

Differential pressure sensor Air

Differential pressure transmitter with 8 selectable ranges and outputs 0...5 V, 0...10 V or 4...20 mA. For monitoring 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. NEMA 4X / IP65 rated enclosure.



5-year warranty


Type Overview

Type	Measuring range pressure [Pa]	Measuring range pressure [inch WC]	Output signal active pressure	Burst pressure	Display type
22ADP-586	0...7000	0...28	0...5 V, 0...10 V, 4...20 mA	160 inch WC [40 kPa]	-
22ADP-586L	0...7000	0...28	0...5 V, 0...10 V, 4...20 mA	160 inch WC [40 kPa]	LCD

Technical data

Electrical Data	Nominal voltage	AC/DC 24 V			
	Nominal voltage range	AC 19...29 V / DC 15...35 V			
	Power consumption AC	4.3 VA			
	Power consumption DC	2.3 W			
	Electrical connection	Pluggable spring loaded terminal block max. 2.5 mm ²			
	Cable entry	Cable gland with strain relief ø6...8 mm (1/2" NPT conduit adapter included)			
Functional Data	Sensor Technology	piezo measuring element			
	Application	air			
	Multirange	8 measuring ranges selectable			
	Voltage output	1 x 0...5 V, 0...10 V, min. resistance 10 kΩ			
	Current output	1x 4...20 mA, max. resistance 500 Ω			
	Output signal active note	Output 0...5/10 V selectable with switch			
	Display	LCD, 1.14x1.38 in. [29x35 mm] With backlight Measured values: Pa, inch WC (programmable)			
	Response time	adjustable 0.8 s or 4.0 s			
Measuring Data	Measured values	Differential pressure Volumetric flow (with A-22G-A05)			
	Measuring fluid	air and non-aggressive gases			
	Measuring range pressure settings	Setting	Range [Pa]	Range [inch WC]	Factory setting
		S0	0...7000	0...28	✓
		S1	0...5000	0...20	
		S2	0...4000	0...16	
		S3	0...3000	0...12	
S4		0...2500	0...10		
S5		0...2000	0...8		
S6	0...1500	0...6			
S7	0...1000	0...4			

Measuring Data	Accuracy pressure	measuring range ≤8 inch WC: ±0.04 inch WC measuring range >8 inch WC: ±0.1 inch WC
	Long-term stability	±2.5% FSO (Full Scale Output) / 4 yr.
Materials	Cable gland	PA6, black
	Housing	Cover: PC, orange Bottom: PC, orange Seal: NBR70, black UV resistant
Safety Data	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP65
	Degree of protection NEMA/UL	NEMA 4X
	Enclosure	UL Enclosure Type 4X
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-6
	Quality Standard	ISO 9001
	UL Approval	cULus acc. to UL60730-1A/-2-6, CAN/CSA E60730-1
	Type of action	Type 1
	Rated impulse voltage supply	0.8 kV
	Installation method	Independently mounted control
	Pollution degree	3
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-10...50°C [15...122°F]
Fluid temperature	-10...50°C [15...122°F]	
Storage temperature	-4...176°F [-20...80°C]	

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

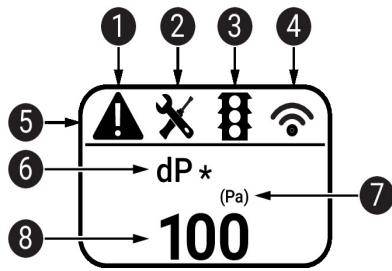
The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

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 -)

Indicators and Operation

Indicators Depending on the device and the number of measured values, the display automatically scales. Parameters, such as the fading in/out of measured values, brightness and traffic light function, are changed via the app or bus system. During the boot process, the software and hardware versions are displayed.



- ❶ Fault / sensor failure
- ❷ Service / visual inspection due
- ❸ TLF (traffic light function) active (thresholds for display colour changes)
- ❹ Radio active (not available)
- ❺ Status bar
- ❻ Measured value (* appears when TLF function is activated for this value)
- ❼ Unit of measure
- ❽ Measured value

Parts included

Parts included	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
	Dowels	
	Screws	
	1/2" NPT conduit adapter	

Accessories

Optional accessories	Description	Type
	Pitot tube, Metal, L 1.5", Tube connection 0.2"	A-22AP-A01
	Pitot tube, Metal, L 4", Tube connection 0.2"	A-22AP-A03
Tools	Description	Type
	Belimo Duct Sensor Assistant App	Belimo Duct Sensor Assistant App
	Bluetooth dongle for Belimo Duct Sensor Assistant App	A-22G-A05
	* Bluetooth dongle A-22G-A05	
	Certified and available in North America, European Union, EFTA States and UK.	

Service

Tools connection This sensor can be operated and parametrized using the Belimo Assistant App. When using the Belimo Duct Sensor Assistant App, the Bluetooth dongle is required to enable communication between the app and the Belimo sensor.

