

## DPT Series

Differential Pressure Transmitter with Integrated PI Control

20260314R0

Technical Catalogue



Havkon **DPT.P Series Differential Pressure Transmitters** are designed to measure static or differential air pressure in HVAC/R systems and building automation applications. In addition to pressure measurement, the device features an integrated **PI control algorithm** that regulates the pressure to a desired setpoint.

The controller continuously compares the measured pressure with the set value and generates a proportional control signal via **0–10 V or 4–20 mA outputs**, enabling direct control of devices such as fans, dampers, or variable speed drives.

DPT.P Series transmitters are ideal for applications such as **fan pressure control, filter pressure regulation, airflow control, damper positioning, and clean room pressure management**, providing stable and accurate pressure regulation within ventilation systems.

### Features

- Integrated PI pressure control for stable and precise pressure regulation
- Selectable pressure set ranges (8 positions) via DIP switches
- 24 V AC/DC power supply
- Analog control outputs: 0–10 V / 2–10 V / 4–20 mA
- High-accuracy MEMS pressure sensing element
- Adjustable signal response time for stable measurement
- Selectable PI control parameters (P and I values)
- Compact housing: 100 × 80 × 40 mm
- Compact wall-mount housing (IP54)
- Low power consumption
- Suitable for air and non-aggressive gases
- Ideal for HVAC and building automation applications

### Order Codes

**DPT.500.P.RA8** Differential Pressure Transmitter with Set Ranges:  
+500Pa / +400Pa / +300Pa / +250Pa / +200Pa / +150Pa / +100Pa / +50Pa

### Warnings



**Before starting the installation of the device, carefully read the user manual and the warnings below.**

The user is responsible for any damage, loss, or personal injury resulting from failure to comply with the warnings in this manual. Do not modify or attempt to repair the device. Any intervention on the device may cause malfunction, damage to the device or the system.

In such cases, the device will be excluded from the warranty coverage.

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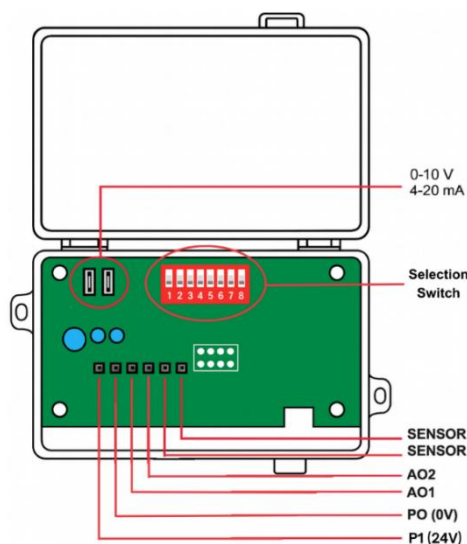
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### Technical Specifications

|                                     |                                 |   |
|-------------------------------------|---------------------------------|---|
| <b>Electrical Specifications</b>    | Power Supply                    | 24 V AC/DC $\pm 10\%$ , 50/60 Hz                    |
|                                     | Power Consumption               | 3 VA  |
|                                     | Terminal Connection             | Max. 1.5 mm <sup>2</sup>                            |
| <b>Environmental Specifications</b> | Operating Temperature           | -10 ... +50°C                                       |
|                                     | Storage Temperature             | -20 ... +70°C (Without icing and condensation)      |
|                                     | Operating Humidity              | 0...90% (non-condensing)                            |
|                                     | Altitude                        | Max. 2000m.   |
| <b>Functions</b>                    | Operating Environment           | Non-flammable and non-corrosive environments        |
|                                     | Outputs                         | 0-10V / 2-10V / 4-20mA                              |
|                                     | Multi Range/ Multi PI Set Range | Selectable pressure and PI set ranges (8 positions) |
| <b>Measuring data</b>               | Typical response time           | Adjustable 5 s / 20 s                               |
|                                     | Measured values                 | Differential pressure                               |
|                                     | Measuring fluid                 | Air and non-aggressive gases                        |
|                                     | Accuracy                        | measuring range $\leq 500$ Pa: $\pm 5$ Pa           |
| <b>Safety Information</b>           | Long term stability             | $\pm 2.5\%$ FSO                                     |
|                                     | IP Protection Rating            | IP54 enclosure protection                           |
|                                     | Certification EN                | EN60529   |

### Enclosure Specifications

|                |  |
|----------------|--|
| Enclosure Type | Wall Mounting  |
| Dimensions     | <b>W100 x H80 x D40 (mm)</b><br>(Width x Height x Depth) |
| Weight         | 160gr  |



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### Applications

- Fan pressure control in ventilation systems
- Air filter monitoring and pressure regulation
- Airflow control in ducts and ventilation channels
- VAV and damper control applications
- Clean room pressure control
- Laboratory and hospital pressure monitoring
- HVAC system pressure measurement and control

### Control Principle

The **DPT.P Series differential pressure transmitter** integrates a built-in **PI control algorithm** that enables direct pressure regulation in HVAC systems.

