

# Beck.

## The differential pressure gauge display P2 for air.



# Differential pressure gauge display P2

## General description

The differential pressure gauges display P2 for panel mounting are used for the measurement of differential, positive and vacuum pressures.

They offer an adjustable measurement range and two output signals, which can be selected in the menu.

Type 990M with manual zeroing

Type 990A with automatic zeroing

## Applications

Monitoring of gaseous, non-corrosive media.

Possible areas of use are:

- Building automation, air-conditioning and clean-room technology
- Valve and damper control
- Filter, fan and blower monitoring
- Air flow control

## Adjustable pressure measurement range

For optimal matching to the technical application, the pressure range can be continuously set in the pressure range from 20% to 100% of the final value. In addition, the instrument offers three different units of pressure, which can likewise be selected in the menu.

## Switchable units of pressure

Pa, mbar, inWC.

## Adjustable response time

The response time of the output signal can be switched in the menu in the range 0.1 to 20s.

## Volume flow measurement

Optionally, when measuring a volume flow via a differential pressure, it is possible to switch the output signal from linear to square-root format in the menu.

## Switchable output signal

The output signal can be changed over in the menu. As supplied, the output signal is 0 ... 10V, switchable to 4 ... 20mA

## Easy zeroing

When the gauge is depressurised, the output signal can easily be manually zeroed from the menu. The differential pressure gauge automatically zeroes itself at regular intervals. This reduces drift behaviour and simultaneously reduces the control and maintenance requirement.

## Switching output

Alongside the analogue output signal, the differential pressure gauge has two adjustable relay switching outputs with a maximum switching capability of 250VAC/5A.

## Measurement process

Piezo-resistive pressure transducer

## Technical data

Supply voltage	
Type 990M with manual zeroing	16 ... 32VDC 18 ... 30VAC
Type 990A with automatic zeroing	22 ... 30VDC/AC
Optional wall power supply	100 ... 240VAC(In)/24VDC(Out) (50 ... 60Hz)
Output signal	0 ... 10V and 4 ... 20mA
Working resistance for output 4 ... 20mA	20 ... 480Ω
Power consumption	< 100mA for DC < 250mA for AC
Pressure medium	Air and non-aggressive gases
Linearity and hysteresis error	≤ ± 1% of FS
Operating temperature	0 ... 50°C
Storage temperature	- 10 ... 70°C
Long-term stability, typical	≤ ± 0,5% to ± 2,5% of FS/year, Dependent on pressure range
Repeatability	≤ ± 0.2% of FS
Position dependence	≤ ± 0.02% of FS/g
Humidity	0 ... 95% rel., non condensing
Response time, switchable	0.0 - 20.0s
Process connection	4mm + 6mm tube connections
Electrical connection	Screw terminals for wires and braided wire up to 1.5mm <sup>2</sup>
Attachment	Panel mounting in accordance with DIN IEC 61554
Display	Red 7 segment LED display, 4-figure
Instrument dimensions	143mm x 96mm x 48mm
Weight	230g
IP rating after EN 60529	IP20
Standards / Conformity	EN60770, EN61326 2002/95/EC (RoHS)

## Pressure measurement ranges

Type	Pa	mbar	inWC	Safe +ve pressure	Burst pressure	Temperature error
990A.303	0 ... 25	0.25	0.10	20 kPa	40 kPa	± 5 % of FS
990A.313	0 ... 50	0.5	0.20	20 kPa	40 kPa	± 5 % of FS
990x.323	0 ... 100	1.0	0.40	20 kPa	40 kPa	± 5 % of FS
990x.333	0 ... 250	2.5	1.00	20 kPa	40 kPa	± 5 % of FS
990x.343	0 ... 500	5.0	2.00	20 kPa	40 kPa	± 2.5 % of FS
990x.353	0 ... 1 kPa	10	4.00	20 kPa	40 kPa	± 1 % of FS
990x.363	0 ... 2.5 kPa	25	10.05	40 kPa	70 kPa	± 1 % of FS
990x.373	0 ... 5 kPa	50	20.10	60 kPa	120 kPa	± 1 % of FS
990x.383	0 ... 10 kPa	100	40.20	60 kPa	120 kPa	± 1 % of FS
990x.393	0 ... 25 kPa	250	100.50	300 kPa	500 kPa	± 1 % of FS
990x.3A3	0 ... 50 kPa	500	200.10	300 kPa	500 kPa	± 1 % of FS
990x.3B3	0 ... 100 kPa	1,000	402.00	1.2 MPa	2 MPa	± 1 % of FS
990x.3F3	0 ... 250 kPa	2,500	1,004.75	1.2 MPa	2 MPa	± 1 % of FS

