

DPA RS485 Modbus

Differential Pressure Transmitter

thermokon
Sensortechnik GmbH

Data Sheet

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Application

Differential pressure transmitter with 8 selectable ranges and RS485 Modbus interface. For monitoring the differential pressure of air and other non-flammable and non-aggressive gases. Possible applications: Monitoring for air filters, fans, industrial cooling air cycles as well as overheating protection, control of air and fire dampers. RS485 Modbus types can calculate the flow rate additionally using differential pressure. Screw mounting onto flat surface, prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715.

Types available

Type	Measuring range ¹⁾	
DPA 250-D RS485 Modbus ²⁾	/ DPA 250 RS485 Modbus	0..250 Pa
DPA 2500-D RS485 Modbus ²⁾	/ DPA 2500 RS485 Modbus	0..2500 Pa
DPA 7000-D RS485 Modbus ²⁾	/ DPA 7000 RS485 Modbus	0..7000 Pa

¹⁾ Details for measuring range, please refer to configuration

²⁾ Type with display

Security Advice – Caution



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual
 1. Prior to reconnection, ensure that the enclosure is securely closed.



Notes on Disposal

As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most Thermokon products contain valuable materials that should be recycled rather than disposed as domestic waste. Please note the relevant regulations for local disposal.

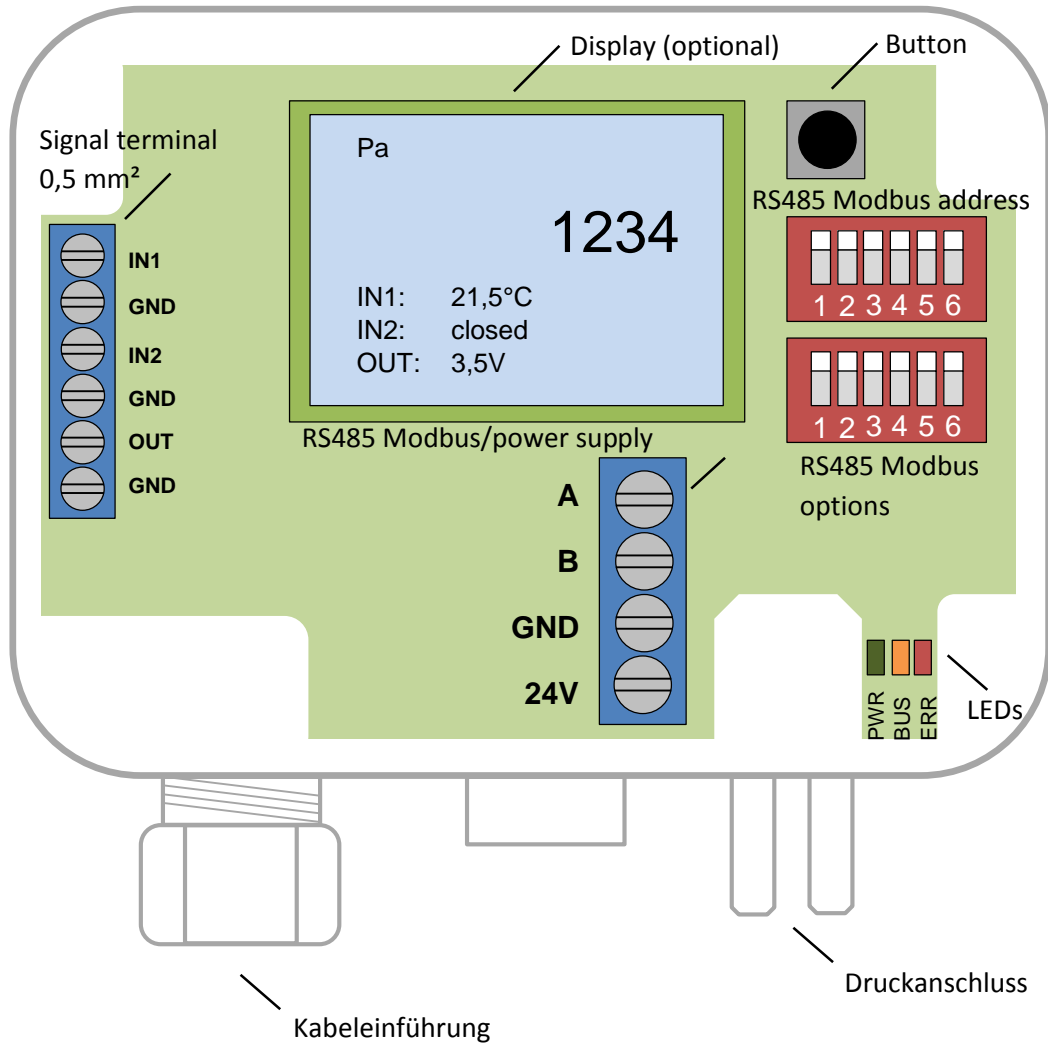
Technical Data

Measuring values	Differential pressure
Medium	Air and non-aggressive gases
Output voltage	0..10 V, max. 10 mA proportional to the measured value, scale configurable
Network technology	RS485 Modbus, RTU or ASCII, half-duplex
Power supply	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$)
Power consumption	RS485 Modbus: typ. 1,4 W (24 V =) 2 VA (24 V ~)
Measuring range pressure	DPA250: 0..+25 0..+50 0..+100 0..+250 -25..+25 -50..+50 -100..+100 -150..+150 Pa DPA2500: -100..+100 0..+100 0..+250 0..+500 0..+1000 0..+1500 0..+2000 0..+2500 Pa DPA7000: 0..+1000 0..+1500 0..+2000 0..+2500 0..+3000 0..+4000 0..+5000 0..+7000 Pa RS485 Modbus additionally: Flow meter 0..100 500 1.000 5.000 10.000 50.000 100.000 200.000 m ³ /h selectable at device, for other ranges please request
