

# OEM Relative pressure transmitter type 510

Pressure range  
0 ... 2.5 – 600 bar



OEM Type 510 pressure transmitters are suitable for use with all types of refrigerants, including ammonia.

The newly designed pressure measuring cell incorporates a fully welded construction within the transducer housing.

- Compact, rugged construction for highest operational reliability
- Welded with no elastomer seals
- Negligible temperature influence on accuracy
- Excellent EMC-capacity
- Saving cable mounting time with swift connector



## Technical overview

### Pressure range

Relative	0... 2.5 – 600 bar
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### Operating conditions

Medium	Liquids, gases and refrigerants (incl. ammonia)	
Temperature	Medium	-40 ... +150 °C
	Ambient	-40 ... +85 °C
	Storage	-40 ... +85 °C
Overload	< 7 bar	5 x fs
	≥ 7 ... 400 bar	3 x fs
	> 400 bar	2.5 x fs
Rupture pressure	< 7 bar	10 x fs
	≥ 7 ... 400 bar	6 x fs
	> 400 bar	max. 2500 bar

### Materials

Case	Sensor	Stainless steel 1.4305 / AISI 303
Materials in contact with the medium	Pressure connections	Stainless steel

### Electrical overview

	Output	Power supply	Load	Current consumption
2 wire	4 ... 20 mA	8.0 ... 33 VDC	$< \frac{\text{supply voltage} - 8\text{ V}}{0.02\text{ A}}$ [Ohm]	< 20 mA
	0 ... 5 V	8.0 ... 33 VDC	>10 kOhm / < 100 nF	< 4 mA
	1 ... 6 V	8.0 ... 33 VDC	>10 kOhm / < 100 nF	< 4 mA
3 wire	0 ... 10 V	12.3 ... 33 VDC	>10 kOhm / < 100 nF	< 4 mA
	0 ... 10 V	24 VAC ±15%	>10 kOhm / < 100 nF	< 4 mA
	ratiom. 10 ... 90%	5 VDC ±5%	>10 kOhm / < 100 nF	< 4 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

### Dynamic response

Response time	< 2 ms, typ. 1 ms
Load cycle	< 50 Hz

### Protection standard

With DIN connector EN 175301-803-C	IP 65
All other versions	IP 67

### Electrical connection

Cable quick connection	
Cable 1.5 m	
Connector M12x1	Plastic or metal thread
Connector DIN 175301-803-C (mini DIN)	

### Pressure connection

Inside thread	$\frac{7}{16}$ -20 UNF Schrader
	G $\frac{1}{4}$ <sup>1)</sup>
Outside thread	$\frac{7}{16}$ -20 UNF
	$\frac{1}{4}$ -18 NPT
	R $\frac{1}{4}$ acc. DIN 2999
	G $\frac{1}{4}$ sealed at back DIN 3852 form E <sup>2)</sup>
	G $\frac{1}{2}$ sealed at back and manometer <sup>2)</sup>
	G $\frac{1}{2}$ selead at front

### Installation arrangement

Unrestricted	
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### Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
UL	acc. Standard 873
Shock acc. IEC 60068-2-27	100 g, 11 ms half sine wave, all 6 directions. Free fall from 2 m on concrete (6x)
Constant shock acc. IEC 60068-2-29	40 g for 6 ms, 1000 x all 3 directions
Vibration acc. IEC 60068-2-6	20 g, 2 ... 2000 Hz with amplitude ± 15 mm, 1 Octave/min. all 3 directions, 50 constant load

### Weight

Version with inside thread	~ 80 g
Version with outside thread	~ 92 g

### Packaging (Please state on order)

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

<sup>1)</sup> O-Ring in FPM spec. -30 ... +150 °C

<sup>2)</sup> Profile seal ring in FPM spec. -30 ... +150 °C

## Accuracy

Parameter		Unit	
Tolerance zero point	max.	% fs	± 0.5
Tolerance full scale	max.	% fs	± 0.5
Resolution		% fs	0.1
Total of linearity, hysteresis and repeatability	max.	% fs	± 0.5
Long term stability acc. to DIN EN 60770		% fs	± 1.0
TC zero point <sup>1)</sup>	max.	% fs/10K	± 0.3
TC sensitivity <sup>1)</sup>	max.	% fs/10K	± 0.15