The device continuously measures the differential air pressure and compares it with the selected pressure setpoint. Based on the difference between the measured value and the setpoint, the internal PI controller automatically generates a control signal.

This control signal is provided via **analog outputs (0–10 V / 2–10 V / 4–20 mA)** and can be used to directly control external devices such as **variable speed drives, EC fans, dampers or actuators**, allowing the system pressure to be maintained at the desired level.

By combining pressure measurement and PI control in a single device, the DPT.P Series simplifies system design and improves overall control stability.

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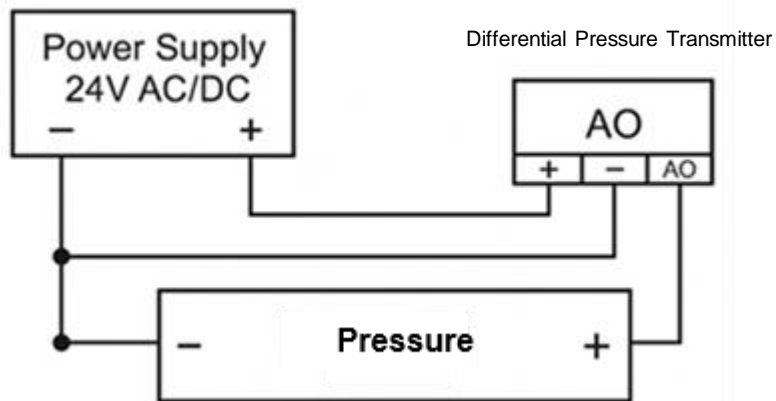
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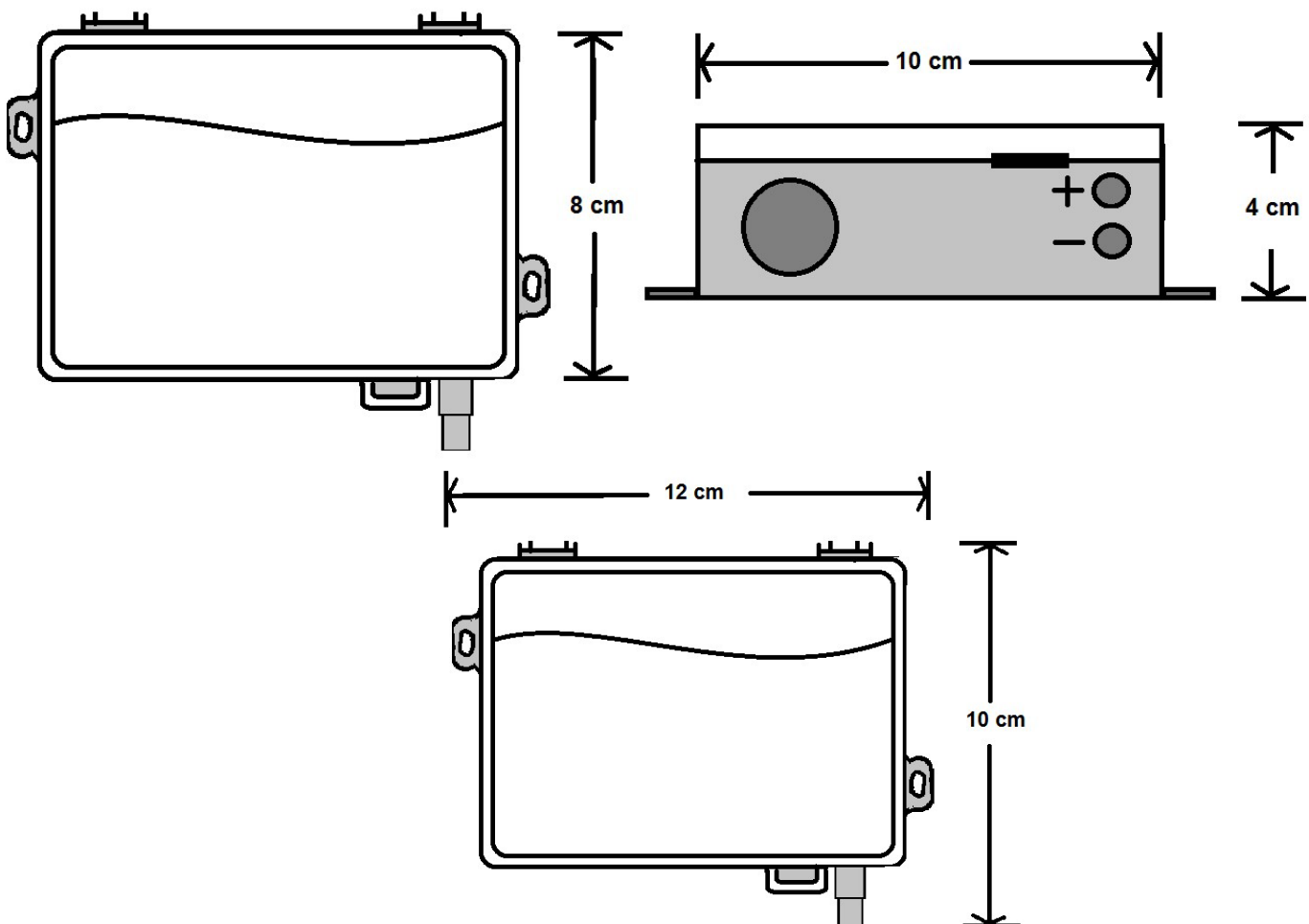
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### Wiring Diagram

