

Technical Datasheet

DIFFERENTIAL PRESSURE TRANSMITTER DPT20 / DPT30

(Panel Mount)



DIFFERENTIAL PRESSURE TRANSMITTER DPT20 & DPT30

The DPT20 and DPT30 are high-performance differential pressure transmitters designed for precision, reliability, and ease of integration in HVAC systems, industrial processes, and clean environments. While the DPT20 serves as a robust solution for general applications, the DPT30 introduces additional features like extended pressure ranges, advanced communication protocols, and enhanced temperature compensation for critical use cases.

The DPT20 & DPT30 has been designed using the latest technology to provide reliable accuracy, using extremely stable Micro Electro Mechanical Sensor to give a standard full scale accuracy of 0.5%. The compact design makes the unit easy to install in the industry and serves as an excellent alternative to existing mechanical gauges. Pressure measurement can be displayed on a large, easy to read Bright Seven Segment LED display, which also indicates set points and range overflow condition.



Features

- **Easy to Install and suitable for Panel Mounting**
- **High Accuracy and Stability**
- **Easy to configured via keys**
- **Output Signal : 4 - 20 mA / 0 - 10 V**
- **Inbuilt Buzzer**
- **Protection Rating: IP65 for outdoor and harsh environment use**
- **Wide Pressure Ranges**
- **Compact and Durable Design**
- **User-Friendly Configuration**
- **Energy Efficient**
- **Integrated Temperature Compensation**
- **Easy Integration**
- **Ruggedized Enclosure**
- **Advanced Communication RS-485**
- **Compact Design**

Why Choose DPT20 & DPT30?

DPT20

Reliable Simplicity The DPT20 is a dependable solution for users who need straightforward and accurate differential pressure monitoring. Its compact size, user-friendly setup, and compatibility with legacy systems make it a versatile choice for most HVAC and building automation tasks.

DPT30

Advanced Performance The DPT30 takes monitoring to the next level, providing unparalleled accuracy, ruggedness, and connectivity. It's built for industries that demand real-time data integration and reliable performance in challenging environments.