Accuracy pressure	$\pm 1,5\%$ of greatest measuring range, ± 6 Pa at range <250 Pa
Max. working overpressure	400 kPa
Response time	$t_{90}=0.1..20$ seconds (configurable)
Sensor	Piezo measuring element
Inputs	2 inputs for temperature sensors type NTC10k or for potential free switching contacts
Display	LCD 37,5x31,6 mm (optional) Measured values: Pa, kPa, mbar, mmWC, inchWC, psi, m ³ /h, m ³ /s, cfm, l/s, scfh, f/min (configurable)
Enclosure	PA6
Protection	IP54 according to EN 60529, IP65 with bolted cover
Cable entry	M20, seal insert for double cable entry
Connection electrical	terminal block, max. 1,5 mm ² , 4-wire, input/output terminal block, max 0,5 mm ²
Connection mechanical	Pressure connection male $\varnothing=5,0$ mm / $\varnothing=6,3$ mm, Connection tube PVC, soft
Ambient condition	-10..+50 °C, max. 95% rH, non-condensed
Weight	150 g
Mounting	Screw mounting onto flat surface, prepared for mounting on DIN rail TS35 (35x7,5 mm) according to EN 60715
Shipment	2 mounting screws, 2 plastic duct flanges, 2 m PVC-connection tube

Mounting Advices

Before installing the device, please check the leak tightness of the pressure lines.

Terminal connection Plan



RS485 Modbus Register

The description of RS485 Modbus Register and information concerning software are ready for download from our website

<http://www.thermokon.de/en/products/pressure-velocity/gases/dpa.html>

You will reach product and via download you will find all data.



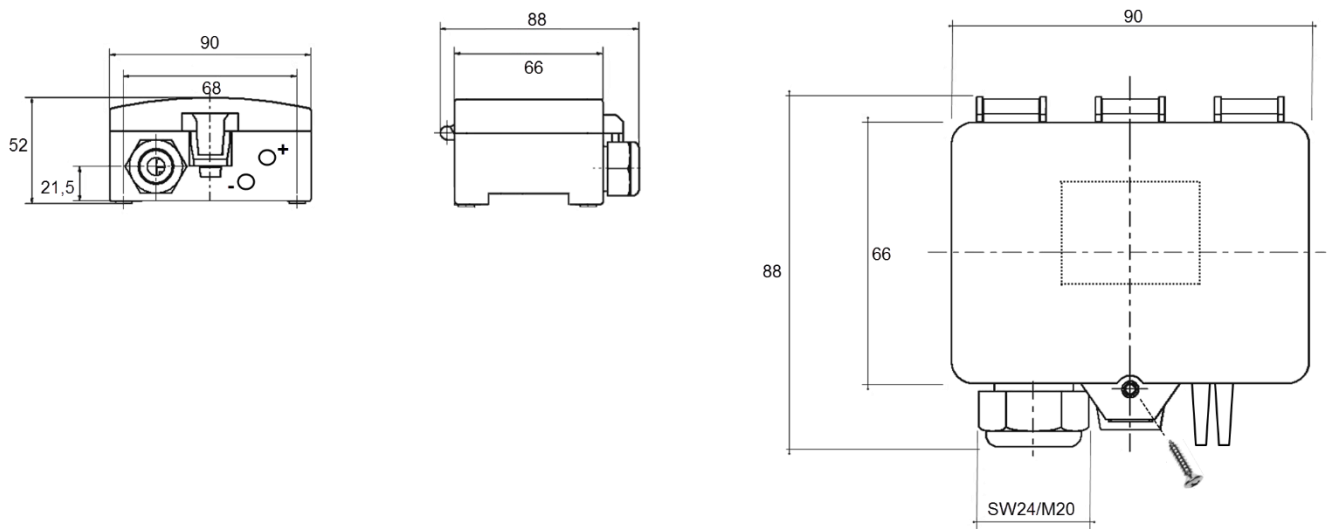
Zero-calibration

Attention! To zero point calibration the power supply must be connected one hour before.

- Both hoses from the pressure terminals + and - solve.
- Press the button briefly (within 0.5s.) - The LED starts blinking and the zero point calibration starts.
- Wait until the LED flashes again and install the tubing to the pressure ports.

In normal operation it is recommended to perform the zero point calibration every 12 months.

Dimensions (mm)



To gain protection IP 65 according to EN 60527 the cover has to be bolted at the prepared position, e.g. using a screw 3,5x10 mm according to EN 7981.

Accessories (enclosed in shipment)

- 2 fixing screws
- 2 plastic duct flanges
- 2 m PVC connection tube \varnothing 4/7 mm
- Spring for mounting on DIN rail TS35