



Pressure transmitter

Relative pressure transmitter Type 519



The pressure transmitter type 519 has a compact and robust design and a very high measurement accuracy.

The flush diaphragm offers the use in the process technique of pasty media.

Beside various pressure- and electrical connectors there are pressure ranges from 400 mbar to 60 bar full scale available.

This sensor utilises a ceramic technology, developed by Huba Control and for the last 20 years, in millions of applications.

Pressure range
0 ... 0.4 – 60 bar

- + Flush diaphragm
- + High measurement accuracy
- + Available with integrated temperature measurement
- + There are low pressure ranges from 400 mbar full scale available
- + Compact and rugged construction

Technical Overview

Pressure range

Relative	0 ... 0.4 – 60 bar
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Operating conditions

Medium		Liquids, pasty media and gases
Temperature	Medium	-25 ... +125 °C
	Ambient	-25 ... +85 °C
	Storage	-40 ... +100 °C
Tolerable overload / rupture pressure	≤ 1.6 bar	max. 4.8 bar
	> 1.6 bar	3x FS

Materials

Cover		Stainless steel 1.4404 / AISI 316L
Materials in contact with medium	Pressure connection	Stainless steel 1.4404 / AISI 316L
	Sensor	Ceramic Al ₂ O ₃ (99.6%)
	Sealing material	FPM, EPDM

Electrical overview

	Output	Power supply	Load	Current consumption	
2 wire	4 ... 20 mA	10 ... 30 VDC	< $\frac{\text{Supply voltage } 10\text{V}}{0.02\text{A}}$ [Ohm]	< 23 mA	
	0 ... 5 V	7 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA	
3 wire	0 ... 10 V	12 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA	
	ratiom. 10 ... 90%	5 VDC ±10%	>10 kOhm / < 100 nF	< 5 mA	
4 wire (with temperature)	Pressure	ratiom. 10 ... 90%	5 VDC ±10%	>10 kOhm / < 100 nF	< 5 mA
	Temperature (-40 ... +150 °C)	ratiom. 10 ... 90%	5 VDC ±10%	>10 kOhm / < 100 nF	< 5 mA
Polarity reversal protection	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.				
Insulation voltage	1000 VDC				

Dynamic response

Start-up time		< 100 ms
Response time	Pressure	< 5 ms
	Temperature T90	< 5 s
Load cycle		< 100 Hz

Electrical connection

Connector	Protection standard	Protection class
Connector DIN EN 175301-803-A	IP 65	III
Connector DIN EN 175301-803-C (Industrial standard 9.4 mm)	IP 65	III
Connector M12x1	IP 67	III


Pressure connection

Outside thread	G ½	sealed at back DIN 3852-E with profile seal ring in FPM (-30 ... +135 °C)
	G ½	dual sealed with profile seal ring in FPM (-30 ... +135 °C)
	G ¾	dual sealed with profile seal ring in FPM (-30 ... +135 °C)

Installation arrangement

Unrestricted

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3	
Shock acc. IEC 60068-2-27	100 g, 11ms, half sine wave, 1x, all 6 directions 40 g, 6 ms, half sine wave, 1000x, all 6 directions	
Vibration nach IEC 60068-2-6	10 g, 10 ... 2000 Hz, 1 Octave/min., all 3 directions, 50 constant load	
Explosion protection 	without zone separation	Ex II 1 G Ex ia IIC T4 Ga Ex II 1 D Ex ia IIIC T120 °C Da
	with zone separation	Ex II ½ G Ex ia IIC T4 Ga/Gb Ex II ½ D Ex ia IIIC T120 °C Da/Db
UL	ANSI/UL 61010-1 acc. E325110	

Weight

110 ... 140 g

Packaging (Please state on order)

Single packaging in cardboard	accessories integrated
Multiple packaging in cardboard (25 pcs)	

Accuracy

Standard

Parameter pressure (≥ 1 bar)	Unit	
Characteristic line ¹⁾ (at 25 °C)	% fs ± 0.3	
Resolution	% fs < 0.1	
Long term stability acc. IEC 60770-1	% fs ± 0.25	
Temperature error (at -25 °C ... +125 °C) ²⁾	% fs/10K	± 0.15

Parameter pressure (< 1 bar)	Unit	
Characteristic line ¹⁾ (at 25 °C)	% fs ± 0.5	
Resolution	% fs < 0.1	
Long term stability acc. IEC 60770-1	% fs ± 0.25	
Temperature error (at -25 °C ... +125 °C) ²⁾	% fs/10K	± 0.15

