

Differential Pressure Sensor Air

Differential pressure transmitter with 8 selectable ranges and Modbus functionality. NEMA 4X / IP65 rated enclosure. For monitoring over-, under or the differential pressure of air and other non-flammable and non-aggressive gases. Typical application in HVAC systems for monitoring air filters, fans V-belts or fire and smoke control dampers. Options available with LCD display.


Type Overview

Type	Measuring range pressure	Output signal	Output signal active pressure	Output signal active volumetric flow	Burst pressure	Display type
22ADP-154	0...2500 Pa	Modbus	DC 0...5 V, DC 0...10 V	DC 0...5 V, DC 0...10 V	40 kPa	-
22ADP-154L	0...2500 Pa	Modbus	DC 0...5 V, DC 0...10 V	DC 0...5 V, DC 0...10 V	40 kPa	LCD

Technical Data

Electrical data	Power supply DC	15...24 V, $\pm 10\%$, 1.4 W
	Power supply AC	24 V, , $\pm 10\%$, 2 VA
	Electrical connection	Removable spring loaded terminal block max. 2.5 mm ²
Functional data	Cable entry	Cable gland with strain relief 2 x $\varnothing 6$ mm
	Sensor Technology	Piezo measuring element
	Communicative control	Modbus RTU
	Multirange	8 measuring ranges selectable
	Output signal active note	Output DC 0...5/10 V selectable with switch Voltage output: min. 10 k Ω load Current output: max. 500 Ω load
	Display	LCD, 29x35 mm with backlight Measured values: Pa, inchWC (configurable) Measured values volumetric flow: m ³ /h, cfm (configurable)
	Application	Air
Response time	Adjustable 0.8s or 4.0s	

Measuring data	Measuring values	Differential pressure			
	Measuring fluid	Air and non-aggressive gases			
	Measuring range settings pressure	Setting	range [Pa]	range [inch WC]	Factory setting
		S0	0...2500	0...10	✓
		S1	0...2000	0...8	
		S2	0...1500	0...6	
		S3	0...1000	0...4	
		S4	0...500	0...2	
		S5	0...250	0...1	
		S6	0...100	0...0.4	
	S7	-100...100	-0.4...0.4		
	Accuracy pressure	deviation compared to the reference device measuring range ≤500 Pa: ±5 Pa measuring range >500 Pa: ±10 Pa			
Materials	Cable gland	PA6, black			
	Housing	Cover: Lexan, orange Bottom: Lexan, orange Seal: 0467 NBR70, black UV resistant			
Safety data	Ambient humidity	Max. 95% r.H., non-condensing			
	Ambient temperature	-10...50°C [15...120°F]			
	Fluid temperature	-10...50°C [15...120°F]			
	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	cULus acc. to UL60730-1A/-2-6, CAN/CSA E60730-1:02			
	Degree of protection IEC/EN	IP65			
	Degree of protection NEMA/UL	NEMA 4X			
Quality Standard	ISO 9001				

Safety notes


This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten humans, animals or assets.

Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

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.
- Release both connection tubes from the pressure terminals + and -
 - Press the button until the LED lights permanently
 - Wait until the LED flashes again and reinstall the connection tubes to the pressure ports (note + and -)

