

Relative pressure transmitter type 525

Pressure range
0 ... 0.05 – 0.6 bar



The pressure transmitter type 525 has a compact and robust design and a very high measurement accuracy. The pressure transmitter with its large variety of pressure and electrical connection has also pressure ranges from 50 mbar full scale.

The compact 525 pressure transmitter is based upon the well proven ceramic technology developed by Huba Control over 20 years ago.

- Very high measurement accuracy
- Excellent thermal characteristic
- Pressure ranges from 50 mbar full scale available
- Compact and rugged construction
- Large selection of connections available

Technical overview

Pressure range

Relative 0 ... 0.05 – 0.6 bar

Operating conditions

Medium		Liquids and gases
Temperature	Medium	FPM -15 ... +85 °C
		EPDM -25 ... +85 °C
	Ambient	NBR -20 ... +85 °C
		Storage -25 ... +85 °C
		-40 ... +85 °C

Tolerable overload / rupture pressure

2 bar

Tolerable negative pressure

-0.3 bar

Materials

Plug accommodation		Polyarylamide 50% GF UL 94 V-0
Materials in contact with medium	pressure connection	Stainless steel 1.4404 / AISI 316L
	measuring element	Ceramics Al ₂ O ₃ (99.6%)
	sealing material	FPM, EPDM, NBR

Electrical overview

2 wire	Output	Power supply	Load	Current consumption
	4 ... 20 mA	10 ... 30 VDC	$\frac{\text{supply voltage} - 10 \text{ V}}{0.02 \text{ A}}$ [Ohm]	< 23 mA
3 wire	0 ... 5 V	7 ... 33 VDC	>10 kOhm / < 100 nF	< 5 mA
	0 ... 10 V	12 ... 33 VDC	>10 kOhm / < 100 nF	< 5 mA
	ration. 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				500 VDC

Protection class

Protection class III

Dynamic response

Start-up time	< 200 ms
Response time	< 150 ms
Load cycle	< 100 Hz

Electrical connection

Connector DIN EN 175301-803-A	IP 65
Connector DIN EN 175301-803-C (Industrial standard 9.4 mm)	IP 65
Connector M12x1	IP 67
Swift connector without or with cable 1.5 / 2 / 3 / 5 m (PVC spez.)	IP 67

Pressure connection

Inside thread	G ¼	with Profile seal ring in FPM
	¼ -18 NPT	
	R ¼	nach EN 10226
	G ½	sealed at front
Outside thread	G ½	sealed at back DIN 3852-E with Profile seal ring in FPM
	G ¼	sealed at front
	G ¼	sealed at back DIN 3852-E with Profile seal ring in FPM
	G ½	sealed at front
	G ½	sealed at back DIN 3852-E with Profile seal ring in FPM, with hole Ø11 mm
	G ½	sealed at back DIN 3852-E with Profile seal ring in FPM, with hole Ø11 mm

Installation arrangement

Unrestricted (Note the position error!)

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
Shock acc. IEC 68-2-27	50 g, 6 ms half sine wave, all 6 directions, free fall from 1 m on concrete (6x)
Vibration nach IEC 68-2-6	20 g, 15 ... 2000 Hz, 15 ... 25 Hz with amplitude ± 15 mm, 1 Octave/min. all 3 directions, 50 constant load
UL	applied acc. cULus 61010-1
Protection against explosion (Ex) (4 ... 20 mA)	acc. ATEX - Ex II ½ G Ex ia IIC T4 Ga/Gb acc. IECEx - Ex II ½ D Ex ia IIIc T120°C Da/Db

Weight

~ 120 g

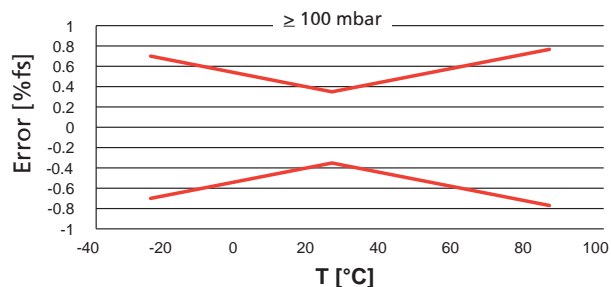
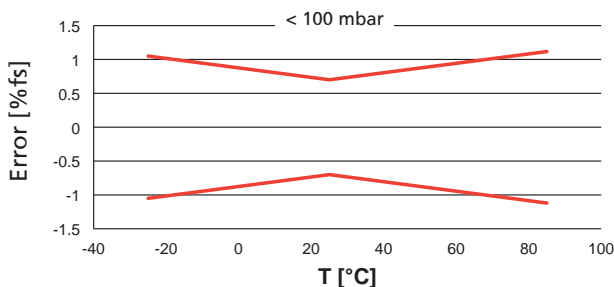
Packaging (Please state on order)

