

## Volume flow transmitter type 679

Measuring range

-1 ... 1 mbar / 0 ... 0.3 – 50 mbar



The volume flow transmitter type 679 have Bi-direction pressure ranges. Variable measurement of pressure, flow or velocity of flow is available.

Special sensors developed for each pressure range guarantee a physically precise and long term stable measurement. The diversity of versions ensure the use in many various applications in HVAC or for fine measurement in the industry or medical sector.

- With LCD-Display
- Adjustable measurement range
- Switchable output signals
- Resettable Zero Point (Reset button)
- Full scale adjustable
- Application at over and low pressure range possible
- Fast, easy mounting.  
Housing incorporates integral bracket for wall or ceiling mounting
- Adjustable k-Factor for flow and velocity

## Technical overview

### Measuring range

Flow and velocity for following pressure ranges -1 ... 1 mbar / 0 ... 0.3 – 50 mbar

### Operating conditions

Medium	Air and neutral gases			
Temperature	Medium / ambient	0 ... +70 °C		
	Storage	-10 ... +70 °C		
	No condensation			
Tolerable overload on one side	Application at over pressure range	≤ 3 mbar	P1 = 50 mbar	P2 = 4 mbar
		> 3 mbar	P1 = 100 mbar	P2 = 4 mbar
	Application at under pressure range	≤ 3 mbar	P1 = -4 mbar	P2 = -50 mbar
		> 3 mbar	P1 = -4 mbar	P2 = -100 mbar
Rupture pressure	ambient temperature	2 x overload		
	70 °C	1.5 x overload		

### Materials in contact with medium

Sensor	Ceramic Al <sub>2</sub> O <sub>3</sub> (96%)
Diaphragm	Silicone
Housing	Polycarbonat PC

### Electrical overview

2 wire	Output <sup>1)</sup>	Power supply <sup>1)</sup>	Load	Current consumption <sup>2)</sup>
	4 ... 20 mA	8.0 ... 33 VDC	< $\frac{\text{supply voltage} - 8 \text{ V}}{0.02 \text{ A}}$ [Ohm]	< 20 mA
3 wire	0 ... 10 V	13.5 ... 33 VDC / 24 VAC ±15%	> 10 kOhm	< 10 mA
	0 ... 20 mA	13.5 ... 33 VDC / 24 VAC ±15%	< 500 Ohm	< 30 mA
	4 ... 20 mA	13.5 ... 33 VDC / 24 VAC ±15%	< 500 Ohm	< 30 mA
	0 ... 5 V <sup>3)</sup>	6.5 ... 33 VDC / 24 VAC ±15%	> 10 kOhm	< 10 mA
Filter	Response time switchable by			off / 0.2s / 1s / 5s / 20s
Polarity reversal protection	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.			

### Dynamic response

Response time	< 20 ms
Load cycle	< 10 Hz

### Protection standard

Without cover	IP 00
With cover	IP 54
	IP 65

### Display

LCD Display	Double spaced	per 8 digit alphanumeric
	At additional backlight LCD-Display 30 mA current consumption	

### Ranges of adjustment

The zero point is adjustable by reset button.  
The Full scale is adjustable by DIP-Switch and additional by the turbopot.  
Display adjustable between flow and velocity.

Available units:	Pressure mbar, Pa, mmWS, kPa, hPa, inH <sub>2</sub> O	Flow: m <sup>3</sup> /s, m <sup>3</sup> /h, cfm, L/s	Velocity: m/s, fpm
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### Parameters are adjustable by customer

Pressure ranges in grades; stepless adjustable with Turbo-Poti / output signals / Unit / Output signal and additional 0 ... 5 V / filter (off / 0.2s / 1s / 5s / 20s) / k-Factor adjustable 0.0001 ... 9999 / backlight (off / 5min / on)

### Electrical connection

Screw terminals for wire and stranded conductors up to 1.5 mm<sup>2</sup>  
Cable gland with built-in strain relief PG11

### Pressure connection

Connection pipe	Ø 6.2 mm
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### Mounting instructions

Installation arrangement	Recommendation:	Vertical, with pressure connections downwards
Mounting		Mounting bracket (integrated in case)

