressure tap. Standard voltage, current output, and RS485 interfaces are available.

This compact and easy-to-install product is widely used in process control, equipment monitoring, and other fields for differential pressure, level, and flow measurement and control.

Features

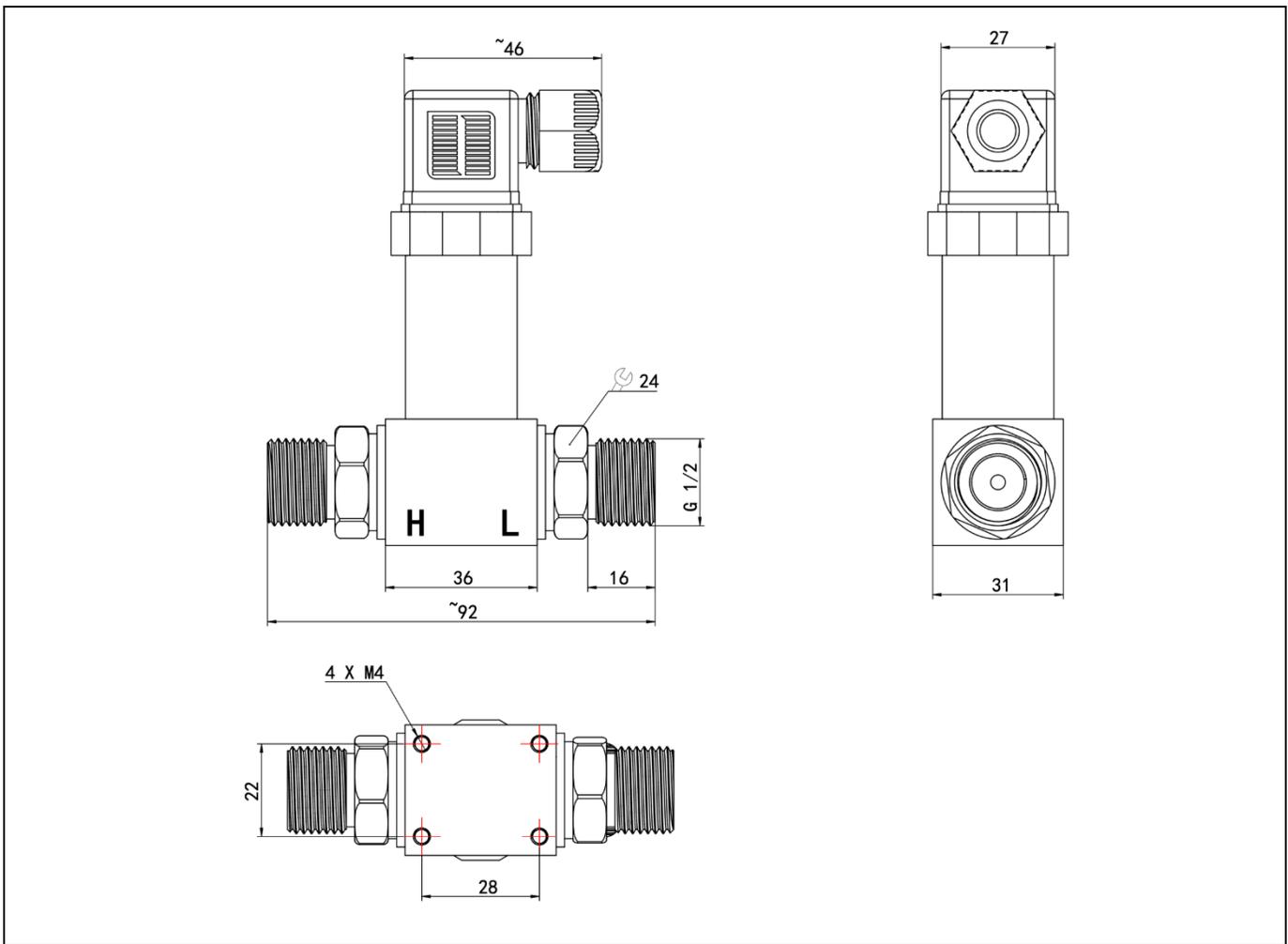
- ◆ Compact structure for differential pressure measurement
- ◆ 316L stainless steel diaphragm structure
- ◆ Multiple process connections
- ◆ Short circuit and reverse polarity protection

