

Differential pressure sensor For ventilation and air-conditioning Model A2G-50

WIKA data sheet PE 88.02



for further approvals,
see page 5

Applications

- For measuring differential pressures and static pressures
- Monitoring of filters
- Overpressure monitoring in cleanrooms and laboratories

Special features

- Electrical output signal 0 ... 10 V or 4 ... 20 mA
- Modbus® output signal
- LC display
- Maintenance-free
- Maximum operating pressure 20 kPa



Differential pressure sensor, model A2G-50

Description

The model A2G-50 differential pressure sensor is used for measuring differential pressures of gaseous media in ventilation and air-conditioning applications.

It is based on the piezoresistive measurement principle. This compact differential pressure sensor offers excellent performance and high quality at an attractive price.

Electrical analogue output signals for both measurands (0 ... 10 V or 4 ... 20 mA) or the digital Modbus® versions enable the direct connection to control systems or the building automation system.

The pressure range as well as the unit and the response time can be individually adapted in the instrument via jumpers.

The measured differential pressure is also shown on the LC display and transmitted via the analogue or digital output signals. The LC display and the clear menu navigation enable a time-saving and simple commissioning.

Specifications

Overview of versions	
Version	Without LC display With LC display

Basic information	
Case	Plastic (ABS)
Ingress protection (IP code) per IEC 60529	IP54
Weight	150 g [0.33 lb]

Measuring element	
Type of measuring element	Piezo measuring cell

Accuracy specifications		
Accuracy ¹⁾		
Measuring ranges 0 ... 250, 0 ... 2,500 Pa	Pressure < 125 Pa	1 % ±2 Pa
	Pressure > 125 Pa	1 % ±1 Pa
Measuring ranges 0 ... 7,000, 0 ... 12,000 Pa	Pressure < 125 Pa	1.5 % ±2 Pa
	Pressure > 125 Pa	1.5 % ±1 Pa
Output accuracy ²⁾	Voltage signal	±0.025 V at 25 °C [77 °F]
	Current signal	±0.04 mA typical, at 25 °C [77 °F] ±0.1 mA max., at 25 °C [77 °F]
Zero point setting	Automatic ³⁾	
	Manually via push button on the printed circuit board	

1) All data refer to the current measured pressure.

2) After half an hour of warm-up time

3) Recommended for measuring ranges < 250 Pa

Measuring range				
Measuring range ¹⁾	Variant 1	Variant 2	Variant 3	Variant 4
	0 ... 2,500 Pa	0 ... 7,000 Pa	-250 ... +250 Pa	0 ... 12,000 Pa
	0 ... 2,000 Pa	0 ... 5,000 Pa	-100 ... +100 Pa	0 ... 10,000 Pa
	0 ... 1,500 Pa	0 ... 4,000 Pa	-50 ... +50 Pa	0 ... 9,000 Pa
	0 ... 1,000 Pa	0 ... 3,000 Pa	-25 ... +25 Pa	0 ... 8,000 Pa
	0 ... 500 Pa	0 ... 2,500 Pa	0 ... 250 Pa	0 ... 7,500 Pa
	0 ... 250 Pa	0 ... 2,000 Pa	0 ... 100 Pa	0 ... 7,000 Pa
	0 ... 100 Pa	0 ... 1,500 Pa	0 ... 50 Pa	-1,000 ... +1,000 Pa
	-100 ... +100 Pa	0 ... 1,000 Pa	0 ... 25 Pa	-500 ... +500 Pa
Unit	Pa kPa mbar inWC mmWC	Adjustable in the menu		
Digital display				
Type of display	LC display (optionally)			
Backlighting	Yes			
Number of lines, digits	2 lines (12 characters/line) Line 1: Active measurement Line 2: Units			

1) The measuring range is set via jumpers within the selected variant.

Process connection	
Connection location	Lower mount For hoses with inner diameter 4 ... 6 mm [0.16 ... 0.24 in]
Material	ABS (connecting nozzle)

Output signal	
Signal type	DC 0 ... 10 V, 3-wire 4 ... 20 mA, 3-wire Modbus®

Communication	
Modbus®	
Baud rate	9600 19200 38400 Adjustable in the configuration
Protocol	Modbus® via serial interface
Measuring range	-250 ... +2,500 Pa -250 ... +7,000 Pa
Transmission mode	RTU
Interface	RS-485
Addresses	1 ... 247 addresses selectable in the configuration menu
Byte format	(11 bits) in RTU mode Coding system: 8 bits binary Bits per byte: 1 start bit 8 data bits, least significant bit is sent first 1 bit for parity 1 stop bit

