

# OEM relative and absolute pressure transmitter type 511

Pressure range  
-1 ... 0 – 600 bar



Type 511 pressure transmitters meet the highest specifications for longevity, accuracy, temperature stability and EMC characteristics, making them suitable for an extremely wide range of demanding industrial applications.

- Compact, rugged construction for highest operational reliability
- No media egress when exceeding rupture pressure
- Negligible temperature influence on accuracy
- Excellent EMC capacity
- Saving time by quick cable mounting by the customer with swift connector

## Technical overview

### Pressure range

Relative	-1 ... 0 – 600 bar
Absolute	0 ... 25 bar

### Operating conditions

Medium		Liquids and gases
Temperature		FPM
		EPDM
		NBR
		FPM spec.
	Ambient <sup>1)</sup>	ration. output, AMP JPT all other versions
Tolerable overload / Rupture pressure <sup>2)</sup>	< 6	3.0 x fs
	≥ 6	2.5 x fs (max. 900 bar)

### Materials

Case		Stainless steel 1.4305 / AISI 303
Materials in contact with the medium	Pressure connection	Stainless steel 1.4305 / AISI 303
	Sensor	Ceramic Al <sub>2</sub> O <sub>3</sub> (96%)
	Media stop system	PPS
	Sealing material	FPM, EPDM, NBR, FPM spec.

### Media stop system

Huba-patented media stop system to prevent media egress when exceeding rupture pressure range (> 40 bar nominal value).

### Electrical overview

	Output	Power supply	Load	Current consumption <sup>4)</sup>
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	11.4 ... 33 VDC	>10 kOhm / < 100 nF	< 4 mA
	0 ... 10 V	24 VAC ±15%	>10 kOhm / < 100 nF	< 4 mA
	ration. 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			standard	500 VDC
			optional	1000 VDC

### Dynamic response

Response time	< 2 ms, typ. 1 ms
Load cycle	< 100 Hz

### Protection standard

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

### Electrical connection

Cable 1.5 m
Swift connector
Connector AMP (Junior power time)
Connector M12x1 plastic thread
Connector M12x1 metal thread
Connector DIN EN 175301-803-C (mini-DIN)

### Pressure connection

Inside thread	G ¼ with O-Ring seal
	G ¼, sealed at back, DIN 3852, form E
	G ½, sealed at front
Outside thread	G ½, sealed at back and manometer (combi)
	¼ -18 NPT
	R ¼, DIN 2999
	M12x1.5, sealed at back, DIN 3852, form E
	M14x1.5, sealed at back, DIN 3852, form E

### Installation arrangement

Unrestricted
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### Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
UL	acc. Standard 61010-1
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, 1000x 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	~ 85 g
Version with outside thread	~ 95 g

### Packaging (Please state on order)

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

<sup>1)</sup> Version until +150 °C on request

<sup>2)</sup> higher overload and rupture pressure on request

<sup>3)</sup> at nominal pressure

## Accuracy

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

Test conditions: 25 °C, 45% RH, power supply 24 VDC  
TC z.p. / TC s. -40 ... +125 °C