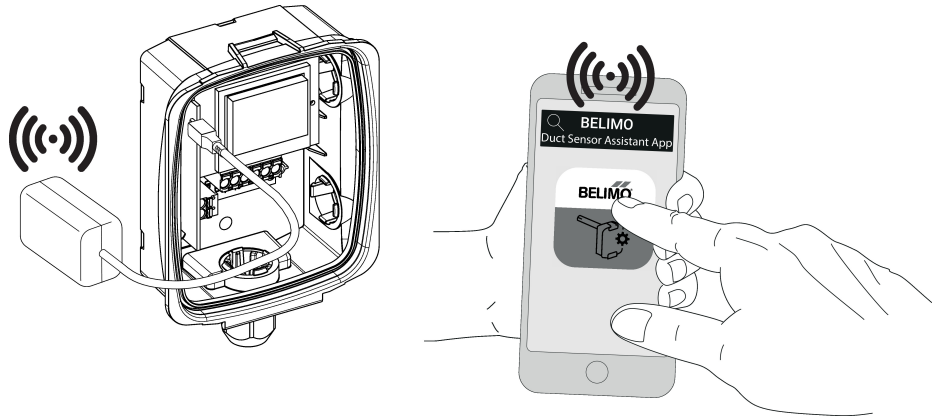
For the standard operation and parametrization of the sensor the Bluetooth dongle and the Belimo Duct Sensor Assistant App are not needed. The sensor will arrive pre-configured with the factory default settings shown above.

Requirement:

- Bluetooth dongle (Belimo Part No: A-22G-A05)
- Bluetooth-capable smartphone
- Belimo Duct Sensor Assistant App (Google Play & Apple App Store)

Procedure:

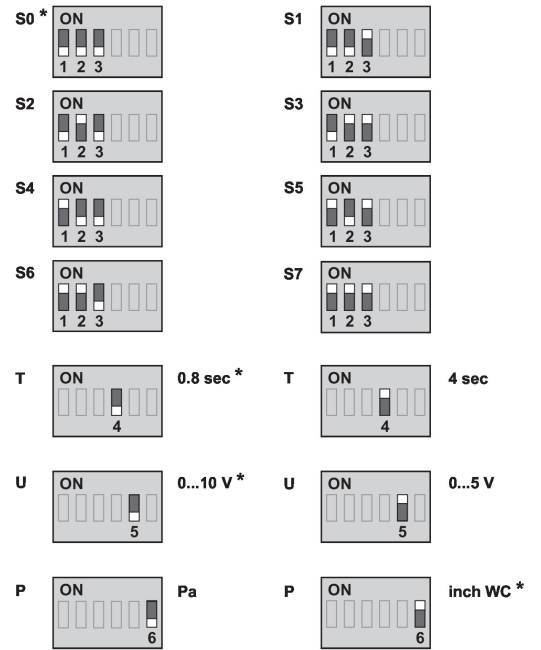
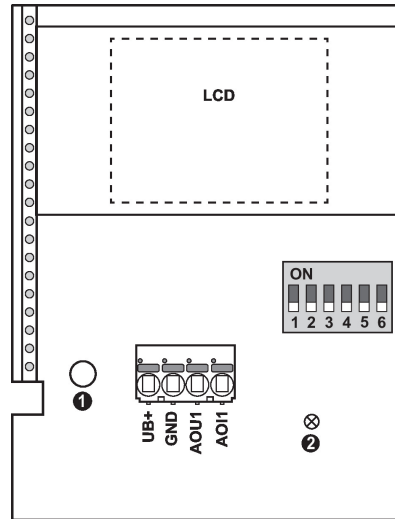
- Plug the Bluetooth dongle into the sensor via the Micro-USB connector or by means of the interface PCB
- Connect Bluetooth-capable smartphone with Bluetooth dongle
- Select parametrization in the Belimo Assistant App



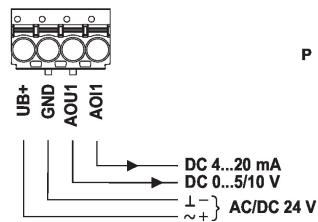
Wiring Diagram

Notes When switching from 0...10 V to 0...5 V output voltage also the current will be adjusted from 4...20 mA to 4...12 mA.





