

SDA-P Differential Pressure Transmitter

Features

- Pressure measurement from 300 Pa up to 5kPa (1.2 in WC to 20 in WC)
- Programmable pressure display range
- Minimum and maximum pressure memory
- 0...10V or 0...20mA measuring signals, selectable with jumpers
- Signal range programmable
- Selectable averaging signal

Applications

- Pressure measurement in the field of heating, ventilation and air conditioning.
- Measuring of air flow velocity
- Measuring and control of positive or negative pressure for example for clean rooms.
- Measure exactly the range you need
- Recording of minimum and maximum values for critical environments
- Supervision of critical pressures.



Functions

The transmitter measures the pressure by the use of a diaphragm that transfers the force onto a ceramic fulcrum lever. The signal is temperature compensated and calibrated. The microprocessor samples the pressure once per second. It calculates an averaging signal over a preset number of seconds and generates an output signal based on minimum and maximum pressure values.

Minimum and Maximum Values:

Using the programming tool, the user has the option to read out and reset minimum and maximum values. The minimum and maximum values may be sent to the output using OP00. This way the sensor may be used to supervise the temperature for critical environments. The minimum and maximum values are saved into the EEPROM every minute. They will still be available after a power failure.

Ordering

Name	Item Code	Description/Option
SDA-P1	40-30-0045	Pressure range 0...300 Pa (1.2 in WC)
SDA-P2	40-30-0046	Pressure range 0...500 Pa (2 in WC)
SDA-P3	40-30-0047	Pressure range 0...1 kPa (4 in WC)
SDA-P4	40-30-0048	Pressure range 0...3 kPa (12 in WC)
SDA-P5	40-30-0049	Pressure range 0...5 kPa (20 in WC)


Configuration

SDA-Px-W0	40-30-00xx-0	Output Signal: 0...10V DC (Default)
SDA-Px-W1	40-30-00xx-1	Output Signal: 4...20mA
SDA-Px-W2	40-30-00xx-2	Output Signal: 2...10V DC
SDA-Px-W3	40-30-00xx-3	Output Signal: 0...20mA

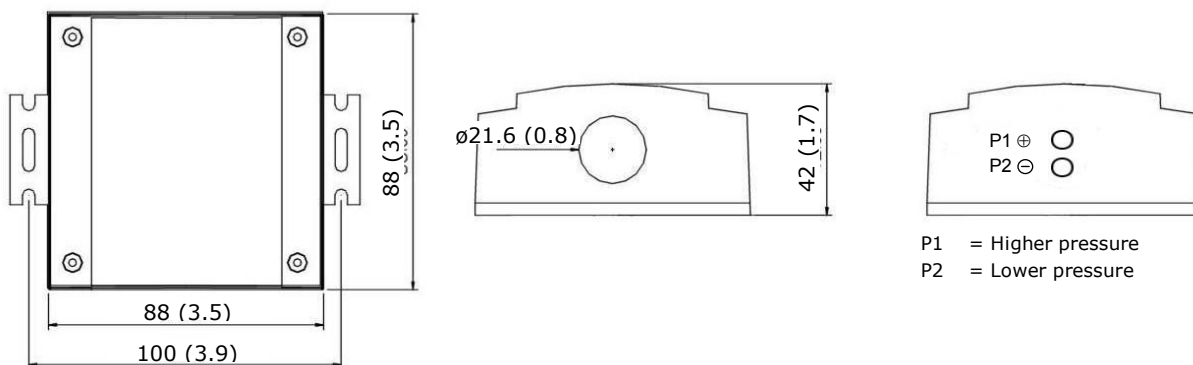
Accessories

OPA-S	40-50 0006	External display module
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Technical Specification