### Tests / Admissions

UL	
Electromagnetic compatibility	CE-conformity acc. EN 61326-2-3

### Weight

~ 100 g
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### Packaging

Single packaging in cardboard	
Multiple packaging	20 / 40 / 120

## Accuracy

Parameters	Unit	±0.5 mbar	0 ... 1 mbar	0 ... 3 mbar	0 ... 5 mbar	0 ... 10 - 50 mbar
Tolerance zero point	max. % FS	±1.0	±1.0	±0.7	±0.7	±0.7
Tolerance full scale	max. % FS	±1.0	±1.0	±0.7	±0.7	±0.7
Resolution	% FS	0.2	0.2	0.1	0.1	0.1
Total of linearity, hysteresis and repeatability	max. % FS	±1.0	±1.0	±1.0	±1.0	±0.6
Long term stability acc. DIN EN 60770	% FS	±1.0	±1.0	±1.0	±1.0	±1.0
TC-Zero point <sup>4)</sup>	typ. % FS/10K	±0.2	±0.2	±0.2	±0.1	±0.1
TC-Zero point <sup>4)</sup>	max. % FS/10K	±1.0	±1.0	±0.5	±0.4	±0.4
TC sensitivity <sup>4)</sup>	typ. % FS/10K	±0.3	±0.3	±0.2	±0.1	±0.1
TC sensitivity <sup>4)</sup>	max. % FS/10K	±0.6	±0.6	±0.5	±0.5	±0.2

- no additional root-extracted errors  
- For changing diaphragm position, compensable with zero point reset

Test conditions: 25 °C, 45% rF, Power supply 24 VDC  
TC z.p. / TC z.p. 0 ... 70 °C