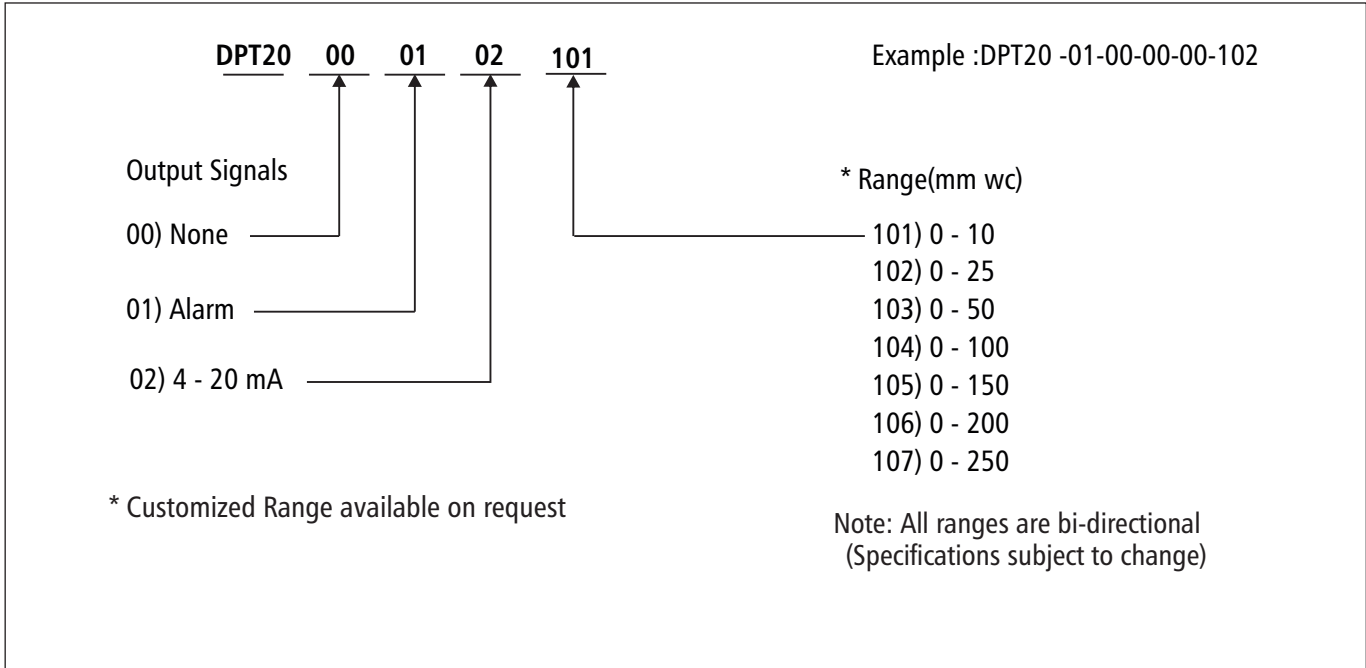




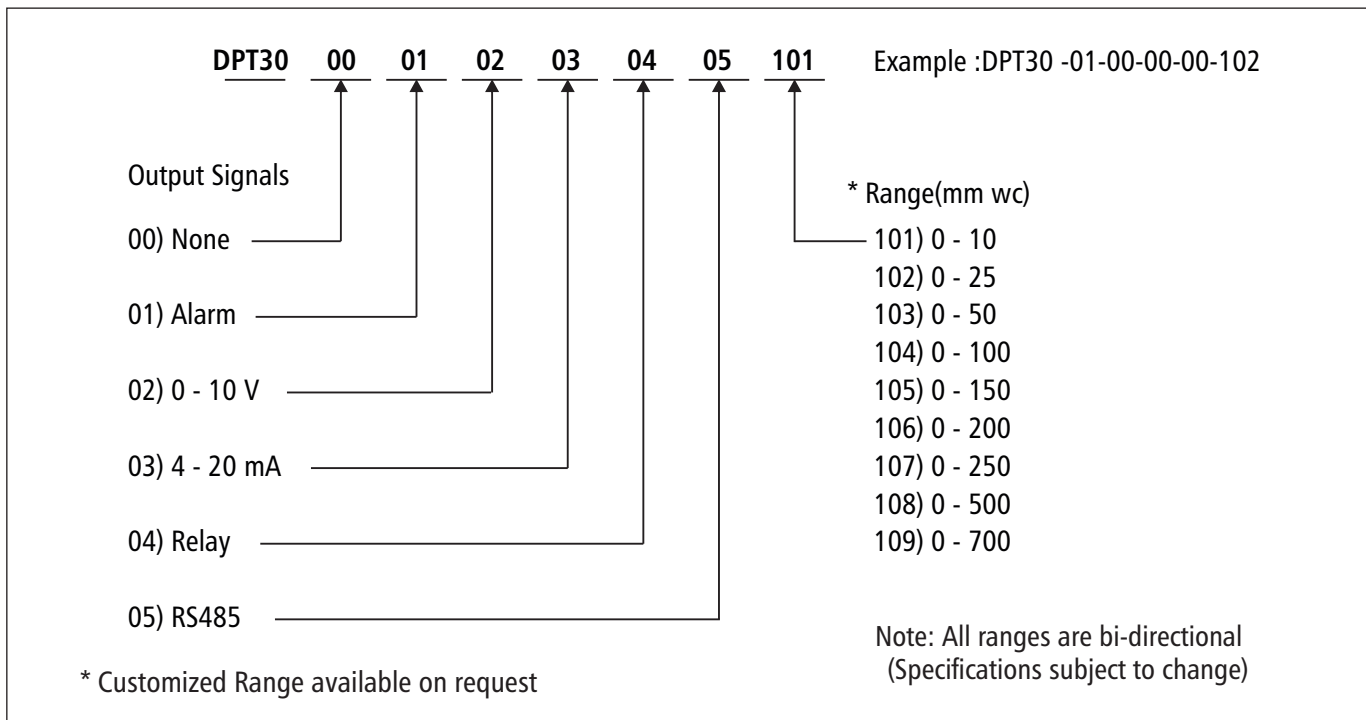
Technical Details

Media compatibility :	Air, non combustible, non corrosive gases
Supply Voltage	12 - 24 VDC
Accuracy (from applied pressure)	Ranges: $\leq 0 - 10$ mm Wc. $\pm 1.0\%$ of F. S , Ranges: $\geq 0 - 25$ mm Wc $\pm 0.5\%$ of F. S.
Output	4-20mA (std.) / 0 -10 V (Optional)
Communication	RS485 Modbus RTU
Measuring Units	Pa & mmWC
Signal Connection	3 Wire
Load Resistance	47 to 470 Ω @ 24 VDC
Measuring Range	0-700 mmwc
Operating Temp.	10° to 60°C
Storage Temp	10° to 80°C
Over Pressure	Ranges: ≤ 50 mm Wc : 9 PSI, 100 to 1000 mm Wc :19 PSI
Switch	Digital push button.
Enclosure	ABS
Protect Rating	IP65
Electrical Connections	Screw terminals
Process Connection	Push on connection for 3/16" ID tubing
Alarm	Buzzer
Response Time	500 ms