## Order matrix

Zeroing	Manual	Type 990M				
	Automatic	Type 990A				
	<b>Differential pressure</b>		3			
Selectable	<b>0 ... 25 Pa</b> (0.25 mbar)	only for type 990A		0		
Pressure measurement ranges	<b>0 ... 50 Pa</b> (0.5 mbar)	only for type 990A		1		
	<b>0 ... 100 Pa</b> (1.0 mbar)			2		
	<b>0 ... 250 Pa</b> (2.5 mbar)			3		
	<b>0 ... 500 Pa</b> (5.0 mbar)			4		
	<b>0 ... 1 kPa</b> (10 mbar)			5		
	<b>0 ... 2.5 kPa</b> (25 mbar)			6		
	<b>0 ... 5 kPa</b> (50 mbar)			7		
	<b>0 ... 10 kPa</b> (100 mbar)			8		
	<b>0 ... 25 kPa</b> (250 mbar)			9		
	<b>0 ... 50 kPa</b> (500 mbar)			A		
	<b>0 ... 100 kPa</b> (1,000 mbar)			B		
	<b>0 ... 250 kPa</b> (2,500 mbar)			F		
Unit of pressure	<b>Pascal (kPa)</b> , mbar, inWC			3		
Output signal	<b>0 ... 10 V</b> or <b>4 ... 20 mA</b> , with 2 switching outputs				1	
	<b>4 ... 20 mA</b> or <b>0 ... 10 V</b> , with 2 switching outputs				3	
Display	Red 7 segment LED display, 4-figure					1
Electrical connection, screw terminals	24VAC/VDC					4
Wall power supply	100 to 240VAC (50 to 60Hz)					5

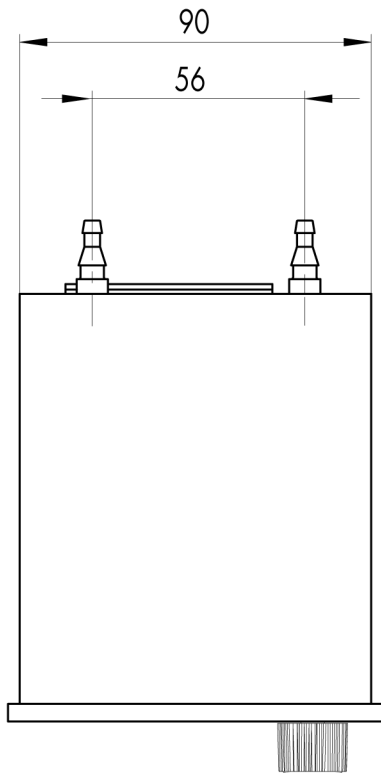
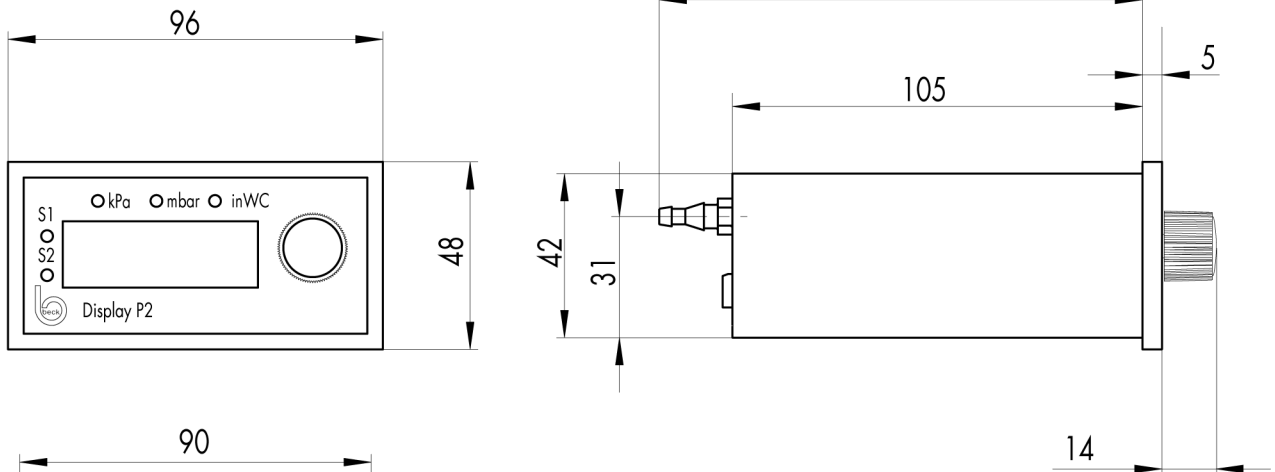
Designations in bold are factory settings.

## Accessories

Climaset® comprising 2m PVC tube and 2 plastic nipples	Article no. 6555
Climaset® comprising 2m silicone tube and 2 plastic nipples	Article no. 6557
Climaset® comprising 2m PVC tube and 2 angled metal tubes	Article no. 6550
Climaset® comprising 2m silicone tube and 2 angled metal tubes	Article no. 6556
Duct connection nipple for Climaset® 6555	Article no. 6551
Angled metal tube for Climaset® 6550	Article no. 6552
Rubber grommet for metal tube from Climaset® 6550	Article no. 6553
Roll with 100 m PVC-tube	Article no. 6424
Wall power supply	Article no. 6505
Front frame (as separate accessory)	Article no. 6506

# Differential pressure gauge display P2

## Dimensions



## Connection plan

optional, power supply pack  
 Inp. 100 ... 240V  
 50 ... 60Hz  
 max. 1000mA  
 Outp. 24VDC  
 24W

