

Relative pressure transmitter type 519

Pressure range
0 ... 0.4 – 60 bar



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.

- 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 Ambient Storage	-25 ... +125 °C -25 ... +85 °C -40 ... +100 °C
Tolerable overload / rupture pressure	≤ 1.6 bar > 1.6 bar	max. 4.8 bar 3x FS

Materials

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

Electrical overview

	Output	Power supply	Load	Current consumption
2 wire	4 ... 20 mA	10 ... 30 VDC	< $\frac{\text{Supply voltage} \cdot 10 \text{ V}}{0.05 \text{ A}}$ [Ohm]	< 23 mA
3 wire	0 ... 5 V 0 ... 10 V ratiom. 10 ... 90%	7 ... 33 VDC 12 ... 33 VDC 5 VDC ±10%	>10 kOhm / < 100 nF >10 kOhm / < 100 nF >10 kOhm / < 100 nF	< 7 mA < 7 mA < 5 mA
4 wire (with temperature)	Pressure Temperature (-40 ... +150 °C) ratiom. 10 ... 90%	5 VDC ±10% 5 VDC ±10%	>10 kOhm / < 100 nF >10 kOhm / < 100 nF	< 5 mA < 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 Temperature T90	< 5 ms < 5 s
Load cycle		< 100 Hz

Electrical connection

	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

	G ½	sealed at back DIN 3852-E with profile seal ring in FPM (-30 ... +135 °C)
Outside thread	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
Pressure mode	Relative	9										
	Relative with higher accuracy	D										
Pressure range ¹⁾	0 ... 0.4 bar		2	7								
	0 ... 0.6 bar		2	8								
	0 ... 1.0 bar		1	1								
	0 ... 1.6 bar		1	2								
	0 ... 2.5 bar		1	4								
	0 ... 4.0 bar		1	5								
	0 ... 6.0 bar		1	7								
	0 ... 10.0 bar		3	0								
	0 ... 16.0 bar		3	1								
	0 ... 25.0 bar		3	2								
	0 ... 40.0 bar		3	3								
	0 ... 60.0 bar		4	0								
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 ⁴⁾	10 ... 30 VDC					4	1,3				
	ratiom. 10 ... 90%	5VDC ±10%					7					
	ratiom. 10 ... 90%	5VDC ±10% with temperature					5	3				
Electrical connection ⁴⁾	Connector	M12x1 2L: IN=1 / OUT=3 3L: IN=1 / OUT=4 / GND=3 / Opt. T=2						3				
		M12x1 3L: IN=1 / OUT=3 / GND=4						1,2	M			
		DIN EN 175301-803-A						1				
		DIN EN 175301-803-C						2				
Pressure connection ¹⁾	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
Pressure mode	Relative	9										
	Relative with higher accuracy	D										
Pressure range ¹⁾	0 ... 6 psi		A	7								
	0 ... 10 psi		A	8								
	0 ... 15 psi		B	1								
	0 ... 20 psi		B	2								
	0 ... 30 psi		B	4								
	0 ... 60 psi		B	5								
	0 ... 100 psi		B	7								
	0 ... 150 psi		C	0								
	0 ... 200 psi		C	1								
	0 ... 300 psi		C	2								
	0 ... 500 psi		C	3								
	0 ... 750 psi		D	0								
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 ⁴⁾	10 ... 30 VDC					4	1,3				
	ratiom. 10 ... 90%	5VDC ±10%					7					
	ratiom. 10 ... 90%	5VDC ±10% with temperature					5	3				
Electrical connection ⁴⁾	Connector	M12x1 2L: IN=1 / OUT=3 3L: IN=1 / OUT=4 / GND=3 / Opt. T=2						3				
		M12x1 3L: IN=1 / OUT=3 / GND=4						1,2	M			
		DIN EN 175301-803-A						1				
		DIN EN 175301-803-C						2				
Pressure connection ¹⁾	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

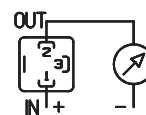
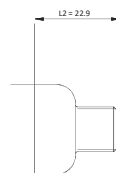
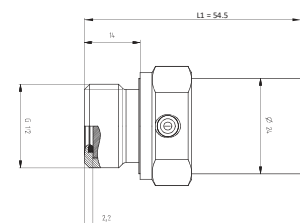
¹⁾ Other pressure ranges on request

²⁾ without UL-Admission

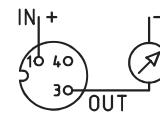
³⁾ Turn-down versions allowed up to 1 bar

⁴⁾ Delivery without female connector

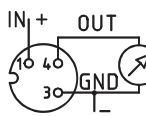
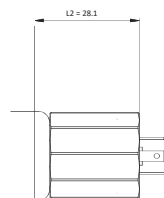
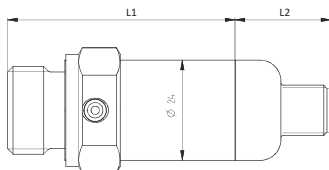
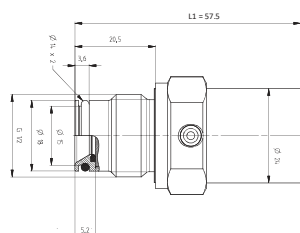
Accessories <i>(supplied loose)</i>	Order number
Female connector DIN EN 175301-803-A with seal	103510
Connector DIN EN 175301-803-C with seal	104244
Corner-wire box for connector M12x1	106975
Corner-wire box for connector M12x1 with cable 2.0 m	114604
Straight-wire box for connector M12x1	114570
Straight-wire box for connector M12x1 with cable 2.0 m	114605
Calibration certificate	104551



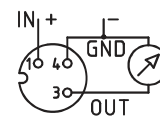
1 (IN) 2 (OUT)



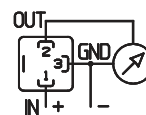
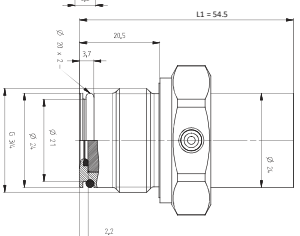
1 (IN) 3 (OUT)



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

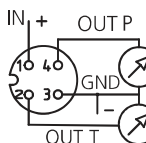


1 (IN) 3 (OUT) 4 (GND)



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

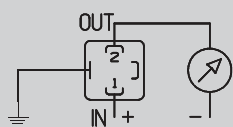
4 wire



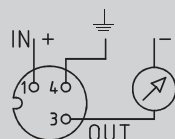
1 (IN) 2 (OUT T) 3 (GND) 4 (OUT P)

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

connector M12x1



1 (IN) 2 (OUT) $\perp$



1 (IN) 3 (OUT) 4 ($\perp$)