Test conditions: 25 °C, 45% rF, Power supply 24 VDC  
TC0 / TCE -40 ... +125 °C

## Order code selection table in bar

		510.9	X	X	X	X	X	X	X	X	X	X	
Pressure range	0 ... + 2.5 bar	1	4										
	0 ... + 4 bar	1	5										
	0 ... + 6 bar	1	7										
	0 ... + 7 bar	2	9										
	0 ... + 10 bar	3	0										
	0 ... + 16 bar	3	1										
	0 ... + 25 bar	3	2										
	0 ... + 40 bar	3	3										
	0 ... + 60 bar	4	0										
	0 ... + 100 bar	4	1										
	0 ... + 160 bar	4	2										
	0 ... + 250 bar	4	3										
	0 ... + 400 bar	5	4										
	0 ... + 600 bar	5	5										
▲ Fullscale signal at these pressures													
Sealing material	None (welded cell)							S					
Adjustment	Factory							0					
Output / power supply	0 ... 5 V	8.0 ... 33 VDC							1				
	1 ... 6 V	8.0 ... 33 VDC							6				
	0 ... 10 V	12.3 ... 33 VDC							2				
	0 ... 10 V	24 VAC ±15% / 16 ... 34 VDC							7	1,0			
	4 ... 20 mA	8.0 ... 33 VDC							3				
	ratiom. 10 ... 90%	5VDC ±5%							4				
Electrical connection	Cable 1.5 m										0		
	Swift connector										1		
	Connector M12x1 plastic thread <sup>2)</sup>										5		
	Connector M12x1 metal thread <sup>2)</sup>										7		
	Connector DIN EN 175301-803-C (mini DIN) 2w: IN=3 / OUT=1 3w: IN=3 / OUT=2 / GND=1											8	
	Connector DIN EN 175301-803-C (mini DIN) 2w: IN=1 / OUT=2 3w: IN=1 / OUT=3 / GND=2											9	
Pressure connection <sup>3)</sup>	Inside thread	7/16-20 UNF Schrader										0	
	Inside thread <sup>4)</sup>	G 1/4										1	
	Outside thread	7/16-20 UNF										2	
	Outside thread	1/4 -18 NPT										3	
	Outside thread	R 1/4 acc. DIN 2999										4	
	Outside thread <sup>5)</sup>	G 1/4 sealed at back DIN 3852 form E										5	
	Outside thread <sup>5)</sup>	G 1/2 sealed at back and manometer (combi)										8	
	Outside thread	G 1/2 sealed at front										9	
Version	Stainless steel 1.4305 / AISI 303												
Pressure range variation	Indicate W and state range on order (e.g. W0... + 8bar/OUT1...6V)												
												0	
												W	

## Accessories

	Order number
Female swift connector	107359
Female connector DIN 175301-803-C (mini DIN)	104244
Female connector M12x1	106975
Calibration certificate	104551

<sup>1)</sup> TC = Temperature coefficient  
<sup>4)</sup> O-Ring in FPM spec. -30 ... +150 °C

<sup>2)</sup> Delivery without female connector  
<sup>5)</sup> Profile seal ring in FPM spec. -30 ... +150 °C

