

# Beck.

## The differential pressure transmitter for air



# Differential pressure transmitter 984M



## General description

The differential pressure transmitters of the 984M series are used to measure differential pressure, overpressure and vacuum.

They provide 2 pressure ranges and 2 output signals, which are selectable using a jumper.

## Applications

Monitoring of gaseous, non-aggressive media. Possible usage areas are:

- Building automation, air conditioning systems and clean room monitoring
- Valve and flap control
- Filter, ventilator and blower monitoring
- Control of air flows

## Configurable pressure range

For optimum adaptation to the pressure application, the transmitter can be switched between two pressure ranges. The factory setting is the sensitive range 1, which is selected by fitting a jumper. Removing the jumper activates the non-sensitive range 2.

## Configurable response time

The response time of the output signal can be configured using a jumper. If the jumper is in place the response time is slow (factory setting), which is useful for suppressing brief pressure peaks. If the application requires a fast response time the jumper must be removed.

## Volume flow measurement (optional)

The shape of the output signal can be switched from linear to square root using a jumper in order to measure the volume flow via a differential pressure.

## Output signal selection

The output signal of the 3-wire version is configurable. The factory setting is for a 0 ... 10 Volt output signal, but this can be changed to 4 ... 20 mA by removing the jumper. The 2-wire version is only available with a 4 ... 20 mA output signal.

## Easy offset calibration

The output signal can be calibrated to zero by pressing the M key (pressure transmitter must be depressurised).

## Switching output (not available with 2-wire version)

As well as an analogue output signal, the differential pressure transmitter contains an adjustable transistor switching output with a maximum switching capacity of 35 VDC/100 mA.

## Measuring method

Piezoresistive pressure transducer

## Mounting position

Can be mounted in any position. The self-compensating piezoresistive pressure transducer eliminates any possible mounting error.

## Technical data

Supply voltage	
• 3-wire version	24 VAC/VDC
• 2-wire version	24 VDC
Output signal	
• 3-wire version	0 ... 10 V and 4 ... 20 mA
• 2-wire version	4 ... 20 mA
Load for 4 ... 20 mA output	20 ... 500 $\Omega$
Pressure medium	Air and non-aggressive gases
Linearity and hysteresis error	$\leq \pm 1$ % of FS
Working temperature	0...50 °C
Storage temperature	-10 ... 70 °C
Typical long-term stability	$\leq \pm 0.5$ % to $\pm 2.5$ % of FS/year, depending on pressure range
Repetition accuracy	$\leq \pm 0.2$ % of FS
Position dependence	$\leq \pm 0.02$ % of FS/g
Humidity	0 ... 95 % rel, non-condensing
Response time, selectable	1 s or 100 ms
Process connection	6 mm hose connection
Electrical connection	Screw terminal block for wires and strands up to 1.5 mm <sup>2</sup>
Mounting	Screw mounting with serrated screws
Display, optional	Red LED display, 4 digits
Housing material	Housing with process connection P2 made from ABS, mounting part with process connection P1 made from POM
Housing dimensions	approx. $\varnothing$ 85 x 58 mm
Weight	approx. 130 g
Protection class acc. to EN 60529	IP 54 with protection cap (delivery condition) or IP 00 without protection cap
Cable conduit for protection cap	M16 or M20x1.5 connection made of polyamide
Standards / Conformance	EN60770, EN61326 2002/95/EEC (RoHS)

## Pressure ranges

Model	Range 1	Range 2	Overload capacity	Bursting pressure	Temperature error of FS
984M.323	0 ... 100 Pa	0 ... 250 Pa	20 kPa	40 kPa	≤ ± 5 % v. EW
984M.333	0 ... 250 Pa	0 ... 500 Pa	20 kPa	40 kPa	≤ ± 5 % v. EW
984M.343	0 ... 500 Pa	0 ... 1.000 Pa	20 kPa	40 kPa	≤ ± 2.5 % v. EW
984M.353	0 ... 1 kPa	0 ... 2.5 kPa	40 kPa	70 kPa	≤ ± 1 % v. EW
984M.373	0 ... 5 kPa	0 ... 10 kPa	60 kPa	120 kPa	≤ ± 1 % v. EW
984M.393	0 ... 25 kPa	0 ... 50 kPa	300 kPa	500 kPa	≤ ± 1 % v. EW
984M.3B3	0 ... 100 kPa	0 ... 250 kPa	1.2 MPa	2 MPa	≤ ± 1 % v. EW