Technical Parameters

| | |
|--|--|
| Measuring Range | 0~10kPa...3.5MPa |
| Bilateral static pressure | ≤20MPa |
| Single-sided positive end | 1.5~2 times full scale |
| Single-sided negative end | 1 times full scale |
| Note: The upper and lower limits of the measuring range can be customized. Support the pressure at the negative pressure ends greater than that at the positive pressure end, such as -100~100kPa, -50~20kPa, etc. | |
| Measuring Medium | Various liquids gases compatible with contact materials |
| Output Signal/Supply(option1) | 2-wire 4~20mA / Vs=8~30V |
| Output Signal/Supply (option2) | 2-wire 4~20mA+HART / Vs=12~32V |
| Output Signal/Supply (option3) | 3-wire 0~10V / Vs=12~30V |
| Output Signal/Supply (option4) | 4-wire Modbus-RTU/RS485 / Vs=12~30V |
| Accuracy | ±0.5%FS @25℃ ±0.2%FS @25℃ |
| Long-term Stability | ±0.25%FS/year (0.5G accuracy) ±0.2%FS/year (0.2G accuracy) |
| Static pressure effect | ≤0.5%F.S./MPa |
| Temperature compensation range | 0~70℃ |
| Temperature Coefficient of Zero | ±1.5%FS Reference 25℃, within the temperature compensation range |
| Temperature Coefficient of Full Scale | ±1.5%FS Reference 25℃, within the temperature compensation range |

| | |
|-----------------------|--|
| Medium temperature | -40~100°C |
| Ambient temperature | -20~80°C |
| Storage temperature | -20~80°C |
| Process connection | G1/4 male thread G1/2 male thread M20×1.5 male thread, or other customized |
| Insulation resistance | >20MΩ, 500VDC |
| Dielectric strength | <2mA 500VAC 1min |

Structure Drawings (unit: mm)



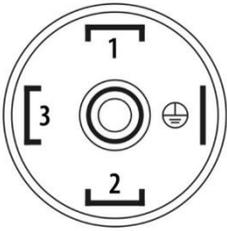
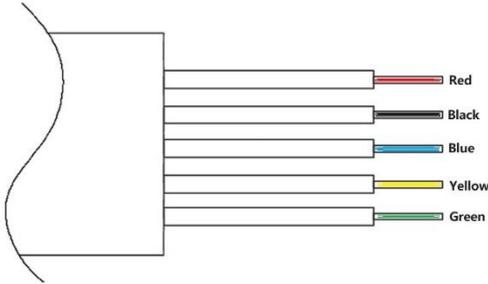
Note:

1. The dimensions listed in the diagram may change with updates to the manufacturing process.
2. For other shapes, please consult a sales engineer.

Structure Material

| Ordering Code | Part | Note |
|---------------|--------------------|--|
| S4 | Housing | Stainless steel 304 |
| S6 | | Stainless steel 316L |
| S4 | Process connection | Stainless steel 304 |
| S6 | | Stainless steel 316L |
| S6 | Sensor | Stainless steel 316L diaphragm |
| FK | O ring | FKM fluor rubber sealing ring (Applicable temperature range -20~200°C) (by default) |
| NB | | NBR nitrile sealing ring (Applicable temperature range -40~120°C) |
| ED | | EPDM sealing ring (Applicable temperature range -55~150°C) |
| HB | | HNBR hydrogenated nitrile sealing ring (Applicable temperature range -40~150°C) |

Electrical Connection

| DIN43650 (Order code: C1) | Cable outlet (Ordering code: C2) |
|---|--|
|  |  |

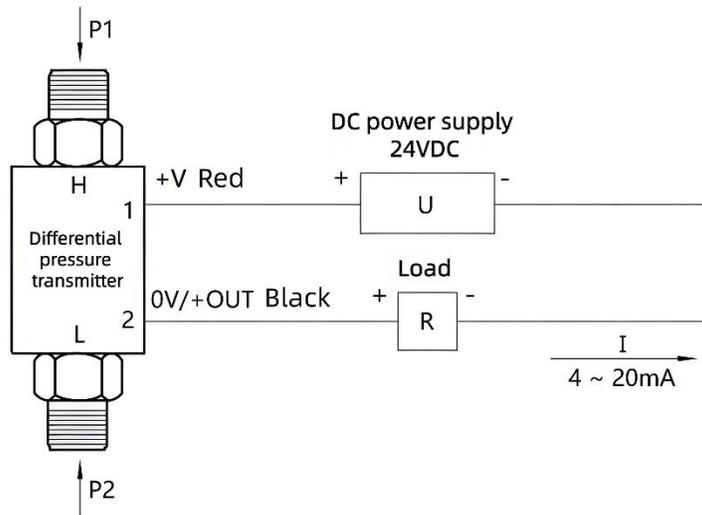
| 2-wire 4~20mA current output | | |
|------------------------------|------------|------------------|
| Signal definition | Power+(+V) | Power- (0V/+OUT) |
| DIN43650 | 1 | 2 |
| Cable outlet | Red | Black |