<sup>1)</sup> Adjustable by DIP-Switch

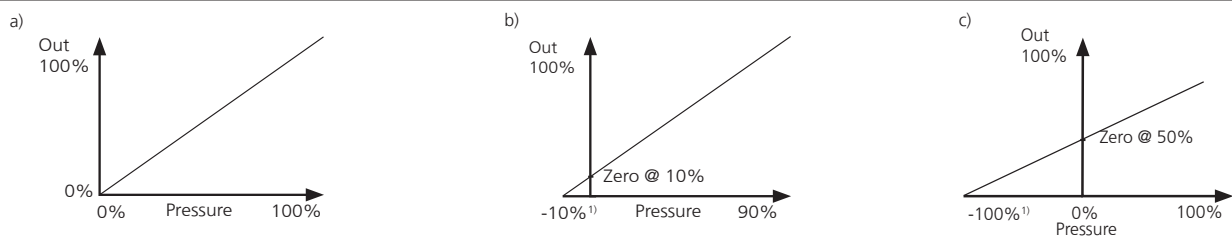
<sup>2)</sup> At nominal pressure

<sup>3)</sup> Additional adjustable by software

<sup>4)</sup> TC = Temperature coefficient

					1	2	3	4	5	6	7	8	9	10			
<b>Order code selection table</b>					679. X X X X X X X X X X												
<b>Pre-adjustment</b>	max. range				9												
<b>Signal range selectable</b>	Pressure range of 0 % to 100% FS (diagram a)				1												
	Pressure range of -10 % to 90% FS (diagram b)				2												
	Pressure range of -100 % to 100% FS (diagram c)				3												
<b>Pressure range selectable</b>	<b>mbar (hPa)</b>	<b>Pa</b>	<b>mmWS</b>	<b>inH<sub>2</sub>O</b>	<b>under pressure max.</b>												
	0 ... 0.3/0.5	30/50	3/5	0.1/0.2	-50 Pa		0										
	0 ... 0.3/0.5/1	30/50/100	3/5/10	0.1/0.2/0.3	-100 Pa		1										
	0 ... 0.5/1/3	50/100/300	5/10/30	0.3/0.5/1	-50 Pa		2										
	0 ... 1/3/5	100/300/500	10/30/50	0.5/1/2	-50 Pa		3										
	0 ... 3/5/10	300/500/1000	30/50/100	1/2/3	-50 Pa		4										
	0 ... 5/10/16	500/1000/1600	50/100/160	2/3/5	-50 Pa		5										
	0 ... 10/16/25	1000/1600/2500	100/160/250	3/5/10	-50 Pa		6										
	0 ... 16/25/50	1600/2500/5000	160/250/500	5/10/20	-50 Pa		7										
<b>Unit</b>	mbar						0	2	6								
	Pa						2	2	6								
	mmWS						3	2	6								
	hPa						4	2	6								
	kPa						5	2	6								
	inH <sub>2</sub> O						6	2	6								
	m <sup>3</sup> /s		mbar				8	3									
			Pa				9	3									
	m <sup>3</sup> /h		mbar				E	3									
			Pa				F	3									
	cfm		inH <sub>2</sub> O				K	3									
	L/s		mbar				M	3									
			Pa				N	3									
	m/s		mbar				S	3									
		Pa				T	3										
fpm		inH <sub>2</sub> O				Y	3										
<b>Output signal</b>	Linear with filter (transposable)						2	6									
	Square root extracted with filter (transposable)						3										
<b>Output / power supply</b>	0 ... 10 V		13.5 ... 33 VDC / 24 VAC ± 15 % (3-Leiter)						1								
	0 ... 20 mA		13.5 ... 33 VDC / 24 VAC ± 15 % (3-Leiter)						3								
	4 ... 20 mA		13.5 ... 33 VDC / 24 VAC ± 15 % (3-Leiter)						4								
			8.0 ... 33 VDC (2-Leiter)						5								
<b>Option</b>	at delivery no pre-adjustment						2	6									
	with display in pressure unit chosen above										1						
	with display in %fs										2						
<b>Pressure connection / pressure orifices</b>	Connection pipe Ø 6.2 mm		without pressure orifices											1			
			pressure orifices on P1											2			
			pressure orifices on P2													3	
			pressure orifices on P1 and P2														4
<b>Accessories / connection Kit</b>	IP 54		without												0		
			with connection kit (metal), 90° angled including tube 2 m long (Fig. 1)													1	
			with connection kit (plastic), straight including tube 2 m long (Fig. 2)														2
	IP 65		without													3	
			with connection kit (metal), 90° angled including tube 2 m long (Fig. 1)														4
		with connection kit (plastic), straight including tube 2 m long (Fig. 2)													5		
<b>Pressure range variation (optinal)</b>	Indicate W and state range on order (e.g.: W0 ... + 8mbar/OUT1...6V)				1										W		

### Range of characteristic line



### Accessories <sup>2)</sup>

		Bestellnummer
Connection kit for vent duct (metal), 90° angled	including tube 2 m long (Fig. 1)	104312
Connection kit for vent duct (plastic), straight	including tube 2 m long (Fig. 2)	100064
DIN-rail mounting adaptor (Fig. 3)		112854
Calibration certificate		104551

<sup>1)</sup> under pressure max. acc. order code selection table = -50 Pa/ 100 Pa      <sup>2)</sup> Accessories supplied loose