## Order matrix

IP protection class	IP 54 with cable conduit M16	<b>984M.5</b>				
	IP 54 with cable conduit M20x1.5	<b>3</b>				
Configurable pressure ranges	<b>0 ... 100 Pa (1.0 mbar)</b>	0 ... 250 Pa (2.5 mbar)	2			
	<b>0 ... 250 Pa (2.5 mbar)</b>	0 ... 500 Pa (5.0 mbar)	3			
	<b>0 ... 500 Pa (5.0 mbar)</b>	0 ... 1.000 Pa (10 mbar)	4			
	<b>0 ... 1 kPa (10 mbar)</b>	0 ... 2,5 kPa (25 mbar)	5			
	<b>0 ... 5 kPa (50 mbar)</b>	0 ... 10 kPa (100 mbar)	7			
	<b>0 ... 25 kPa (250 mbar)</b>	0 ... 50 kPa (500 mbar)	9			
	<b>0 ... 100 kPa (1,000 mbar)</b>	0 ... 250 kPa (2,500 mbar)	B			
Pressure unit	Pascal		3			
Output signal and supply voltage	<b>0 ... 10 Volt</b> or 4 ... 20 mA, 3-wire, 24 VAC/VDC, with switching output				1	
	4 ... 20 mA, 2-wire, 24 VDC, without switching output				2	
	<b>4 ... 20 mA</b> or 0 ... 10 Volt, 3-wire, 24 VAC/VDC, with switching output				3	
	<b>0 ... 10 Volt</b> or 4 ... 20 mA, 3-wire, 24 VAC/VDC, without switching output				7	
	<b>4 ... 20 mA</b> or 0 ... 10 Volt, 3-wire, 24 VAC/VDC, without switching output				D	
Display	no display				0	
	with LED-display, 3.5 digits (not for 4 ... 20 mA output, 2-wire)				1	
Electrical connection via screw terminal block						4

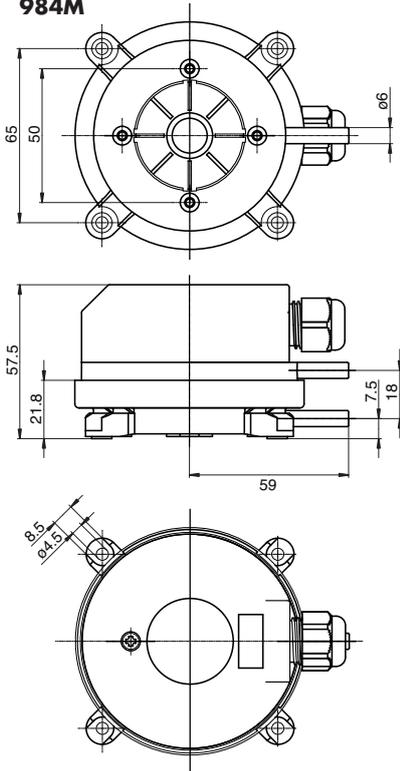
Factory settings printed in bold type.

