



Volumen flow transmitter

Volume flow transmitter

Type 679

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.



Measuring range

-1 ... 1 mbar /

0 ... 0.3 – 50 mbar

- + 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 ₂ O ₃ (96%)
Diaphragm	Silicone
Housing	Polycarbonat PC

Electrical overview

2 wire	Output ¹⁾ 4 ... 20 mA	Power supply ¹⁾ 8.0 ... 33 VDC	Load < $\frac{\text{supply voltage} \cdot \text{I}_V}{0.02 \text{ A}}$ [Ohm]	Current consumption ²⁾ < 20 mA
	0 ... 10 V	13.5 ... 33 VDC / 24 VAC ±15%	> 10 kOhm	< 10 mA
3 wire	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 ³⁾	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
	IP 54
With cover	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 ₂ O	Flow: m ³ /s, m ³ /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 mm²
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

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 ⁴⁾	typ. % FS/10K	±0.2	±0.2	±0.2	±0.1	±0.1
TC-Zero point ⁴⁾	max. % FS/10K	±1.0	±1.0	±0.5	±0.4	±0.4
TC sensitivity ⁴⁾	typ. % FS/10K	±0.3	±0.3	±0.2	±0.1	±0.1
TC sensitivity ⁴⁾	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

¹⁾ Adjustable by DIP-Switch

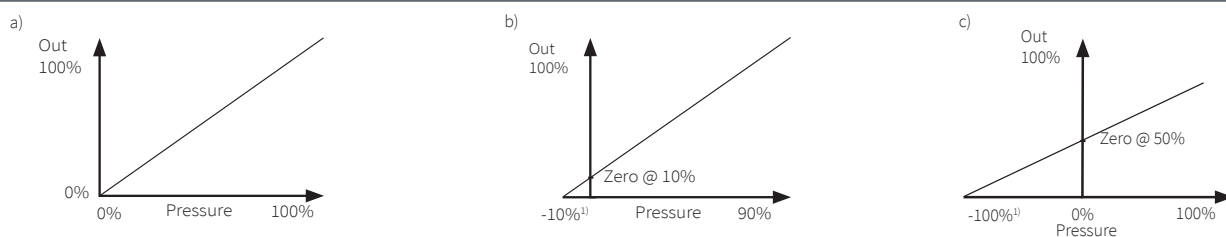
²⁾ At nominal pressure

³⁾ Additional adjustable by software

⁴⁾ TC = Temperature coefficient

					1	2	3	4	5	6	7	8	9	10		
Order code selection table					679.	X	X	X	X	X	X	X	X	X	X	
Pre-adjustment	max. range				9											
Signal range selectable	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											
Pressure range selectable	mbar (hPa)	Pa	mmWS	inH₂O	under pressure max.											
	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										
Unit	mbar						0	2	6							
	Pa						2	2	6							
	mmWS						3	2	6							
	hPa						4	2	6							
	kPa						5	2	6							
	inH ₂ O						6	2	6							
	m ³ /s		mbar				8	3								
			Pa				9	3								
	m ³ /h		mbar				E	3								
			Pa				F	3								
	cfm		inH ₂ O				K	3								
	L/s		mbar				M	3								
			Pa				N	3								
	m/s		mbar				S	3								
		Pa				T	3									
fpm		inH ₂ O				Y	3									
Output signal	Linear with filter (transposable)						2	6								
	Square root extracted with filter (transposable)						3									
Output / power supply	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							
Option	at delivery no pre-adjustment								2	6						
	with display in pressure unit chosen above										1					
	with display in %fs										2					
Pressure connection / pressure orifices	without pressure orifices													1		
	pressure orifices on P1													2		
	pressure orifices on P2													3		
	pressure orifices on P1 and P2													4		
Accessories / connection Kit	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		
Pressure range variation (optimal)	Indicate W and state range on order (e.g.: W0 ... + 8mbar/OUT1...6V)				1										W	

Range of characteristic line



Accessories ²⁾ Order number

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 adapter (Fig. 3)	112854
Calibration certificate	104551