Voltage supply and performance data		
Current consumption		
DC 0 ... 10 V	< 1.0 W	
4 ... 20 mA	< 1.2 W	
Modbus®	< 1.3 W	
Auxiliary power U _B		
With automatic zero point setting	AC 24 V or DC 24 V ±10 %	
Without automatic zero point setting	Output signal 0 ... 10 V	DC 14 ... 30 V or AC 24 V ±10 %
	Output signal 4 ... 20 mA	DC 9 ... 30 V or AC 24 V ±10 %
Load		
Current output	Max. 500 Ω, min. 20 Ω	
Voltage output	1 kΩ	

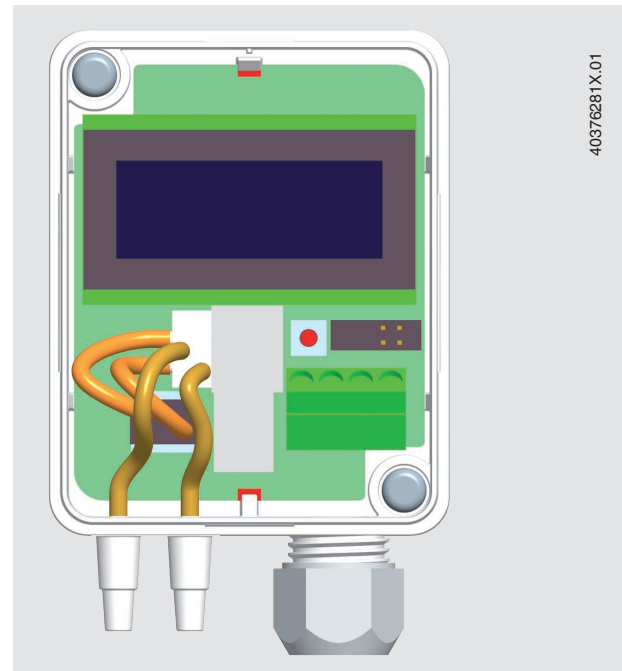
Electrical connection	
Connection type	M16 cable gland, with strain relief Screw terminals max. 1.5 mm ² Standard version with clamping area 4.5 ... 10 mm [0.18 ... 0.39 in]

Operating conditions	
Medium temperature range	-20 ... +50 °C [-4 ... +122 °F] -5 ... +50 °C [23 ... 122 °F], with automatic zero point setting
Ambient temperature range	-40 ... +70 °C [-40 ... +158 °F]
Humidity	5 ... 95 % relative humidity
Condensation	Non-condensing

Automatic zero point setting

The automatic zero point setting aligns the zero point from time to time so that a manual zero point setting is not necessary.

During the zero point setting (3 seconds every 10 minutes), the output signal and the display show the last measured value.



Approvals

Logo	Description	Region
	EU declaration of conformity	European Union
	EMC Directive	
	RoHS directive	

Optional approvals

Logo	Description	Region
	EAC	Eurasian Economic Community
	EMC Directive	
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	MChS Permission for commissioning	Kazakhstan
-	PAC Ukraine Metrology, measurement technology	Ukraine

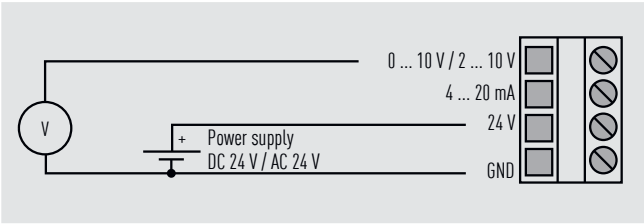
Certificates

Description	
Certificates	■ Measurement report per EN 837 ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy, calibration certificate)

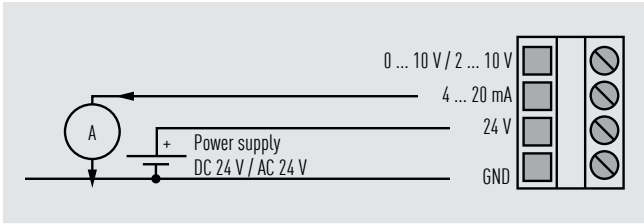
→ For approvals and certificates, see website