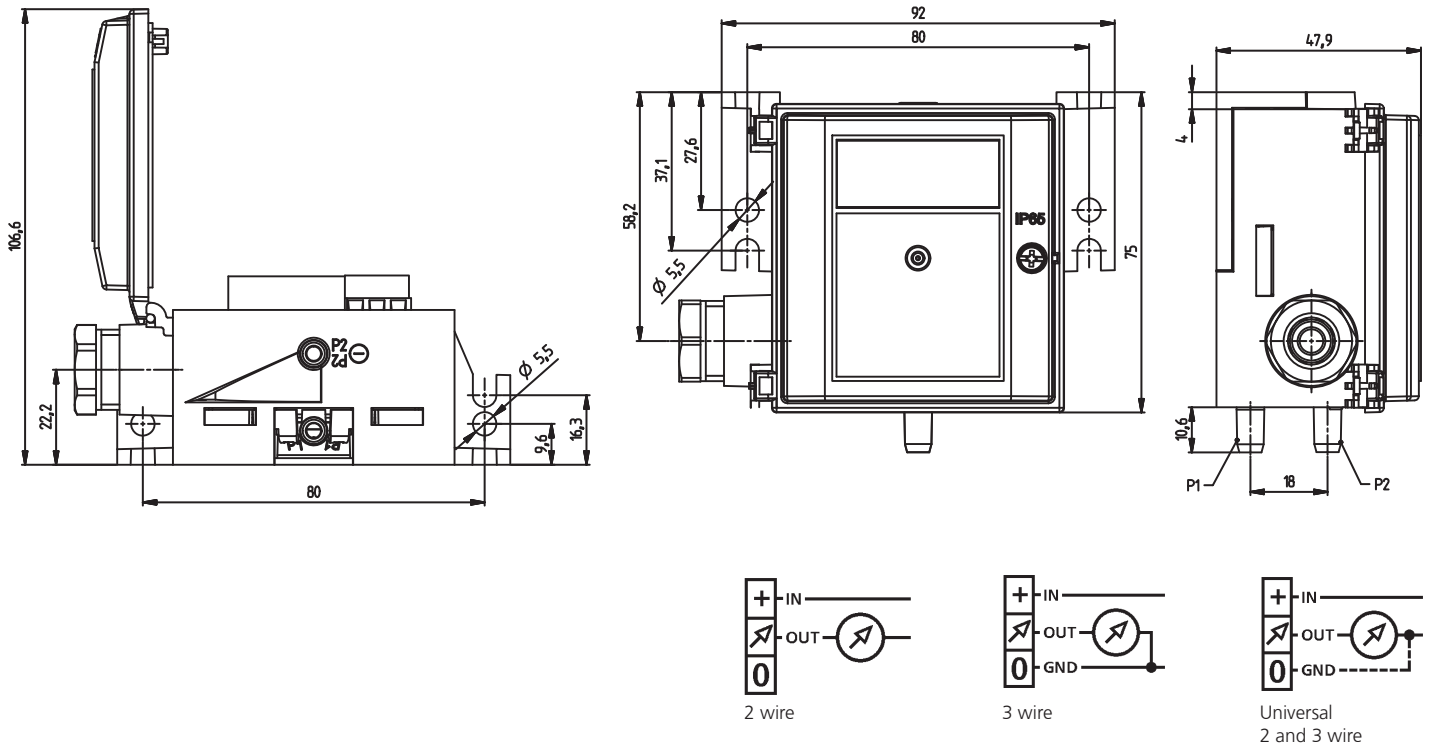
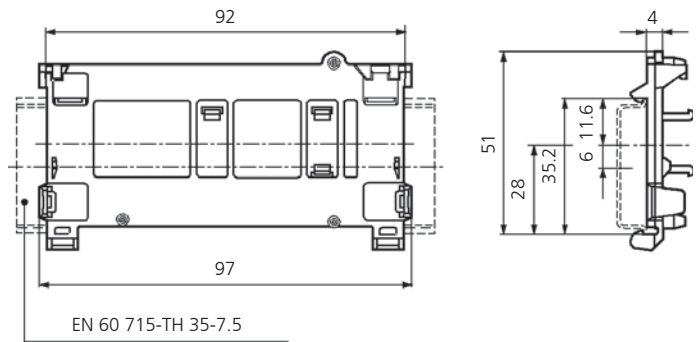
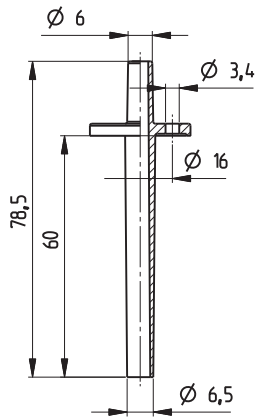
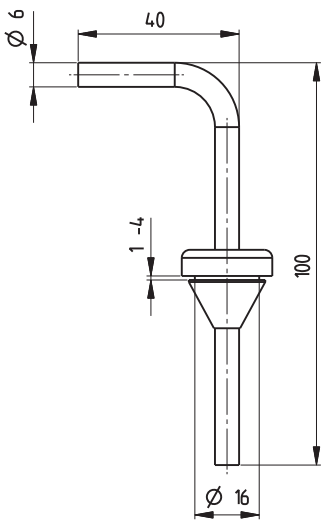


Fig. 1

Fig. 2

Fig. 3



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