DPT Series differential pressure transmitters provide proportional or PI-controlled pressure outputs for precise HVAC control and monitoring applications.



### Dimensions



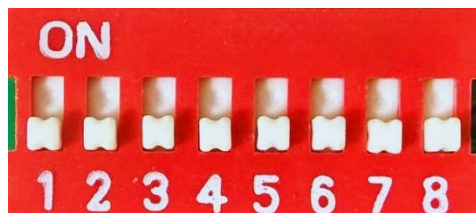
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### Device Data



The switch is:

- in the **OFF position** when the white actuator is at the bottom
- in the **ON position** when the actuator is pushed upward

All pressure ranges and filter time tables follow this convention.

### DPT.500.P.RA8 PI Set Pressure Values

| DIP 1 | DIP 2 | DIP 3 | Set Pressure Value |
|-------|-------|-------|--------------------|
| OFF   | OFF   | OFF   | <b>+500Pa</b>      |
| OFF   | OFF   | ON    | <b>+400Pa</b>      |
| OFF   | ON    | OFF   | <b>+300Pa</b>      |
| OFF   | ON    | ON    | <b>+250Pa</b>      |
| ON    | OFF   | OFF   | <b>+200Pa</b>      |
| ON    | OFF   | ON    | <b>+150Pa</b>      |
| ON    | ON    | OFF   | <b>+100Pa</b>      |
| ON    | ON    | ON    | <b>+50Pa</b>       |

### PI Selection Table

| DIP 4 | DIP 5 | P & I Value         |
|-------|-------|---------------------|
| OFF   | OFF   | <b>P = 10 I = 1</b> |
| OFF   | ON    | <b>P = 20 I = 1</b> |
| ON    | OFF   | <b>P = 50 I = 1</b> |
| ON    | ON    | <b>P = 10 I = 5</b> |

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### Device Data

The filter selection table defines the signal filtering time used to stabilize pressure measurement.

### Filter Selection Table

| DIP 6 | Filter Time Value |
|-------|-------------------|
| OFF   | 5 second          |
| ON    | 20 second         |

### Acceleration Time Selection Table

| DIP 7 | Acceleration Time Value |
|-------|-------------------------|
| OFF   | 10 second               |
| ON    | 60 second               |

### Output Type Selection Table

| DIP 7 | Output Type  |
|-------|--|
| OFF   | Direct Pressure Value<br>(Calibrated according to DIP Switches 1 2 3)        |
| ON    | PI Controlled Output Value<br>(Set Value is according to DIP Switches 1 2 3) |

### Safety Instructions



- The DPT series is a differential pressure transmitter and must be operated in accordance with this manual.
- **Ensure that the connection cables are de-energized during installation.**
- The device must be protected from **moisture, vibration, and contamination**. Respect the specified operating temperature range.
- For signal and analog output lines, **shielded and twisted pair cables** must be used. These cables must be routed away from high-power lines and equipment to prevent interference.
- **Installation and electrical connections must be performed by qualified personnel** in accordance with the guidelines in this manual.
- **Fuse ratings and cable cross-sections** must be selected based on the load current and the device's operating voltage.
- **Power supply cables** must conform to IEC 60227 or IEC 60245 standards.
- For safety, the mains switch must be located in a position **easily accessible to the operator and clearly marked as being related to the device.**