Electrical connection

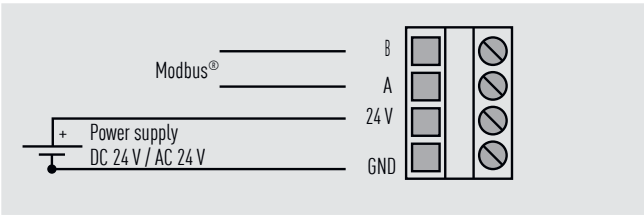
Output signal DC 0 ... 10 V



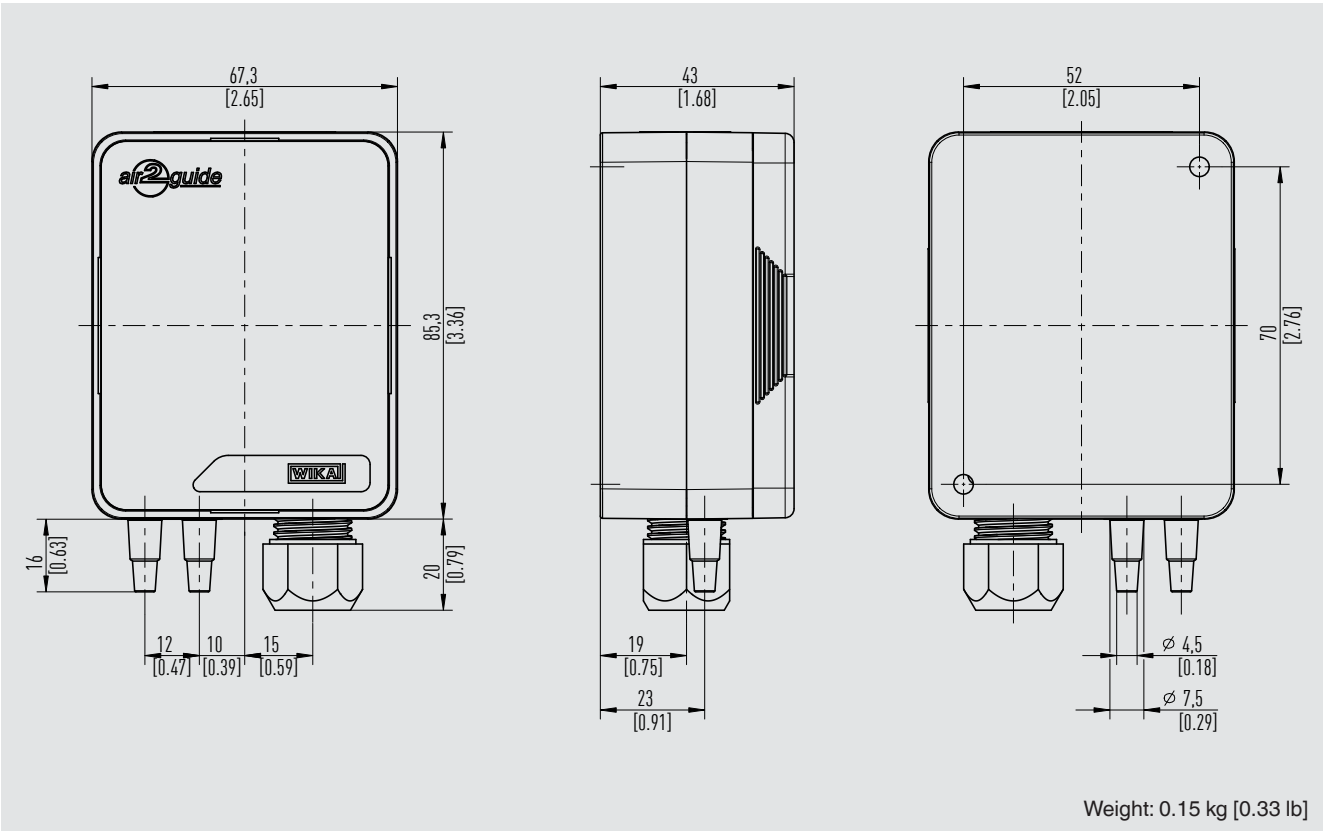
Output signal 4 ... 20 mA



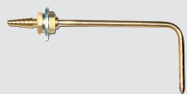
Modbus® output signal



Dimensions in mm [in]



Accessories and spare parts

Model	Description	Order number
	Static duct probes with combi hose connection for pressure measuring hoses Ø 4 ... 7 mm [0,16 ... 0,28 in]	
	Insertion length 100 mm [3.94 in]	40232981
	Insertion length 150 mm [5.91 in]	40232999
	Insertion length 200 mm [7.87 in]	40233006
	Measuring hoses	
	PVC hose, inner diameter 4 mm [0.16 in], roll of 25 m [82.0 ft]	40217841
	PVC hose, inner diameter 6 mm [0.24 in], roll of 25 m [82.0 ft]	40217850
	Silicone hose, inner diameter 4 mm [0.16 in], roll of 25 m [82.0 ft]	40217906
	Silicone hose, inner diameter 6 mm [0.24 in], roll of 25 m [82.0 ft]	40217914
	Duct connectors for measuring hoses Ø 4 ... 6 mm [0,16 ... 0,24 in]	40217507

Modbus® is a registered trademark of Schneider Electric.

Ordering information

Model / Version / Measuring range / Output signal / Zero point setting / Accessories / Approvals / Certificates / Options

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