Polwax DPT20

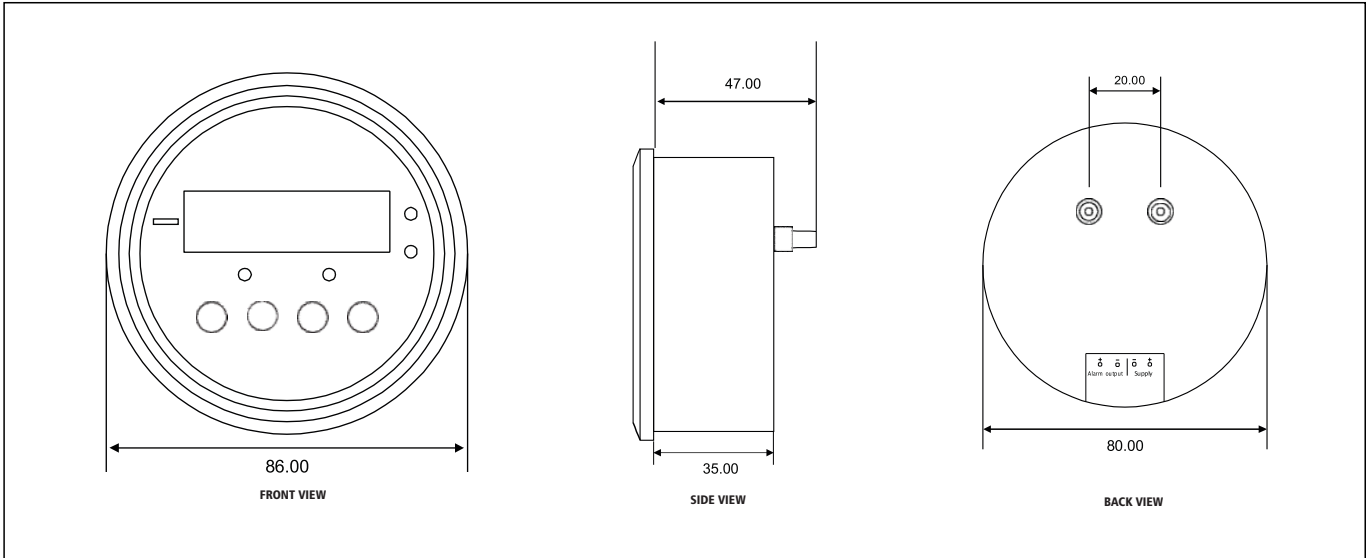


Polwax DPT30

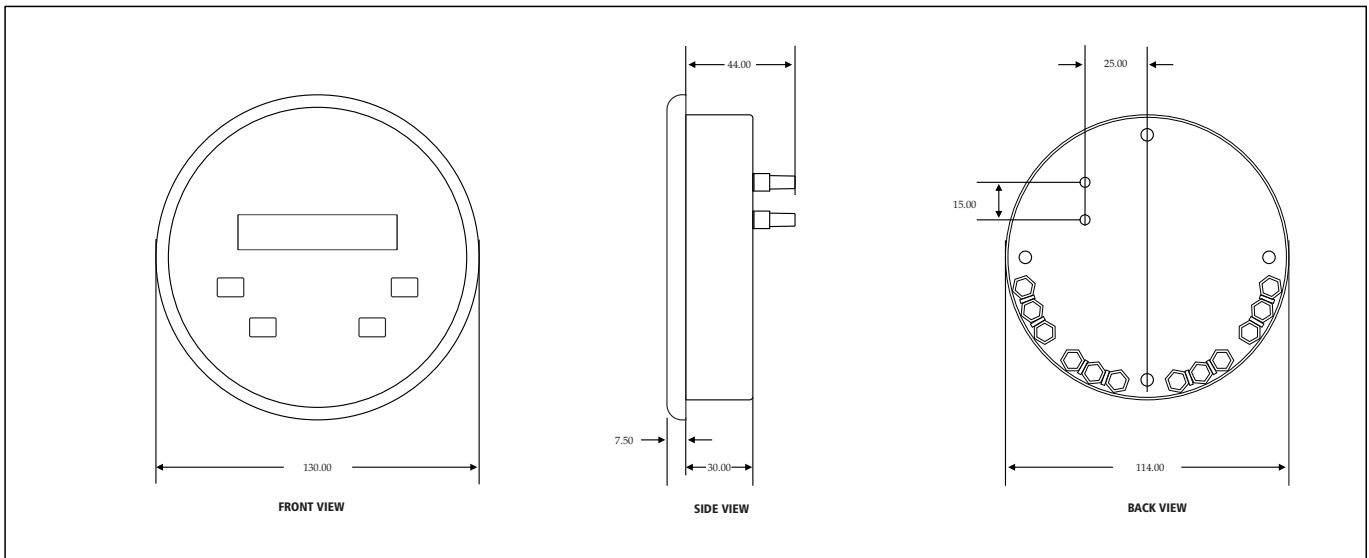


Dimensional Drawing

Polwax DPT20



Polwax DPT30



HVAC Systems – Airflow and Filter Monitoring

Objective: Monitor and control differential pressure across filters in HVAC systems to ensure optimal airflow and energy efficiency.