<sup>3)</sup> Other pressure connections on request

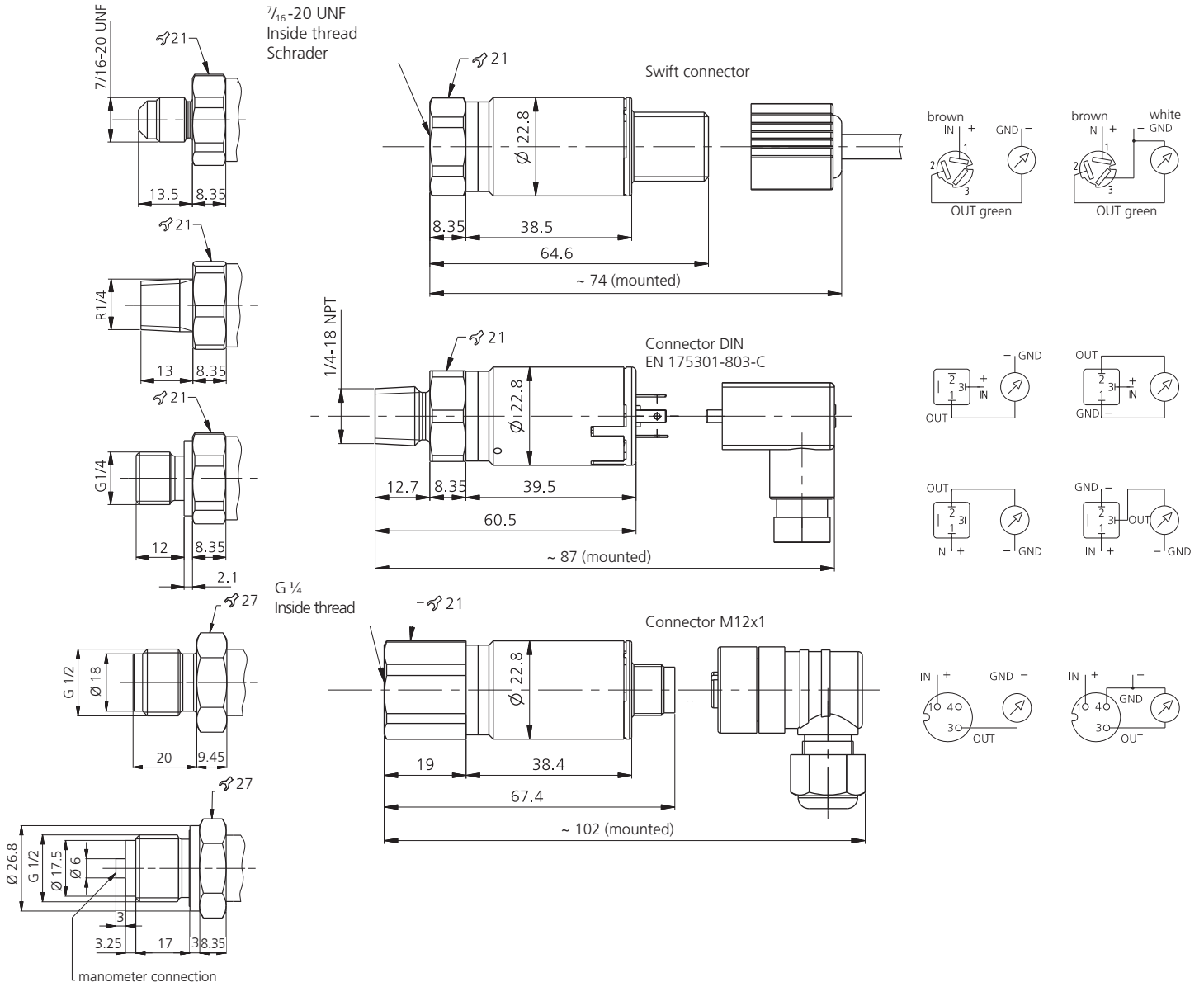
Order code selection table in psi			510.9	X	X	X	X	X	X	X	X	X	X	
Pressure range	0 ... + 30 psi		B	4										
	0 ... + 60 psi		B	5										
	0 ... + 100 psi		B	6										
	0 ... + 200 psi		C	1										
	0 ... + 300 psi		C	2										
	0 ... + 500 psi		C	3										
	0 ... + 750 psi		D	0										
	0 ... + 1000 psi		D	1										
	0 ... + 2000 psi		D	2										
	0 ... + 3000 psi		D	3										
	0 ... + 5000 psi		E	4										
	0 ... + 7500 psi		E	5										
	▲ Fullscale signal at these pressures													
Sealing material	None (welded cell)							S						
Adjustment	Factory								0					
Output / power supply	0 ... 5 V	8.0 ... 33 VDC								1				
	1 ... 6 V	8.0 ... 33 VDC								6				
	0 ... 10 V	12.3 ... 33 VDC								2				
	0 ... 10 V	24 VAC ±15% / 16 ... 34 VDC								7	1,0			
	4 ... 20 mA	8.0 ... 33 VDC								3				
	ratiom. 10 ... 90%	5VDC ±5%								4				
Electrical connection	Cable 1.5 m											0		
	Swift connector											1		
	Connector M12x1 plastic thread <sup>1)</sup>											5		
	Connector M12x1 metall thread <sup>1)</sup>											7		
	Connector DIN EN 175301-803-C (mini DIN) 2w: IN=3 / OUT=1 3w: IN=3 / OUT=2 / GND=1												8	
	Connector DIN EN 175301-803-C (mini DIN) 2w: IN=1 / OUT=2 3w: IN=1 / OUT=3 / GND=2												9	
Pressure connection <sup>2)</sup>	Inside thread	7/16-20 UNF Schrader											0	
	Inside thread <sup>3)</sup>	G 1/4											1	
	Outside thread	7/16-20 UNF											2	
	Outside thread	1/4 -18 NPT											3	
	Outside thread	R 1/4 acc. DIN 2999											4	
	Outside thread <sup>4)</sup>	G 1/4 sealed at back DIN 3852 form E											5	
	Outside thread <sup>4)</sup>	G 1/2 sealed at back and manometer (combi)											8	
	Outside thread	G 1/2 sealed at front											9	
Version	Stainless steel 1.4305 / AISI 303												0	
Pressure range variation	Indicate W and state range on order (e.g.: W0... + 400psi/OUT1...6V)												W	