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

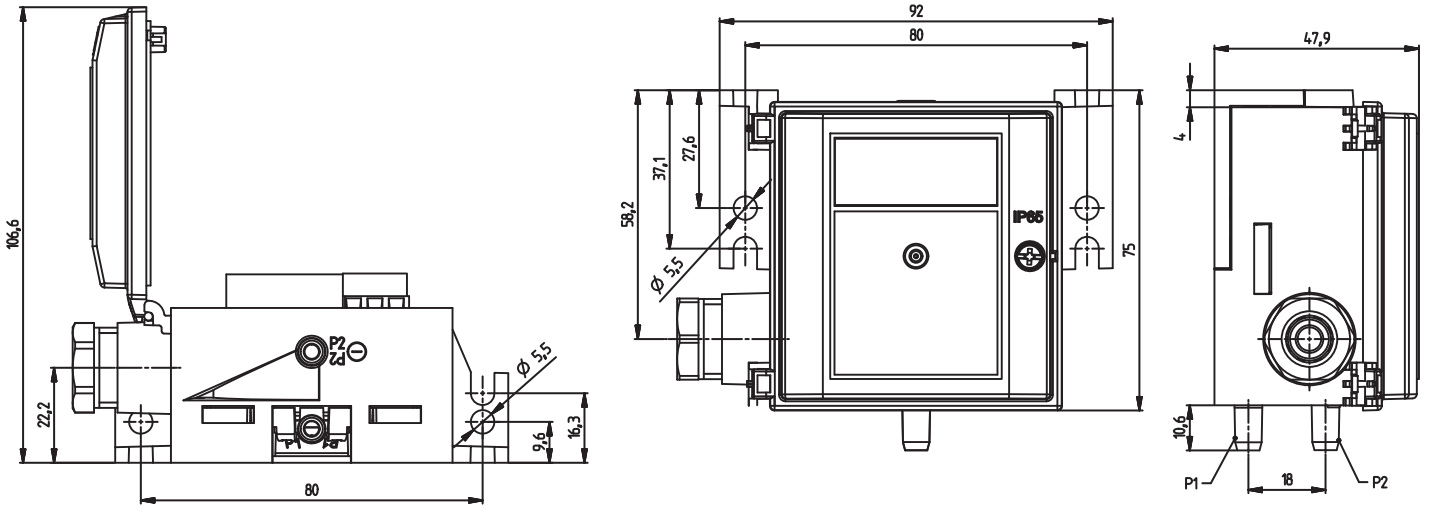


Fig. 1

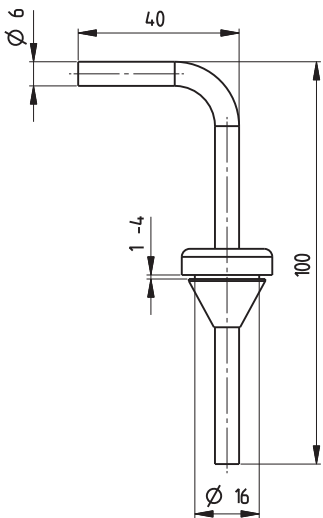


Fig. 2

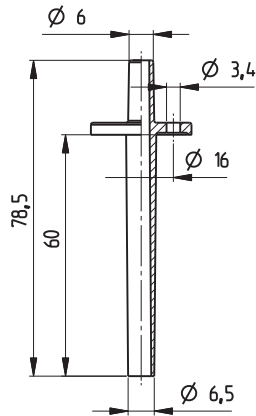
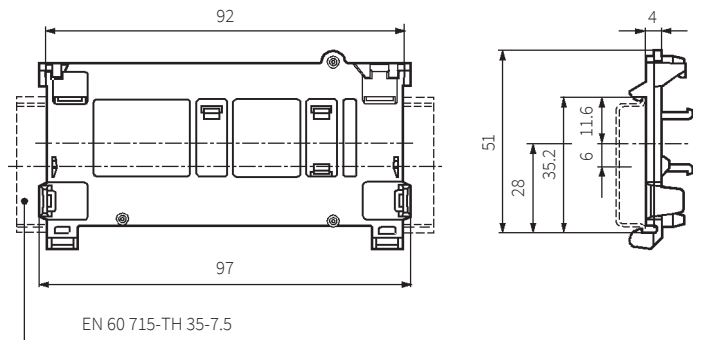


Fig. 3



Huba Control AG

Headquarters Schweiz
Industriestrasse 17
CH-5436 Würenlos
Telefon +41 56 436 82 00
Fax +41 56 436 82 82
info.ch@hubacontrol.com

Huba Control AG

Niederlassung Deutschland
Schlattgrabenstrasse 24
D-72141 Walddorfhäslach
Telefon +49 7127 2393 00
Fax +49 7127 2393 20
info.de@hubacontrol.com

Huba Control AG

Vestiging Nederland
Hamseweg 20A
NL-3828 AD-Hoogland
Telefoon +31 33 433 03 66
Telefax +31 33 433 03 77
info.nl@hubacontrol.com

Huba Control SA

Succursale France
Rue Lavoisier
Technopôle Forbach-Sud
F-57602 Forbach Cedex
Téléphone +33 3 87 84 73 00
Télécopieur +33 3 87 84 73 01
info.fr@hubacontrol.com

Huba Control AG

Branch Office United Kingdom
Unit 13 Berkshire House, County Park
Business Centre, Shivenham Road
Swindon - Wiltshire SN1 2NR
Phone +44 1993 77 66 67
Fax +44 1993 77 66 71
info.uk@hubacontrol.com

www.hubacontrol.com