| 3-wire 0~5V/10V voltage output | | | |
|--------------------------------|------------|--------------|---------------|
| Signal definition | Power+(+V) | Power- (GND) | Signal+(+OUT) |
| DIN43650 | 1 | 2 | 3 |
| Cable outlet | Red | Black | Blue |

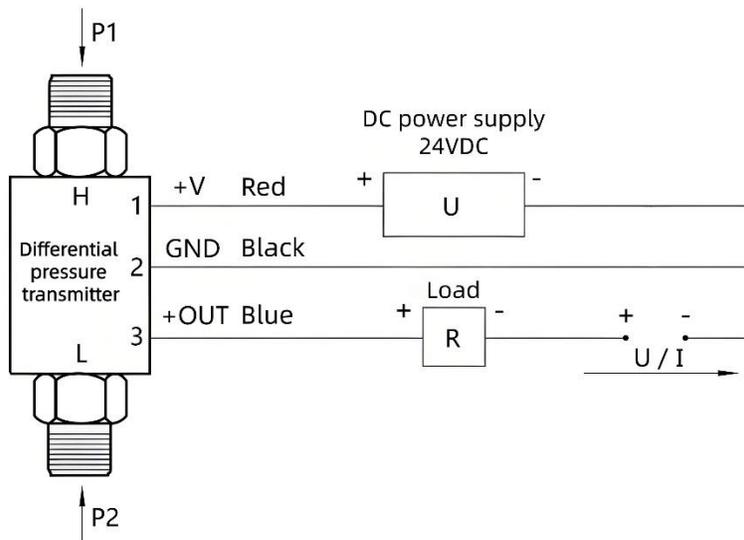
| 4-wire Modbus-RTU/RS485 | | | | |
|-------------------------|------------|-------------|--------|--------|
| Signal definition | Power+(+V) | Power- (-V) | RS485A | RS485B |
| DIN43650 | 1 | 2 | 3 | 4 |
| Cable outlet | Red | Black | Yellow | Green |

Electrical wiring diagram

2-Wire 4~20mA output



3-Wire voltage output



Ordering Guide

| Item NO. | Type | Measuring Range | | Output Signal | Process connection | Electrical Connection | Housing Material | Process Connection Material | Sensor Material | Others |
|------------|-----------------------------------|----------------------------|---|--|--|--------------------------------------|-----------------------------|-----------------------------|-----------------|--|
| HPM3180 | Differential Pressure Transmitter | Pressure Range (0-X)kPa | X is the upper limit of the measurement range | B1 (4-20)mA B3 (0-10)V B7 RS485 B8 HART | P1 M20×1.5 male G12 G1/2 male G14 G1/4 male | C1 DIN43650 C2 Cable Outlet | S4 SS304 S6 SS316L | S4 SS304 S6 SS316L | S6 SS316L | FK FKM fluor rubber sealing ring(by default) NB NBR nitrile sealing ring J5 0.5 G accuracy(by default) J2 0.2 G accuracy(by default) QF With factory report Others customized requests |
| eg:HPM3180 | | (0-20)kPa | | B1 | P1 | C1 | S4 | S4 | S6 | FK J5 QF |

Certification Information

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|----------------------------|---|
| Factory certification | |
| Certification organization | CQM |
| Quality management system | ISO 9001:2015 |
| Certification scope | Research, development and manufacture of pressure transmitter and temperature transmitter |
| Certificate No. | 00223Q21711R1S |

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|----------------------------|--|
| CE | |
| Certification organization | ECM |
| Certification scope | Pressure Transmitter (Differential Pressure Transmitter) |
| Standard | EN IEC 61000-3-2:2019+A1:2021 |
| | EN IEC 61000-3-3:2013+A1:2019+A2:2021 |
| | EN IEC 61000-6-4:2019, EN IEC 61000-6-2:2019 |
| Certificate No. | 6G241223.NHEWC83 |