## Order code selection table in bar

				511.	X	X	X	X	X	X	X	X	X	X	
Pressure mode	Relative			9											
	Absolute			8											
Pressure range <sup>2)</sup>	-1 ... 0 bar			9	0	0									
	0 ... 1 bar				1	1									
	0 ... 1.6 bar				1	2									
	0 ... 2.5 bar				1	4									
	0 ... 4 bar				1	5									
	0 ... 6 bar				1	7									
	0 ... 10 bar				3	0									
	0 ... 16 bar				3	1									
	0 ... 25 bar				3	2									
	0 ... 40 bar				9	3	3							2	
	0 ... 60 bar				9	4	0							2	
	0 ... 100 bar				9	4	1							2,5	
	0 ... 160 bar				9	4	2							2,5	
	0 ... 250 bar				9	4	3							2,5	
	0 ... 400 bar (FPM spec. seal only)				9	5	4	6						2,5	
0 ... 600 bar (FPM spec. seal only)				9	5	5	6						2,5		
▲ Full scale signal at these pressures															
Sealing material <sup>2)</sup>	FPM	Fluoro elastomer					0								
	EPDM	Ethylene propylene					1								
	NBR	Butadiene Acrylonitrile					2								
	FPM spec.	Fluoro elastomer spec.					6								
Adjustment	Factory							0							
Output / power supply	0 ... 5 V	8.0 ... 33 VDC	IN=1 / OUT=3 / GND=4										1		
	1 ... 6 V	8.0 ... 33 VDC	IN=1 / OUT=3 / GND=4										6		
	0 ... 10 V	11.4 ... 33 VDC	IN=1 / OUT=3 / GND=4										2		
	0 ... 5 V	8.0 ... 33 VDC	IN=1 / OUT=4 / GND=3										F	5,7	
	1 ... 6 V	8.0 ... 33 VDC	IN=1 / OUT=4 / GND=3										G	5,7	
	0 ... 10 V	11.4 ... 33 VDC	IN=1 / OUT=4 / GND=3										H	5,7	
	0 ... 10 V	24 VAC ±15%											7	1,0	
	4 ... 20 mA	8.0 ... 33 VDC											3		
	ration. 10 ... 90%	5 VDC ±5%											4		
	Electrical connection	Cable 1.5 m													0
Swift connector														1	
Connector AMP JPT <sup>4)</sup>														2	
Connector M12x1 plastic thread <sup>4)</sup>														5	
Connector M12x1 metal thread <sup>4)</sup>														7	
Connector DIN EN 175301-803-C (mini DIN) 2 w: IN=3 / OUT=1 3 w: IN=3 / OUT=2 / GND=1															8
Connector DIN EN 175301-803-C (mini DIN) 2 w: IN=1 / OUT=2 3 w: IN=1 / OUT=3 / GND=2															9
Pressure connection <sup>5)</sup>	Inside thread	G ¼ mit O-Ring seal (no pressure tip orifice possible)												1	1,2
	Outside thread	G ¼ sealed at back, DIN 3852, form E												4	
	Outside thread	G ½ sealed at front												9	
	Outside thread	G ½ sealed at back and manometer (combi)												8	
	Outside thread	¼ -18 NPT												3	
	Outside thread	R ¼, DIN 2999												7	
	Outside thread	M12x1.5, sealed at back, DIN 3852, form E												5	
Outside thread	M14x1.5, sealed at back, DIN 3852, form E												6		
Version	Stainless steel without media stopper (≤ 60 bar)														1
	Stainless steel with media stopper (standard ≥ 40 bar)														2
	Stainless steel with pressure tip orifice (≥ 100 bar)														5
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 8bar/OUT1...6V)														W

## Accessories

	Order number
Female connector for connector M12x1	106975
Female connector AMP (Junior power timer) 2-wire	110442
Female connector AMP (Junior power timer) 3-wire	108767
Female connector swift connector (included in delivery)	107359
Female connector mini DIN	104244
Calibration certificate	104551

<sup>1)</sup> TC = Temperature coefficient

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

<sup>3)</sup> Other sealing material on request

<sup>4)</sup> Delivery without female connector

<sup>5)</sup> Other pressure connection on request

Order code selection table in psi			511. X X X X X X X X X X X															
Pressure mode	Relative		9															
	Absolute		8															
Pressure range <sup>1)</sup>	-30 ... 0" hg		9	A	0													
	0 ... 15 psi			B	1													
	0 ... 30 psi			B	4													
	0 ... 60 psi			B	5													
	0 ... 100 psi			B	7													
	0 ... 200 psi			C	1													
	0 ... 300 psi			C	2													
	0 ... 500 psi		9	C	3												2	
	0 ... 750 psi		9	D	0													2
	0 ... 1000 psi		9	D	1													2,5
	0 ... 2000 psi		9	D	2													2,5
	0 ... 3000 psi		9	D	3													2,5
	0 ... 5000 psi (FPM spec. seal only)		9	E	4	6												2,5
	0 ... 7500 psi (FPM spec. seal only)		9	E	5	6												2,5
▲ Full scale signal at these pressures																		
Sealing material <sup>2)</sup>	FPM	Fluoro elastomer															0	
	EPDM	Ethylene propylene															1	
	NBR	Butadiene Acrylonitrile															2	
	FPM spec.	Fluoro elastomer spec.															6	
Adjustment	Factory															0		
Output / power supply	0 ... 5 V	8.0 ... 33 VDC	IN=1 / OUT=3 / GND=4														1	
	1 ... 6 V	8.0 ... 33 VDC	IN=1 / OUT=3 / GND=4														6	
	0 ... 10 V	11.4 ... 33 VDC	IN=1 / OUT=3 / GND=4														2	
	0 ... 5 V	8.0 ... 33 VDC	IN=1 / OUT=4 / GND=3														F 5,7	
	1 ... 6 V	8.0 ... 33 VDC	IN=1 / OUT=4 / GND=3														G 5,7	
	0 ... 10 V	11.4 ... 33 VDC	IN=1 / OUT=4 / GND=3														H 5,7	
	0 ... 10 V	24 VAC ±15%															7 1,0	
	4 ... 20 mA	8.0 ... 33 VDC															3	
	ratiom. 10 ... 90%	5 VDC ±5%															4	
	Electrical connection	Cable 1.5 m																0
Swift connector																	1	
Connector AMP JPT <sup>4)</sup>																	2	
Connector M12x1 plastic thread <sup>4)</sup>																	5	
Connector M12x1 metal thread <sup>4)</sup>																	7	
Connector DIN EN 175301-803-C (mini DIN) 2 w: IN=3 / OUT=1 3 w: IN=3 / OUT=2 / GND=1																		8
Connector DIN EN 175301-803-C (mini DIN) 2 w: IN=1 / OUT=2 3 w: IN=1 / OUT=3 / GND=2																		9
Pressure connection <sup>5)</sup>	Inside thread	G ¼ mit O-Ring seal (no pressure tip orifice possible)															1 1,2	
	Outside thread	G ¼ sealed at back, DIN 3852, form E															4	
	Outside thread	G ½ sealed at front															9	
	Outside thread	G ½ sealed at back and manometer (combi)															8	
	Outside thread	¼ -18 NPT															3	
	Outside thread	R ¼, DIN 2999															7	
	Outside thread	M12x1.5, sealed at back, DIN 3852, form E															5	
Version	Outside thread	M14x1.5, sealed at back, DIN 3852, form E															6	
	Stainless steel without media stopper (< 700 psi)																1	
	Stainless steel with media stopper (standard > 500 psi)																2	
Pressure range variation (optional)	Stainless steel with pressure tip orifice (> 1000 psi)																5	
	Indicate W and state range on order (e.g.: W0... + 120psi/OUT1...6V)																W	