Order code selection table in MPa			510.9	X	X	X	X	X	X	X	X	X	X
Pressure range	0 ... + 0.25 MPa		G	4									
	0 ... + 0.4 MPa		G	5									
	0 ... + 0.6 MPa		G	6									
	0 ... + 0.7 MPa		G	7									
	0 ... + 1 MPa		H	0									
	0 ... + 1.6 MPa		H	1									
	0 ... + 2.5 MPa		H	2									
	0 ... + 4 MPa		H	3									
	0 ... + 6 MPa		K	0									
	0 ... + 10 MPa		K	1									
	0 ... + 16 MPa		K	2									
	0 ... + 25 MPa		K	3									
	0 ... + 40 MPa		L	4									
	0 ... + 60 MPa		L	5									
▲ Fullscale signal at these pressures													
Sealing material	None (welded cell)							S					
Adjustment	Factory								0				
Output / power supply	0 ... 5 V	8.0 ... 33 VDC								1			
	1 ... 6 V	8.0 ... 33 VDC								6			
	0 ... 10 V	12.3 ... 33 VDC								2			
	0 ... 10 V	24 VAC ±15% / 16 ... 34 VDC								7	1,0		
	4 ... 20 mA	8.0 ... 33 VDC								3			
	ratiom. 10 ... 90%	5VDC ±5%								4			
Electrical connection	Cable 1.5 m											0	
	Swift connector											1	
	Connector M12x1 plastic thread <sup>1)</sup>											5	
	Connector M12x1 metal thread <sup>1)</sup>											7	
	Connector DIN EN 175301-803-C (mini DIN) 2w: IN=3 / OUT=1 3w: IN=3 / OUT=2 / GND=1												8
	Connector DIN EN 175301-803-C (mini DIN) 2w: IN=1 / OUT=2 3w: IN=1 / OUT=3 / GND=2												9
Pressure connection <sup>2)</sup>	Inside thread	7/16-20 UNF Schrader											0
	Inside thread <sup>3)</sup>	G 1/4											1
	Outside thread	7/16-20 UNF											2
	Outside thread	1/4 -18 NPT											3
	Outside thread	R 1/4 nach DIN 2999											4
	Outside thread <sup>4)</sup>	G 1/4 sealed at back DIN 3852 form E											5
	Outside thread <sup>4)</sup>	G 1/2 sealed at back and manometer (combi)											8
	Outside thread	G 1/2 sealed at front											9
Version	Stainless steel 1.4305 / AISI 303												0
Pressure range variation	Indicate W and state range on order (e.g.: W0... + 8MPa/OUT1...6V)												W

<sup>1)</sup> Delivery without female connector  
<sup>4)</sup> Profile seal ring in FPM spec. -30 ... +150 °C

<sup>2)</sup> Other pressure connections on request

<sup>3)</sup> O-Ring in FPM spec. -30 ... +150 °C





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