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

Accuracy

Parameter	Unit	
Characteristic line ¹⁾ (at 25 °C)	% fs	± 0.35 ²⁾
Resolution	% fs	< 0.1
Long term stability acc. IEC EN 60770-1 max.	% fs	± 0.25
Thermal characteristic ³⁾	% fs/10K	± 0.07
Location error horizontal mounting	mbar	+ 0.1
Location error vertical mounting, pressure connection upward	mbar	+ 0.2

Test conditions: 45% rH, power supply 24 VDC
Balance position: Vertical, pressure connection down



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

²⁾ fs < 100 mbar ± 0.7% fs

³⁾ the zero point and range at -25 ... +85 °C

Order code selection table in bar			1	2	3	4	5	6	7	8	9	10	11		
			525.	X	X	X	X	X	X	X	X	X	X	X	
Pressure range ¹⁾	0 ... 0.05 bar		9	2	1										
	0 ... 0.10 bar		9	2	2										
	0 ... 0.16 bar		9	2	3										
	0 ... 0.20 bar		9	2	4										
	0 ... 0.25 bar		9	2	5										
	0 ... 0.30 bar		9	2	6										
	0 ... 0.40 bar		9	2	7										
	0 ... 0.60 bar		9	2	8										
Sealing material	FPM	Fluoro elastomer					0	0							
	EPDM	Ethylene propylene					1	0							
	NBR	Butadiene Acrylonitrile					2	0							
Output / power supply	0 ... 5 V	7 ... 33 VDC							1						
	0 ... 10 V	12 ... 33 VDC							2						
	4 ... 20 mA	10 ... 30 VDC							3						
		10 ... 30 VDC (Ex)							4						
	ratiom. 10 ... 90%	5VDC ±10%							7						
Electrical connection	Connector	DIN EN 175301-803-A ²⁾								1					
		DIN EN 175301-803-C (Industrial standard 9.4 mm) ²⁾								2					
		M12x1 ²⁾	2L: IN=1 / OUT=3	3L: IN=1 / OUT=4 / GND=3							3				
	swift connector	M12x1 ²⁾	3L: IN=1 / OUT=3 / GND=4							1,2	M				
		without cable (PG9)									0				
		with cable 1.5 m									L				
		with cable 2.0 m									N				
		with cable 3.0 m									Q				
		with cable 5.0 m									R				
		Pressure connection ¹⁾	Inside thread	G ¼ with O-Ring seal FPM									1	1	1
¼ -18 NPT											3	1	1		
R ¼ acc. to EN 10226											7	1	1		
Outside thread	G ⅜ sealed at front										M	1	1		
	G ⅜ sealed at back DIN 3852-E with Profile seal ring in FPM										H	1	1		
	G ¼ sealed at front										J	1	1		
	G ¼ sealed at back DIN 3852-E with Profile seal ring in FPM										4	1	1		
	G ½ sealed at front										9	1	1		
	G ½ sealed at back DIN 3852-E with Profile seal ring in FPM										8	1	1		
	G ½ sealed at back DIN 3852-E with Profile seal ring in FPM with hole Ø 11mm										S	1	1		
Pressure range variation (optional)	Indicate W and state range on order (e. g. W0... + 0.5bar/OUT0.5...4.5V)													W	

Accessories		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
Calibration certificate		104551

Order code selection in psi			1	2	3	4	5	6	7	8	9	10	11		
			525.	X	X	X	X	X	X	X	X	X	X	X	
Pressure range ¹⁾	0 ... 1 psi		9	B	1										
	0 ... 2 psi		9	B	2										
	0 ... 3 psi		9	B	4										
	0 ... 5 psi		9	B	6										
	0 ... 10 psi		9	B	8										
	Sealing material	FPM	Fluoro elastomer					0	0						
EPDM		Ethylene propylene					1	0							
NBR		Butadiene Acrylonitrile					2	0							
Output / power supply	0 ... 5 V	7 ... 33 VDC							1						
	0 ... 10 V	12 ... 33 VDC							2						
	4 ... 20 mA	10 ... 30 VDC							3						
		10 ... 30 VDC (Ex)							4						
	ratiom. 10 ... 90%	5VDC ±10%							7						
Electrical connection	Connector	DIN EN 175301-803-A ²⁾									1				
		DIN EN 175301-803-C (Industrial standard 9.4 mm) ²⁾									2				
		M12x1 ²⁾	2L: IN=1 / OUT=3	3L: IN=1 / OUT=4 / GND=3								3			
	Swift connector	M12x1 ²⁾	3L: IN=1 / OUT=3 / GND=4								1,2	M			
		without cable										0			
		with cable 1.5 m										L			
		with cable 2.0 m										N			
		with cable 3.0 m										Q			
		with cable 5.0 m										R			
		Pressure connection ¹⁾	Inside thread	G ¼ with O-Ring seal FPM										1	1
¼ -18 NPT												3	1	1	
R ¼ acc. to EN 10226												7	1	1	
Outside thread	G ⅜ sealed at front											M	1	1	
	G ⅜ sealed at back DIN 3852-E with Profile seal ring in FPM											H	1	1	
	G ¼ sealed at front											J	1	1	
	G ¼ sealed at back DIN 3852-E with Profile seal ring in FPM											4	1	1	
	G ½ sealed at front											9	1	1	
	G ½ sealed at back DIN 3852-E with Profile seal ring in FPM											8	1	1	
	G ½ sealed at back DIN 3852-E with Profile seal ring in FPM with hole Ø 11mm											S	1	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⁾ Delivery without female connector

