

# Beck.

## The differential pressure transmitter for air



# Differential pressure transmitter 984



## General description

The differential pressure transmitters of the 984 series are used for measuring differential pressure, positive pressure and vacuum.

They offer 2 pressure ranges which can alternatively be selected by a jumper.

## Applications

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

- air-conditioning and clean rooms
- building automation
- environmental protection
- fan and blower control
- valve and flap control
- filter and blower monitoring
- fluid and level monitoring
- control of air flows

## Measuring method

Piezoresistive pressure transducer

## Selection of pressure range

To adapt best for the application the transmitter can be selected between two adjoining pressure ranges. Factory setting is for the most sensitive range, by opening of a jumpered bridge the less sensitive range is activated.

## Adjustable response time

The response time of the output signal can be selected by a jumpered bridge. Factory setting is for a slow response time, which dampens short pressure peaks. To work with a fast response time this bridge needs to be replaced.

## Mounting position

They can be mounted in any position. Due to the self-compensating piezoresistive pressure transducer any possible mounting error is eliminated.

## Switching output (not for output 4 ... 20 mA, 2-wire)

The differential pressure transmitter contains apart from the analog voltage output an additional switching output.

## Technical data

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
Long-term stability, typ.	$\leq \pm 0.5 \%$ to $2.5 \%$ 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	100 ms or 1s
Process connection	6 mm hose pipe
Electrical connection	Screw terminal block for wire up to 1.5 mm <sup>2</sup>
Mounting	Screw mounting with serrated screws
Special features	red LED-display, optional
Housing material	Housing with process connection P2 made of ABS, mounting part with process connection P1 made of POM
Housing dimensions	approx. Ø 85 x 58 mm
Weight	approx. 130 g
Protection category according to EN60529	IP 00 without protection cap IP 54 with protection cap (delivery condition)
Cable conduit for protection cap	M20 x 1.5 made of Polyamide
Standards / Conformance	EN60770, EN61326

## Pressure ranges

Type	Pressure range 1	Pressure range 2	Overload capacity	Bursting pressure	Temperature error
984.323	0 ... 100 Pa	0 ... 250 Pa	20 kPa	40 kPa	$\leq \pm 5 \%$ v. EW
984.333	0 ... 250 Pa	0 ... 500 Pa	20 kPa	40 kPa	$\leq \pm 5 \%$ v. EW
984.343	0 ... 500 Pa	0 ... 1,000 Pa	20 kPa	40 kPa	$\leq \pm 2.5 \%$ v. EW
984.353	0 ... 1 kPa	0 ... 2.5 kPa	40 kPa	70 kPa	$\leq \pm 1 \%$ v. EW
984.373	0 ... 5 kPa	0 ... 10 kPa	60 kPa	120 kPa	$\leq \pm 1 \%$ v. EW
984.393	0 ... 25 kPa	0 ... 50 kPa	300 kPa	500 kPa	$\leq \pm 1 \%$ v. EW
984.3B3	0 ... 100 kPa	0 ... 250 kPa	1.2 MPa	2 MPa	$\leq \pm 1 \%$ v. EW

## Order matrix

selectable	0 ... 100 Pa (1.0 mbar)	0 ... 250 Pa (2.5 mbar)	<b>984.3</b>	<b>2</b>				
pressure ranges	0 ... 250 Pa (2.5 mbar)	0 ... 500 Pa (5.0 mbar)		<b>3</b>				
	0 ... 500 Pa (5.0 mbar)	0 ... 1,000 Pa (10 mbar)		<b>4</b>				
	0 ... 1 kPa (10 mbar)	0 ... 2.5 kPa (25 mbar)		<b>5</b>				
	0 ... 5 kPa (50 mbar)	0 ... 10 kPa (100 mbar)		<b>7</b>				
	0 ... 25 kPa (250 mbar)	0 ... 50 kPa (500 mbar)		<b>9</b>				
	0 ... 100 kPa (1,000 mbar)	0 ... 250 kPa (2,500 mbar)		<b>B</b>				
Pressure unit	Pascal				3			
Output signal and supply voltage	0 ... 10 Volt, 3-wire, 24 VAC / VDC, with switching output					1		
	4 ... 20 mA, 2-wire, 24 VDC, without switching output					2		
	4 ... 20 mA, 3-wire, 24 VAC / VDC, with switching output					3		
	0 ... 10 Volt, 3-wire, 24 VAC / VDC, without switching output					7		
	4 ... 20 mA, 3-wire, 24 VAC / VDC, without switching output					D		
Display	none						0	
	with LED-Display, 3.5 digits (not for output 4 ... 20 mA, 2-wire)						1	
Electrical connection	screw terminal block							4

## 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 tubes	Article No. 6555
Climaset® consisting of 2m Silicone hose and 2 plastic tubes	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
Plastic tube 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
PG-11 cable conduit including sealing and counter screw	Article No. 6358
M20x1.5 cable conduit including sealing and counter screw	Article No. 6568
NPT1/2" cable conduit without counter parts	Article No. 6561
Card box for single packing	Article No. 6426