## Accessories

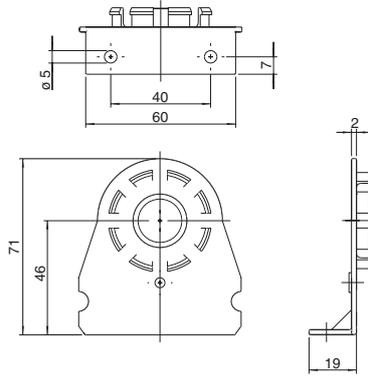
Metal mounting bracket S-shaped	Article No. 6402
Metal mounting bracket L-shaped	Article No. 6401
Snap-on plastic bracket S-shaped	Article No. 6482
Snap-on plastic bracket L-shaped	Article No. 6481
Climaset® consisting of 2m PVC hose and 2 plastic pipes	Article No. 6555
Climaset® consisting of 2m Silicone hose and 2 plastic pipes	Article No. 6557
Climaset® consisting of 2m PVC hose and 2 angled metal pipes	Article No. 6550
Climaset® consisting of 2m Silicone hose and 2 angled metal pipes	Article No. 6556
Duct connecting pipe for Climaset® 6555	Article No. 6551
Angled metal pipe for Climaset® 6550	Article No. 6552
Rubber grommet for Climaset® 6550	Article No. 6553
Roll with 100 m PVC hose	Article No. 6424
M16 cable conduit including seal and counter screw	Article No. 6562
M20x1.5 cable conduit including seal and counter screw	Article No. 6568
NPT1/2" cable conduit without insert	Article No. 6561
Folding box for individual packing (without accessories)	Article No. 6428
Folding box for individual packing (with accessories)	Article No. 6429

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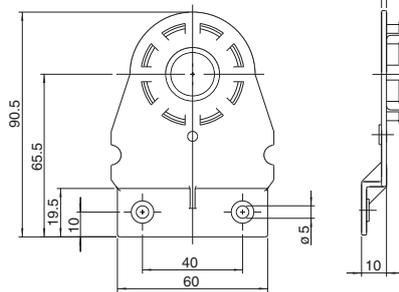
**984M**



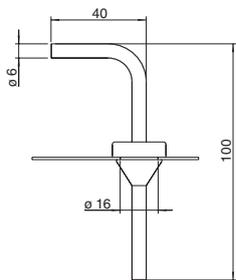
**Mounting bracket 6481**



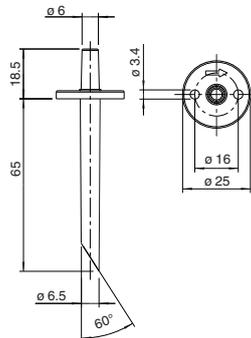
**Mounting bracket 6482**



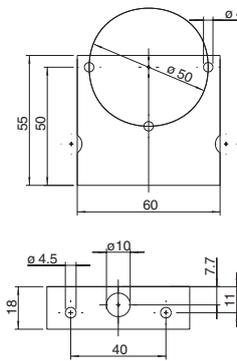
**Climaset® 6550/6556**



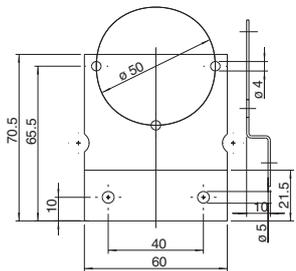
**Climaset® 6555/6557**



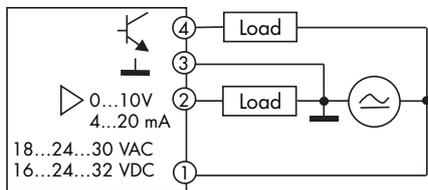
**Mounting bracket 6401**



**Mounting bracket 6402**

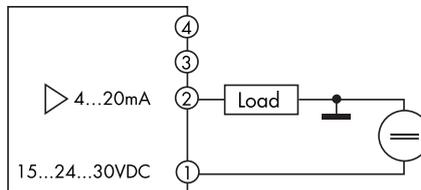


## Terminal assignments 3-wire version



4	SA	Switching output, npn
3	GO	Ground GND
2	Y	Output signal 0 ... 10 V / 4 ... 20 mA
1	G	Supply voltage 24 VAC/ VDC

## 2-wire version



4		
3		
2	Y	Output signal 4 ... 20 mA
1	G	Supply voltage 24 VDC