Order code selection in MPa			1	2	3	4	5	6	7	8	9	10	11		
			525.	X	X	X	X	X	X	X	X	X	X	X	
Pressure range ¹⁾	0 ... 0.005 MPa		9	G	1										
	0 ... 0.010 MPa		9	G	2										
	0 ... 0.016 MPa		9	G	3										
	0 ... 0.020 MPa		9	G	4										
	0 ... 0.025 MPa		9	G	5										
	0 ... 0.030 MPa		9	G	6										
	0 ... 0.040 MPa		9	G	7										
	0 ... 0.060 MPa		9	G	8										
Sealing material	FPM	Fluoro elastomer				0	0								
	EPDM	Ethylene propylene				1	0								
	NBR	Butadiene Acrylonitrile				2	0								
Output / power supply	0 ... 5 V	7 ... 33 VDC						1							
	0 ... 10 V	12 ... 33 VDC						2							
	4 ... 20 mA	10 ... 30 VDC						3							
		10 ... 30 VDC (Ex)						4							
	ratiom. 10 ... 90%	5VDC ±10%						7							
Electrical connection	Connector	DIN EN 175301-803-A ²⁾								1					
		DIN EN 175301-803-C (Industrial standard 9.4 mm) ²⁾								2					
		M12x1 ²⁾	2L: IN=1 / OUT=3 3L: IN=1 / OUT=4 / GND=3								3				
		M12x1 ²⁾	3L: IN=1 / OUT=3 / GND=4								1,2	M			
	Swift connector	without cable (PG9)									0				
		with cable 1.5 m									L				
		with cable 2.0 m									N				
		with cable 3.0 m									Q				
		with cable 5.0 m									R				
Pressure connection ¹⁾	Inside thread	G ¼ with O-Ring seal FPM									1	1	1		
		¼ -18 NPT									3	1	1		
		R ¼ acc. to EN 10226										7	1	1	
		G ½ sealed at front										M	1	1	
		G ½ sealed at back DIN 3852-E with Profile seal ring in FPM										H	1	1	
	Outside thread	G ¼ sealed at front										J	1	1	
		G ¼ sealed at back DIN 3852-E with Profile seal ring in FPM										4	1	1	
		G ½ sealed at front										9	1	1	
		G ½ sealed at back DIN 3852-E with Profile seal ring in FPM										8	1	1	
		G ½ sealed at back DIN 3852-E with Profile seal ring in FPM with hole Ø 11mm										S	1	1	
Pressure range variation (optional)	Indicate W and state range on order (e.p.: W0... + 0.5bar/OUT0.5...4.5V)													W	

Dimensions in mm / Electrical connections

<p>Inside thread G1/4</p>	<p>Outside thread G1/8 sealed at back DIN 3852-E</p>	<p>Outside thread G1/4 sealed at back DIN 3852-E</p>	<p>2 wire</p> <p>1 (IN) 2 (OUT) ±</p>	<p>3 wire</p> <p>1 (IN) 2 (OUT) 3 (GND)</p>
<p>Outside thread G1/4-18 NPT</p>	<p>Outside thread G1/4 sealed at back DIN 3852-E</p>	<p>Connector DIN EN 175301-803-C</p>	<p>2 wire</p> <p>1 (IN) 2 (OUT) ±</p>	<p>3 wire</p> <p>1 (IN) 2 (OUT) 3 (GND)</p>
<p>Outside thread R1/4</p>	<p>Outside thread G1/2 sealed at back DIN 3852-E</p>	<p>Connector M12x1</p>	<p>2 wire</p> <p>1 (IN) 3 (OUT) 4 (±)</p>	<p>3 wire</p> <p>1 (IN) 4 (OUT) 3 (GND)</p>
<p>Outside thread G1/4 sealed at front</p>	<p>Outside thread G1/8 sealed at front</p>	<p>Swift connector with or without cable</p>	<p>2 wire</p> <p>1 (IN) 3 (OUT) 4 (±)</p>	<p>3 wire</p> <p>1 (IN) 3 (OUT) 4 (GND)</p>
<p>Outside thread G1/2 sealed at front</p>	<p>Outside thread G1/2 sealed at back DIN 3852-E with hole Ø 11mm</p>	<p>Wiring diagrams for Swift connector:</p> <ul style="list-style-type: none"> 2-wire: brown to IN+, white to IN-, green to OUT. 3-wire: brown to IN+, white to IN-, green to OUT, GND to terminal 4. 	<p>2 wire</p> <p>1 (IN) 2 (OUT) 3 (±)</p>	<p>3 wire</p> <p>1 (IN) 2 (OUT) 3 (GND)</p>

¹⁾ Other pressure ranges on request ²⁾ Delivery without female connector

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