Higher accuracy




Parameter pressure (≥ 1 bar)	Unit	
Characteristic line ¹⁾ (at 25 °C)	% fs ± 0.3	
Resolution	% fs < 0.1	
Long term stability acc. IEC 60770-1	% fs ± 0.25	
Total error band (at -25 °C ... +125 °C)	% fs ± 0.5	




Parameter pressure (< 1 bar)	Unit	
Characteristic line ¹⁾ (at 25 °C)	% fs ± 0.5	
Resolution	% fs < 0.1	
Long term stability acc. IEC 60770-1	% fs ± 0.25	
Total error band (at -25 °C ... +125 °C)	% fs ± 0.7	

Parameter temperature	Unit	
Characteristic line	°C	± 3.0
Resolution	°C	0.2

Test conditions: 45% rF
Balance position: vertical, pressure connection down

¹⁾ incl. zero point, full scale, linearity, hysteresis and repeatability

			1	2	3	4	5	6	7	8	9	10	11		
Order code selection table in bar			519.	X	X	X	X	X	X	X	X	X	X	X	
Pressure mode	Relative		9												
	Relative with higher accuracy		D												
Pressure range¹⁾	0 ... 0.4 bar			2	7		0,2								
	0 ... 0.6 bar			2	8		0,2								
	0 ... 1.0 bar			1	1		0,2								
	0 ... 1.6 bar			1	2		0,2								
	0 ... 2.5 bar			1	4		0,2								
	0 ... 4.0 bar			1	5		0,3								
	0 ... 6.0 bar			1	7		0,3								
	0 ... 10.0 bar			3	0		0,3								
	0 ... 16.0 bar			3	1		0,3								
	0 ... 25.0 bar			3	2		0,3								
	0 ... 40.0 bar			3	3		0,3								
	0 ... 60.0 bar			4	0		0,3								
Sealing material	FPM	Fluoro elastomer					0								
	EPDM	Ethylene propylene					1								
Version	standard						0								
	with Ex-Admission  ²⁾	without zone separation	Ex II 1 GD				2	4	1,3						
	with Ex-Admission  ²⁾	with zone separation ³⁾	Ex II 1/2 GD				3	4	1,3						
Output / power supply	0 ... 5 V	7 ... 33 VDC						1							
	0 ... 10 V	12 ... 33 VDC						2							
	4 ... 20 mA	10 ... 30 VDC						3							
	4 ... 20 mA  ²⁾	10 ... 30 VDC						4	1,3						
	ration. 10 ... 90%	5VDC ±10%						7							
	ration. 10 ... 90%	5VDC ±10% with temperature						5	3						
Electical connection⁴⁾	Connector	M12x1 2L: IN=1 / OUT=3	3L: IN=1 / OUT=4 / GND=3 / Opt. T=2					1,2	M						
		M12x1	3L: IN=1 / OUT=3 / GND=4						1						
		DIN EN 175301-803-A							2						
		DIN EN 175301-803-C													
Pressure connection¹⁾	Outside thread	G ½ sealed at back DIN 3852-E								0	1	1			
		G ½ dual sealed									0	2	1		
		G ¾ dual sealed										0	3	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g. W0... + 0.5bar/OUT0.5...4.5V)												W		

			1	2	3	4	5	6	7	8	9	10	11		
Order code selection table in psi			519.	X	X	X	X	X	X	X	X	X	X	X	
Pressure mode	Relative		9												
	Relative with higher accuracy		D												
Pressure range¹⁾	0 ... 6 psi			A	7		0,2								
	0 ... 10 psi			A	8		0,2								
	0 ... 15 psi			B	1		0,2								
	0 ... 20 psi			B	2		0,2								
	0 ... 30 psi			B	4		0,2								
	0 ... 60 psi			B	5		0,3								
	0 ... 100 psi			B	7		0,3								
	0 ... 150 psi			C	0		0,3								
	0 ... 200 psi			C	1		0,3								
	0 ... 300 psi			C	2		0,3								
	0 ... 500 psi			C	3		0,3								
	0 ... 750 psi			D	0		0,3								
Sealing material	FPM	Fluoro elastomer					0								
	EPDM	Ethylene propylene					1								
Version	standard						0								
	with Ex-Admission  ²⁾	without zone separation	Ex II 1 GD				2	4	1,3						
	with Ex-Admission  ²⁾	with zone separation ³⁾	Ex II 1/2 GD				3	4	1,3						
Output / power supply	0 ... 5 V	7 ... 33 VDC						1							
	0 ... 10 V	12 ... 33 VDC						2							
	4 ... 20 mA	10 ... 30 VDC						3							
	4 ... 20 mA  ²⁾	10 ... 30 VDC						4	1,3						
	ration. 10 ... 90%	5VDC ±10%						7							
	ration. 10 ... 90%	5VDC ±10% with temperature						5	3						
Electical connection⁴⁾	Connector	M12x1 2L: IN=1 / OUT=3	3L: IN=1 / OUT=4 / GND=3 / Opt. T=2					1,2	M						
		M12x1	3L: IN=1 / OUT=3 / GND=4						1						
		DIN EN 175301-803-A							2						
		DIN EN 175301-803-C													
Pressure connection¹⁾	Outside thread	G ½ sealed at back DIN 3852-E								0	1	1			
		G ½ dual sealed									0	2	1		
		G ¾ dual sealed										0	3	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g. W0... + 0.5bar/OUT0.5...4.5V)												W		

