

Differential Pressure Sensor (Air)

Differential pressure transmitter with 8 selectable ranges and 0 to 5/10 V, 4 to 20 mA outputs and Modbus functionality. NEMA 4X / IP65 rated enclosure. For monitoring the differential pressure of air and other non-flammable and non-aggressive gases. Monitoring air filters, fans, industrial cooling air cycles, control of air and fire dampers.


Type Overview

Type	Measuring Range Pressure	Output Signal Active Pressure	Output signal active volumetric flow	Display Type
22ADP-554	0 to 2500 Pa	DC 0...5 V, DC 0...10 V	DC 0...5 V, DC 0...10 V	-
22ADP-554L	0 to 2500 Pa	DC 0...5 V, DC 0...10 V	DC 0...5 V, DC 0...10 V	LCD

Technical Data

Electrical Data	Power Supply DC	15...24 V, ±10%, 1.4 W			
	Power Supply AC	24 V, ±10%, 2 VA			
	Electrical Connection	removable spring loaded terminal block max. 11 GA [2.5 mm ²]			
	Cable Entry	cable gland M20 2 x Ø6 mm, with strain relief 2 x Ø6 mm, 1/2" conduit adapter included			
Functional Data	Sensor Technology	piezo measuring element			
	Communicative control	Modbus RTU (Details see separate document "Sensor Modbus Register")			
	Multirange	8 fields selectable			
	Output Signal Active Note	output DC 0 to 5/10 V selectable with switch voltage output: min. 10 kΩ load current output: max. 500 Ω load			
Measuring Data	Display	LCD, 1.14" x 1.38" [29 x 35 mm] with backlight measured values: Pa, inchWC (configurable) measured values volumetric flow: m ³ /h, cfm (configurable)			
	Media	air			
	Measured Values	differential pressure			
	Measuring Media	air and non-aggressive gases			
	Measuring Range Pressure	Setting	range [Pa]	range [inch WC]	Factory setting
		S0	0 to 2500	0 to 10	✓
		S1	0 to 2000	0 to 8	
S2		0 to 1500	0 to 6		
S3		0 to 1000	0 to 4		
S4		0 to 500	0 to 2		
S5		0 to 250	0 to 1		
S6		0 to 100	0 to 0.4		
S7	-100 to 100	-0.4 to 0.4			
Accuracy Pressure	measuring range ≤2 inch WC (500 Pa): ±0.02 inch WC (±5 Pa) measuring range >2 inch WC (500 Pa): ±0.04 inch WC (±10 Pa)				

Materials	Cable Gland	PA6, black
	Housing	cover: lexan, Belimo orange NCS S0580-Y6OR base: lexan, Belimo orange NCS S0580-Y6OR seal: 0467 NBR70, black
Safety Data	Ambient Humidity	max. 95% RH non-condensing
	Ambient Temperature	15°F to 120°F [-10°C to 50°C]
	Medium Temperature	15°F to 120°F [-10°C to 50°C]
	Protection Class IEC/EN	III safety extra-low voltage (selv)
	Protection Class UL	UL Class 2 Supply
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-6
	Certification UL	pending
	Degree of Protection IEC/EN	IP65
	Degree of Protection NEMA/ UL	NEMA 4X
	Quality Standard	ISO 9001
Weight	0.29 lbs	

Safety Notes


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

The product should only be used for the intended application. Unauthorized modifications are prohibited! The product must not be used in relation with any equipment that in case of a 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