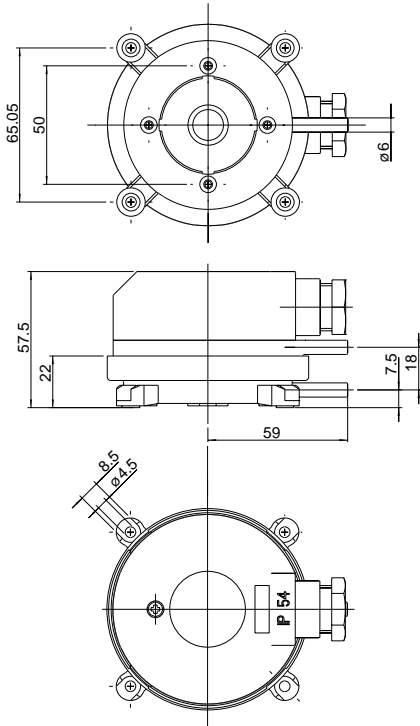
## Electrical connections

Type	<b>984.3x37...</b> without switching output	<b>984.3x32...</b> without switching output	<b>984.3x3D...</b> without switching output
Output signal shortcircuit-proof to ground	0 ... 10 V, 3-wire,	4 ... 20 mA, 2-wire,	4 ... 20 mA, 3-wire,
Supply voltage	18 ... 30 VAC and 16 ... 32 VDC	15 ... 30 VDC	18 ... 30 VAC and 16 ... 32 VDC
Supply current, max.	30 mA for AC 20 mA for DC	30 mA	30 mA
Offset adjustment	≤ ± 50 mV	≤ ± 80 µA	≤ ± 80 µA
Span adjustment	≤ ± 50 mV	≤ ± 80 µA	≤ ± 80 µA
Output current, max.	10 mA	30 mA	30 mA
Maximum Load	–	≤ 470 Ω	≤ 470 Ω

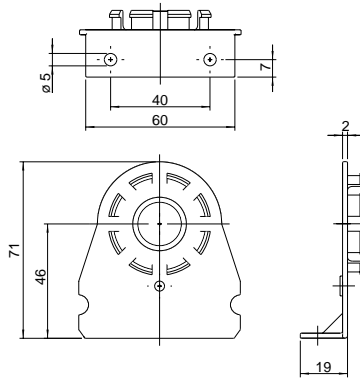
Type	<b>984.3x31...</b> with switching output	<b>984.3x33...</b> with switching output
Switching output	Open-collector, npn, SPST, 100 mA max. ≤ 35 VDC, adjustable	Open-collector, npn, SPST, 100 mA max. ≤ 35 VDC, adjustable
Hysteresis	5 ... 10 % v. FS	5 ... 10 % v. FS
Response time	> 100 ms	> 100 ms

# Differential pressure transmitter 984

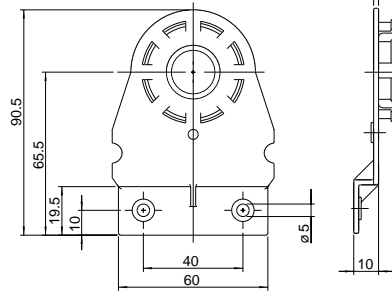
**984**



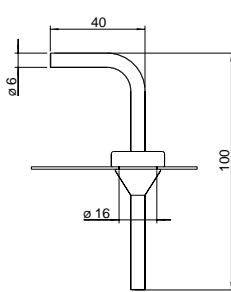
**Mounting bracket 6481**



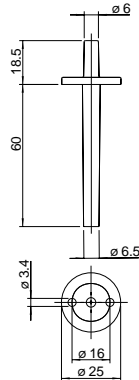
**Mounting bracket 6482**



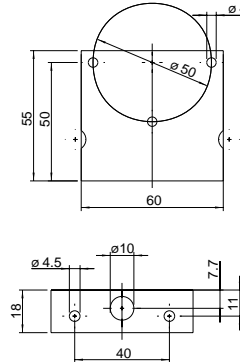
**Climaset® 6550/6556**



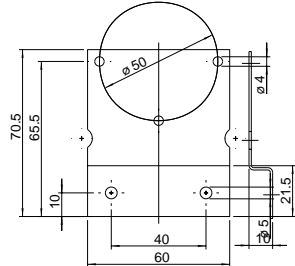
**Climaset® 6555/6557**



**Mounting bracket 6401**

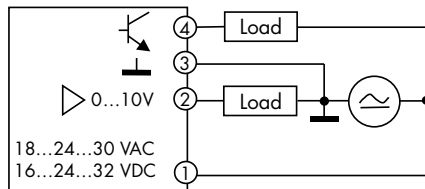


**Mounting bracket 6402**



**Connection assignment  
984.3x3104 and ...704**

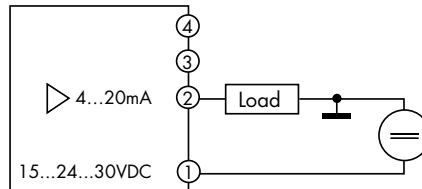
Pressure Transmitter



4	Switching output, npn
3	(GO) GND
2	(Y) Out 0 ... 10 V
1	(G) In 24 VAC / VDC

**984.3x3204**

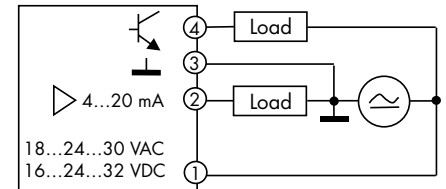
Pressure Transmitter



4	NC	do not use
3	NC	do not use
2	(Y)	Out 4 ... 20 mA
1	(G)	In 24 VDC

**984.3x3304 and ...D04**

Pressure Transmitter



4	Switching output, npn
3	(GO) GND
2	(Y) Out 4 ... 20 mA
1	(G) In 24 VAC / VDC

Technical data subject to change. (02/2004)



Beck GmbH  
Druckkontrolltechnik  
P.O. Box 10 01 36  
D-70745 Leinfelden  
Telephone +49 711 790 83-0  
Telefax +49 711 790 83-83  
e-mail sales@beck-sensors.com  
http://www.beck-sensors.com