¹⁾ Other pressure ranges on request

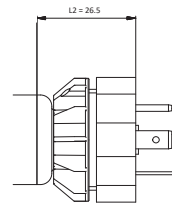
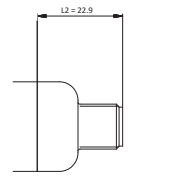
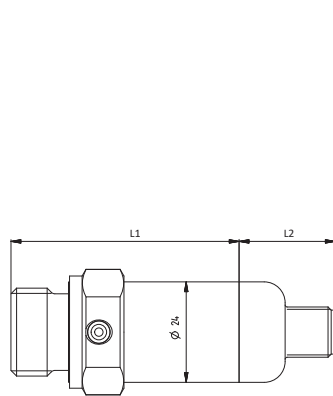
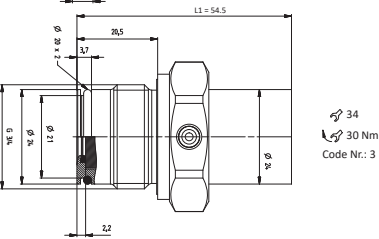
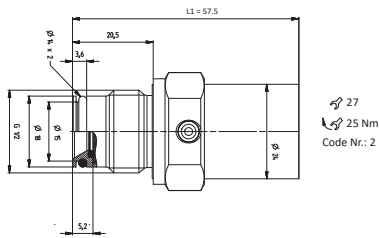
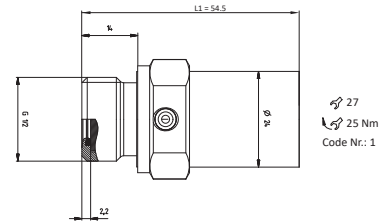
²⁾ without UL-Admission

³⁾ Turn-down versions max. ≥ 1 bar

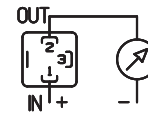
⁴⁾ Delivery without female connector

Female connector DIN EN 175301-803-A with seal	103510
Connector DIN EN 175301-803-C with seal	104244
Corner-wire box for connector M12x1	106975
Corner-wire box for connector M12x1 with cable 2.0 m	114604
Straight-wire box for connector M12x1	114570
Straight-wire box for connector M12x1 with cable 2.0 m	114605
Calibration certificate	104551

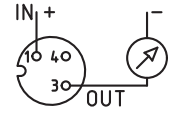
Dimensions in mm / Electrical connections



2 wire

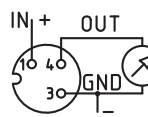


1 (IN) 2 (OUT)

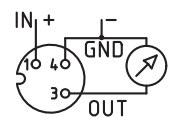


1 (IN) 3 (OUT)

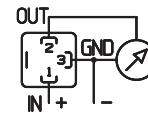
3 wire



1 (IN) 3 (GND) 4 (OUT)

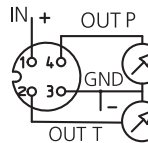


1 (IN) 3 (OUT) 4 (GND)



1 (IN) 2 (OUT) 3 (GND)

4 wire

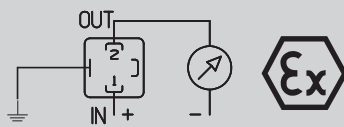


1 (IN) 2 (OUT T) 3 (GND) 4 (OUT P)

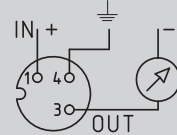
Device design with explosion protection: 4 ... 20 mA
The grounding connection is conductively connected to the pressure transmitter housing.

connector DIN
EN 175301-803-A

connector M12x1



1 (IN) 2 (OUT) ⊕



1 (IN) 3 (OUT) 4 (⊕)



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