Case Study: Office Building Energy Optimization

Scenario:

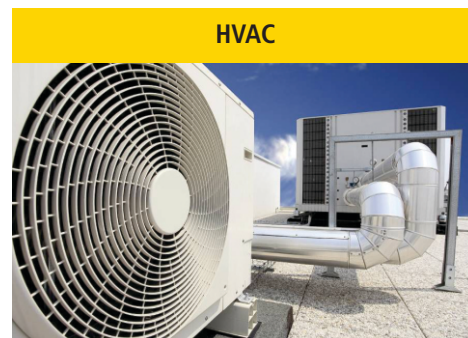
A large corporate office in an urban area faced complaints of poor air quality and fluctuating temperatures. The maintenance team struggled to maintain proper airflow due to clogged filters and an outdated pressure monitoring system.

Solution:

The DPT20 was installed across key air filters in the HVAC system. Its high accuracy ensured real-time monitoring of pressure drops, triggering alerts when filters approached their end-of-life. The Modbus RTU output allowed seamless integration with the building automation system.

Outcome:

Energy consumption reduced by 15% by optimizing filter replacement schedules. Employee complaints decreased significantly, improving workplace satisfaction. Maintenance costs dropped by 20% due to predictive alerts from the DPT20 & DPT30.



Clean Rooms – Contamination Prevention

Objective:

Maintain the required pressure differential between cleanroom zones to prevent contamination.

Case Study: Pharmaceutical Production Cleanroom Compliance

Scenario:

A pharmaceutical company experienced frequent contamination events in its cleanroom facility, risking non-compliance with regulatory standards. Pressure fluctuations between clean and less controlled areas were identified as the primary issue.

Solution:

DPT20 & DPT30 transmitters were deployed to monitor differential pressure between critical zones. Its temperature compensation feature ensured accurate readings despite environmental changes. Visual alarms were set using the analog output connected to local controllers.

Outcome:

- Regulatory compliance achieved for ISO 14644 standards.
- 40% reduction in contamination-related downtime.
- Improved process consistency and reduced product loss by 25%



Industrial Processes – Filter and Pump Monitoring

Objective:

Ensure efficiency and longevity of filters and pumps in fluid or gas systems.

Case Study: Chemical Plant Pump Maintenance

Scenario:

A chemical plant experienced frequent pump failures due to undetected pressure imbalances caused by clogged filters. This led to costly repairs and unplanned downtime.

Solution:

The DPT20 was installed across critical filters in the system. Its fast response time (<50 ms) provided near-instant alerts of pressure spikes, allowing the maintenance team to act before pump damage occurred.

Outcome:

- Pump lifespan extended by 30% due to timely filter maintenance.
- Annual repair costs reduced by \$50,000.
- System uptime increased by 15%, enhancing production capacity.



Building Automation – Smart Ventilation Systems

Objective:

Optimize ventilation systems in smart buildings for energy efficiency and occupant comfort.

Case Study: Smart University Campus Project

Scenario:

A university upgraded its campus to a smart building model, aiming to cut energy costs while maintaining a comfortable indoor environment. Ventilation systems were inefficient, with inconsistent airflows across different zones.

Solution:

The DPT20 was integrated into the building automation system via Modbus RTU. It continuously monitored differential pressure across dampers and provided precise control inputs for fan speed adjustments in variable air volume (VAV) systems.

Outcome:

- Energy savings of 18% from optimized fan operation.
- Consistent indoor air quality improved student satisfaction scores by 22%.
- Reduced carbon footprint, aligning with the university's sustainability goals



Conclusion

The DPT20 and DPT30 differential pressure transmitters are essential components in smart ventilation systems, ensuring that HVAC systems perform optimally while maximizing energy efficiency and improving indoor air quality. Whether for simple ventilation systems or advanced building automation setups, these transmitters offer precise, reliable, and scalable solutions to meet the demands of modern smart buildings.



POLWAX Group has got an experienced, highly-qualified project team conducting extensive R&D operations. Owing to that, goods holding the POLWAX brand feature customer-tailored flexibility and meet requirements of various industries.

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