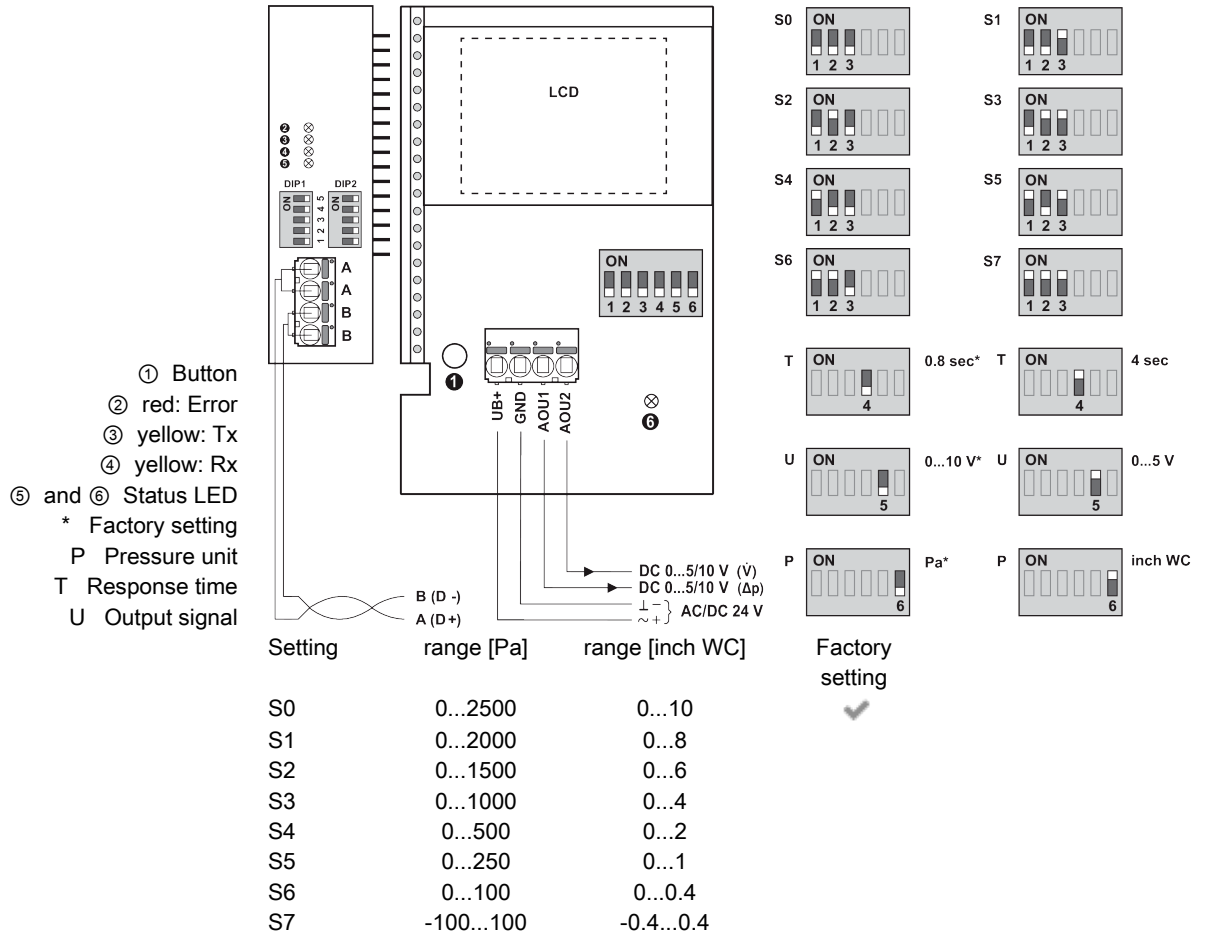
Scope of delivery

Scope of delivery	Description	Type
	Mounting plate L housing	A-22D-A10
	Duct connector kit, PVC tube 2 m, 2 connection elements (Plastic) for 22ADP-..	A-22AP-A08
	Cable Gland with strain relief Ø6...8 mm	
	Dowel	
	Screws	

Accessories

Optional accessories	Description	Type
	Duct connector, Metal, L 40 mm, Tube connection 5 mm	A-22AP-A02
	Duct connector, Metal, L 100 mm, Tube connection 5 mm	A-22AP-A04
	Connection adapter, M20, for cable 1 x 6 mm, Multipack 10 pcs.	A-22G-A01.1
	Connection adapter, M20, for cable 2 x 6 mm, Multipack 10 pcs.	A-22G-A02.1

Wiring diagram



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



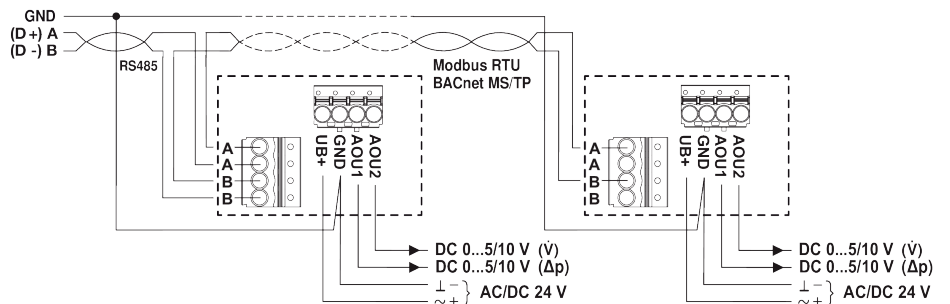
Connection via safety isolating transformer.

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

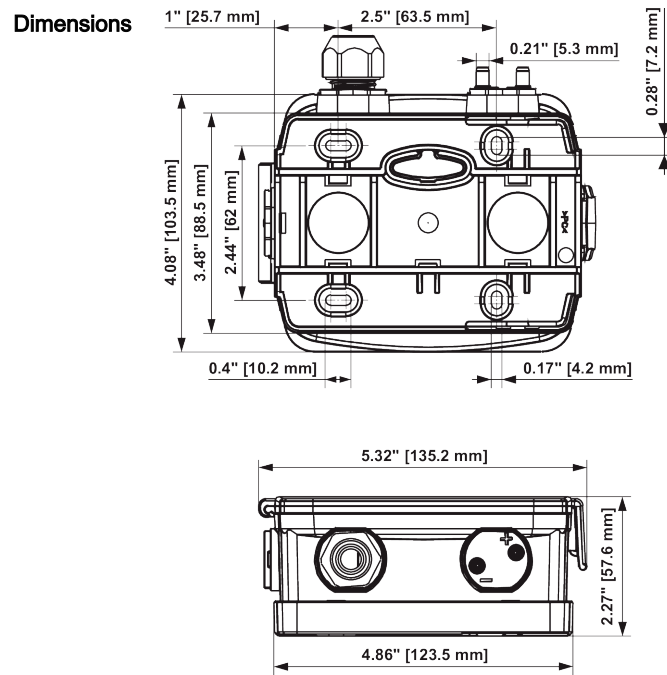
The wiring of the line for BACnet MS/TP / Modbus RTU is to be carried out in accordance with applicable RS485 regulations.

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



Type	Weight
22ADP-154	0.29 kg
22ADP-154L	0.31 kg