

SDA-P, Intelligent Pressure Transmitter

Features

- Pressure measurement from 300 Pa up to 5kPa (1.2 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 as well be send to the output using OP00. This way the sensor may be used to supervise the pressure 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

Item Name	Description/Option
SDA-Px	Standard: 2...10V DC output signal
SDA-Px-W	0 Output Signal: 2...10V DC/ 4...20mA
	1 Output Signal: 0...10V DC/ 0...20mA
	2 Output Signal: Special – Specify
Pressure Ranges:	
SDA-P1	0...300 Pa (1.2 in WC)
SDA-P2	0...500 Pa (2 in WC)
SDA-P3	0...1kPa (4 in WC)
SDA-P4	0...3kPa (12 in WC)
SDA-P5	0...5kPa (20 in WC)

Options and Accessories

Use with OPA-S, OPU-S remote terminals and displays and OPH-S handheld operation terminals

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 besides the terminal connector. See table jumper placement. The factory setting is to 0-10 VDC.

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

The signal range is specified in software by setting a minimum and a maximum limit. Default is 2...10V, 4...20mA.

Configuration parameters

The SDA-P is an *intelligent* sensor and can be adapted to fit perfect into your application. The preparation of the sensing signal is defined by parameters. The parameters are set with the operation terminal OPA-S. The operation terminal can be used as remote indicator of the measured values. On request your dealer can preset the configuration values. Refer to user manual on operation terminal OPA-S for detailed instruction on how to program configuration parameters.

Pressure Input configuration

Parameter	Description	Range	Standard
IP 00	Show Percent	ON, OFF	ON
IP 01	Samples taken for averaging control signal	1...255	10
IP 02	Calibration	-10...10%	0
IP 03	Minimum Display value	0...2550	0
IP 04	Maximum Display value	0...2550	100

Analog Output Configuration

Parameter	Description	Range	Standard
OP 00	AO1: Configuration output Signal: 0 = Feedback pressure input. 1 = Feedback pressure minimum value 2 = Feedback pressure 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%

Technical Specification Pressure Probe

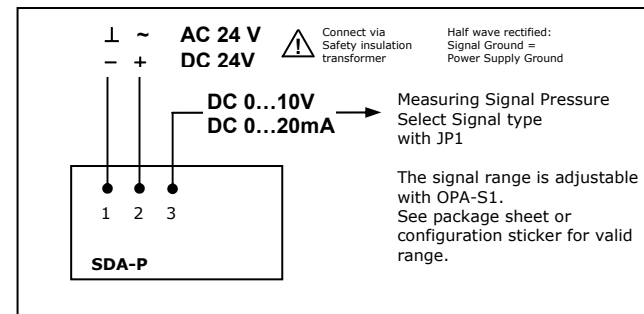
Product type	SDA-P1	SDA-P2	SDA-P3	SDA-P4	SDA-P5
Pressure Range	300 Pa 1.2" WC	500 Pa 2" WC	1kPa 4" WC	3kPa 12" WC	5kPa 20" WC
Linearity	± 0.5%	± 0.5%	± 0.3%	± 0.3%	± 0.3%
Hysteresis	0.5%	0.4%	0.3%	0.2%	0.2%
Stability over 1 year	0.5%	0.5%	0.5%	0.5%	0.5%
Temperature coefficient sensitivity and zero point	± 0.04%/°C				
Tolerable overload	10kPa (40 in WC)				
Rupture pressure	15kPa @ 70°C (60 in WC @ 158°F) 20kPa @ 25°C (80 in WC @ 77°F)				
Sensing Probe	Diaphragm: Silicone polymer (LSR), Ceramic Fulcrum Lever				
Pressure Connection	Pipe ∅ 6.2mm, P1 = Positive Pressure, P2 = Negative Pressure				

Technical Specification

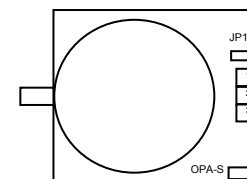
Power Supply	Operating Voltage	24 V AC 50/60 Hz ± 10%, 24VDC ± 10%
	Transformer	SELV to HD 384, Class II, 48VA max
	Power Consumption	Max 1 W, 1.5 VA
	Terminal Connectors	For wire 0.34...2.5 mm ² (AWG 24...12)
Signal Outputs	Analog Outputs	
	Output Signal	DC 0-10V or 0...20mA
	Resolution	10 Bit, 9.7 mV, 0.019.5 mA
	Maximum Load	20 mA, 500Ω
Environment	Ambient Temperature	0 to 70°C acc IEC 721-3-3
	Operation	To IEC 721-3-3
	Climatic Conditions	class 3 K5
	Temperature	0...70°C (32...158°F)
Transport & Storage	Humidity	<95% R.H. non-condensing
	Climatic Conditions	To IEC 721-3-2 and IEC 721-3-1
	Temperature	class 3 K3 and class 1 K3
	Humidity	-30...80°C (-22...176°F)
Standards	Mechanical Conditions	<95% R.H. non-condensing class 2M2
	CE 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
	Special requirement on temperature dependent controls	EN 60 730 – 2 - 9
	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
General	Safety Class	III
	Dimensions (H x W x D)	42 x 112 x 88 mm (1.7 x 4.4 x 3.5 in)
	Housing Material	Fire proof ABS plastic (UL 94 V-0)
	Weight (including package)	178 g (6.3 oz)

Wiring & Installation

Wiring Diagram



Terminal Connections



GND	1
24V ADC	2
AO1	3

- 1: Power Supply 0V AC, GND
2: Power Supply 24V AC/DC
3: Analog Output 1

Jumper Settings and Pressure Output connection

- JP1: Signal Type AO1
2-3 : 0...20mA
1-2 : 0...10VDC

- P1: Positive Pressure
P2: Negative Pressure
Maximum overpressure 20kPa

Dimension [mm]