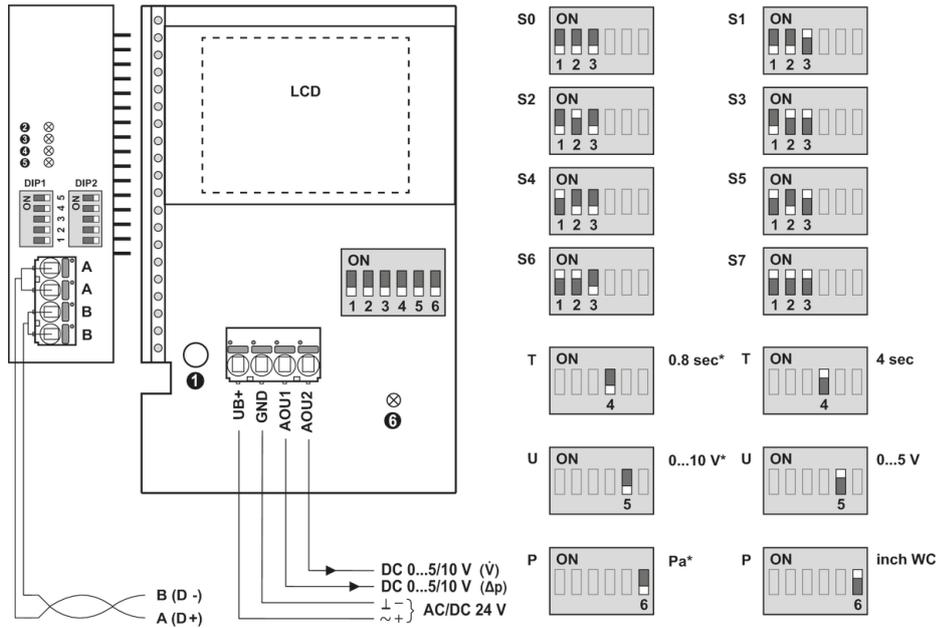
Remarks

Manual Zero-Point Calibration	In normal operation zero-point calibration should be executed every 12 months. Attention! For executing zero point calibration the power supply must be connected one hour before. <ul style="list-style-type: none"> • Release both connection tubes from the pressure terminals + and - • Press the button S1 until the LED lights permanently • Wait until the LED flashes again and reinstall the connection tubes to the pressure ports (note + and -)
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Accessories

Scope of Delivery	mounting plate dowel screws strain relief Ø6 to 8 mm cable gland nut conduit 1/2" NPT, 2 x Ø6 mm cable gland nut PG11, Ø6 to 10 mm cable gland nut conduit 1/2" NPT	
Optional Accessories	Description	Type
	metal duct connectors 1.57" [40 mm]	A-22AP-A01
	metal duct connectors 4" [100 mm]	A-22AP-A03

Wiring Diagram



- ① Button
- ② red: Error
- ③ yellow: Tx
- ④ yellow: Rx
- ⑤ and ⑥ Status LED
- * Factory setting
- P Pressure unit
- T Response time
- U Output signal

Setting	range [Pa]	range [inch WC]	Factory setting
S0	0 to 2500	0 to 10	✓
S1	0 to 2000	0 to 8	
S2	0 to 1500	0 to 6	
S3	0 to 1000	0 to 4	
S4	0 to 500	0 to 2	
S5	0 to 250	0 to 1	
S6	0 to 100	0 to 0.4	
S7	-100 to 100	-0.4 to 0.4	

Detailed documentation

The separate document Sensor Modbus-Register informs about Modbus register, addressing, parity and bus termination (DIP1: address, DIP2: baud rate, parity, bus termination)

In addition to the information on the bus, the following analog outputs are available:
 AOU1: differential pressure
 AOU2: volumetric flow

The volumetric flow is calculated from the differential pressure, the k-factor and the height
 Factory setting for the k-factor is 1.00 and for the height 330 metres above sea level.
 The values of the k-factor and the height can be changed via Modbus or BACnet.

Notes Wiring RS485



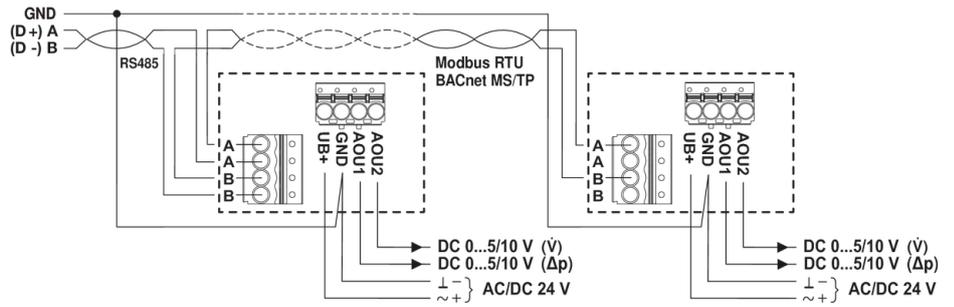
Connection via safety isolating transformer.

Parallel connection of other actuators possible. Observe the performance data.

The wiring of the line for Modbus (RTU) / BACnet (MS/TP) is to be carried out in accordance with applicable RS485 regulations.

Modbus / BACnet: Supply and communication are not galvanically isolated. Connect earth signal of the devices with one another.

Wiring RS485 (Modbus RTU & BACnet MS/TP)



Dimensions