- ① Button
- ② Status LED
- * Factory setting
- P Pressure unit
- T Response time
- U Output signal

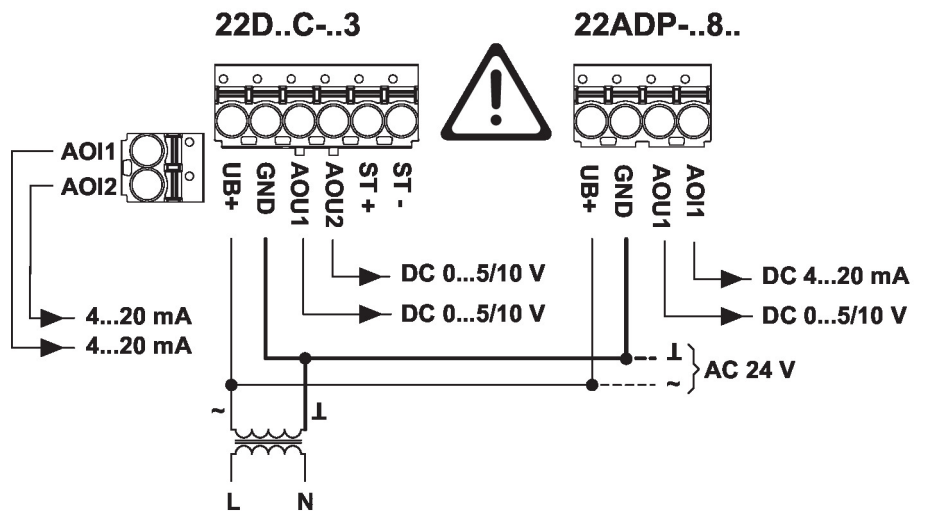


Setting	Range [Pa]	Range [inch WC]	Factory setting
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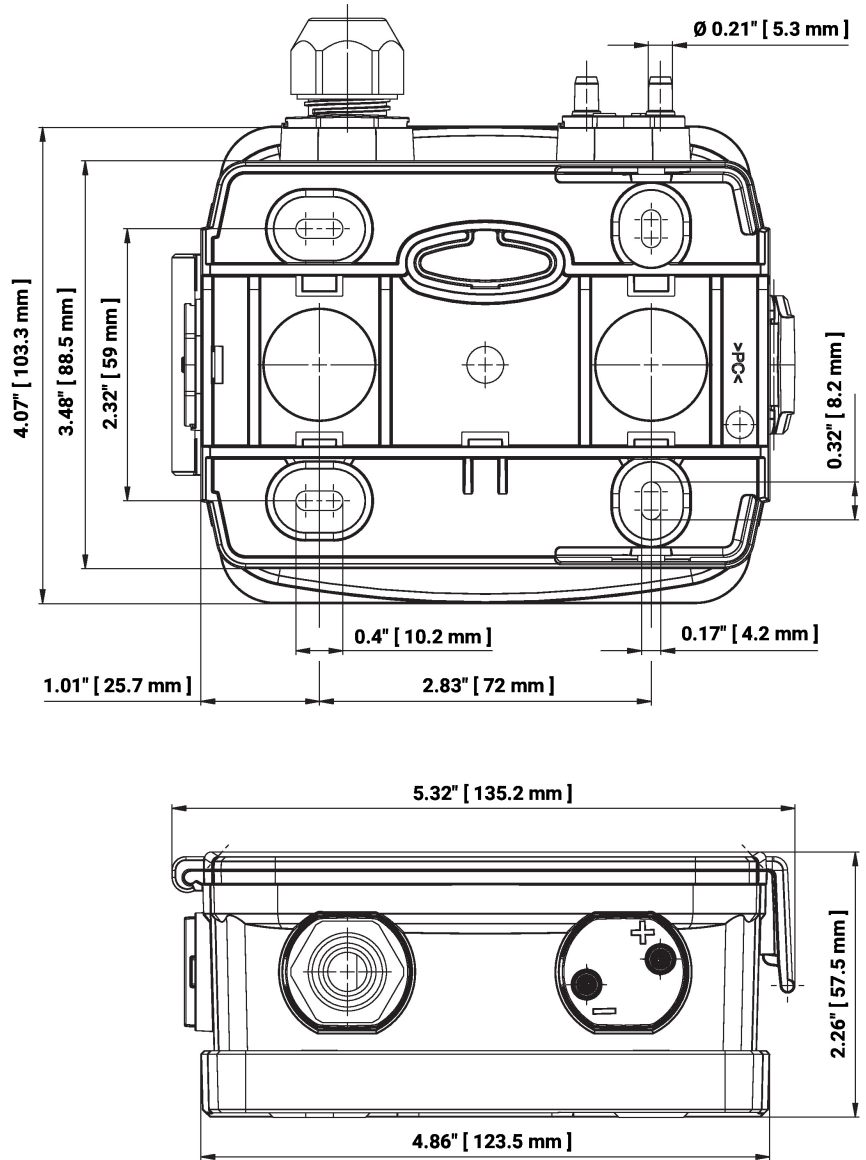
Wiring note power supply AC

For the sensor to function properly, polarity must be observed with a DC supply as well as an AC supply.

If the AC supply is connected incorrectly, i.e. if the wires are reversed, this can lead to the destruction of the sensor.



Dimensions



Type	Weight
22ADP-586	0.84 lb [0.38 kg]
22ADP-586L	0.90 lb [0.41 kg]

Further documentation

- Installation instructions