Power Supply	Operating Voltage	24 V AC 50/60 Hz \pm 10%, 24VDC \pm 10%				
	Transformer	SELV to HD 384, Class II, 48VA max				
	Power Consumption	Max 1 W, 1.5 VA				
	Terminal Connectors	For wire 0.34...2.5 mm ² (AWG 24...12)				
Sensing Probe	Product type	SDA-P1	SDA-P2	SDA-P3	SDA-P4	SDA-P5
	Pressure Range	300 Pa 1.2" WC	500 Pa 2" WC	1kPa 4" WC	3kPa 12" WC	5kPa 20" WC
	Linearity	\pm 0.5%	\pm 0.5%	\pm 0.3%	\pm 0.3%	\pm 0.3%
	Hysteresis	0.5%	0.4%	0.3%	0.2%	0.2%
	Stability over 1 year	0.5%	0.5%	0.5%	0.5%	0.5%
	Diaphragm:	Silicone polymer (LSR)				
	Pressure Sensing element	Ceramic Fulcrum Lever				
	Temperature coefficient sensitivity and zero point	\pm 0.04%/°C				
	Tolerable overload	10kPa (40" WC)				
	Rupture pressure	15kPa @ 70°C (60" WC @ 158F) 20kPa @ 25°C (80" WC @ 77F)				
Signal Outputs	Analog Outputs	DC 0-10V or 0...20mA				
	Output Signal	10 Bit, 9.7 mV, 0.019.5 mA				
	Resolution	\pm 2%				
	Accuracy	Voltage Signal: \geq 1k Ω , Current Signal: \leq 500 Ω				
Environment	Maximum Load					
	Operation	To IEC 721-3-3				
	Climatic Conditions	class 3 K5				
	Temperature	0...70°C (32...158°F)				
	Humidity	<95% R.H. non-condensing				
	Transport & Storage	To IEC 721-3-2 and IEC 721-3-1				
	Climatic Conditions	class 3 K3 and class 1 K3				
	Temperature	-30...80°C (-22...176°F)				
	Humidity	<95% R.H. non-condensing				
	Mechanical Conditions	class 2M2				
Standards		conformity				
		EMC Directive	2004/108/EC			
		Low Voltage Directive	2006/95/EC			
		Product standards				
		Automatic electrical controls for household and similar use	EN 60 730 -1			
		Electromagnetic compatibility for domestic and industrial sector	Emissions: EN 60 730-1 Immunity: EN 60 730-1			
		Degree of Protection	IP40 to EN 60 529			
		Safety Class	III (IEC 60536)			
		Dimensions (H x W x D)	42 x 112 x 88 mm (1.7 x 4.4 x 3.5 in)			
		Housing Materials	Fire proof ABS plastic (UL 94 V-0)			
General		Weight (including package)	178g (6.3 oz)			

Dimension [mm]



Configuration parameters

By the use of parameters the transmitter can be adapted to fit perfect into the application. The parameters are set with the operation terminal OPA-S. The OPA-S may be used as remote indicator.

Pressure Input configuration



Parameter	Description	Range	Standard
IP 00	P: Unit: 0 = no unit, 1 = %, 2 = scale 10 (0...2550)	0...2	0
IP 01	P: Samples taken for averaging control signal	1...255	10
IP 02	P: Calibration	-10...10%	0
IP 03	Minimum Display value	0...255	0
IP 04	Maximum Display value	0...255	100

Analog Output Configuration

Parameter	Description	Range	Standard
OP 00	AO1: Configuration output Signal: 0 = Feedback humidity input, 1 = Feedback humidity minimum value 2 = Feedback humidity maximum value	0 - 2	0
OP 01	AO1: Minimum limitation of output signal	0 - Max %	20%
OP 02	AO1: Maximum limitation of output signal	Min - 100%	100%

Analog Output Configuration

The analog output may be configured with a jumper for 0-10 VDC or 0-20 mA control signals. The jumper is located behind the terminal connector of the analog output. See table below for jumper placement. The factory setting is to 0-10 VDC.

Signal Type	Jumper selection
0 - 10 VDC	(1-2) 
0 - 20 mA DC	(2-3) 

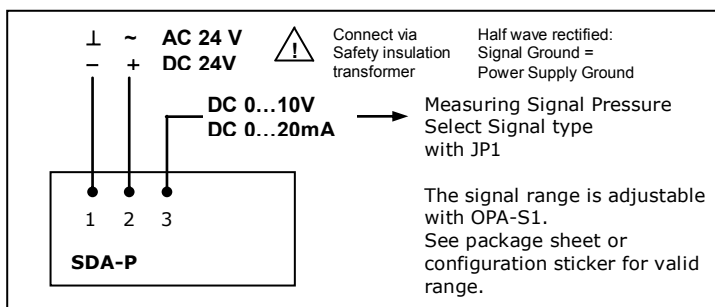
Installation and safety advice

This device may only be installed and configured by a skilled electrician. Where a device failure endangers human life and/or property, it is the responsibility of the client, installer and designer to add additional safety devices to prevent or detect a system failure caused by such a device failure.

Installation

- To install the sensor, disassemble base plate and cover,
- Secure the base plate to the mounting surface with two screws.
- Connect the wires according to the wiring diagram to the measuring circuit in the cover,
- Connect the pressure pipes to the probe input. Observe pressure polarity.
- Assemble the cover with the base plate.

Wiring Diagram



Terminal Connections