<sup>1)</sup> Other pressure range on request

<sup>2)</sup> Other sealing material on request

<sup>3)</sup> Delivery without female connector

<sup>4)</sup> Other pressure connection on request

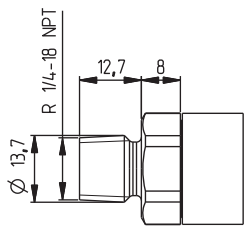
Order code selection table in MPa				511. X X X X X X X X X X X																		
Pressure mode	Relative			9																		
	Absolute			8																		
Pressure range <sup>1)</sup>	-0.1 ... 0 MPa			9	F	0																
	0 ... 0.1 MPa				G	1																
	0 ... 0.16 MPa				G	2																
	0 ... 0.25 MPa				G	4																
	0 ... 0.4 MPa				G	5																
	0 ... 0.6 MPa				G	7																
	0 ... 1 MPa				H	0																
	0 ... 1.6 MPa				H	1																
	0 ... 2.5 MPa				H	2																
	0 ... 4 MPa			9	H	3															2	
	0 ... 6 MPa			9	K	0																2
	0 ... 10 MPa			9	K	1																2,5
	0 ... 16 MPa			9	K	2																2,5
	0 ... 25 MPa			9	K	3																2,5
	0 ... 40 MPa (FPM spec. seal only)			9	L	4	6															2,5
0 ... 60 MPa (FPM spec. seal only)			9	L	5	6															2,5	
	▲ Full scale signal at these pressures																					
Sealing material <sup>2)</sup>	FPM	Fluoro elastomer					0															
	EPDM	Ethylene propylene					1															
	NBR	Butadiene Acrylonitrile					2															
	FPM spec.	Fluoro elastomer spec.					6															
Adjustment	Factory							0														
Output / power supply	0 ... 5 V	8.0 ... 33 VDC	IN=1 / OUT=3 / GND=4																		1	
	1 ... 6 V	8.0 ... 33 VDC	IN=1 / OUT=3 / GND=4																		6	
	0 ... 10 V	11.4 ... 33 VDC	IN=1 / OUT=3 / GND=4																		2	
	0 ... 5 V	8.0 ... 33 VDC	IN=1 / OUT=4 / GND=3																		F 5,7	
	1 ... 6 V	8.0 ... 33 VDC	IN=1 / OUT=4 / GND=3																		G 5,7	
	0 ... 10 V	11.4 ... 33 VDC	IN=1 / OUT=4 / GND=3																		H 5,7	
	0 ... 10 V	24 VAC ±15%																			7 1,0	
	4 ... 20 mA	8.0 ... 33 VDC																			3	
	ration. 10 ... 90%	5 VDC ±5%																			4	
	Electrical connection	Cable 1.5 m																				0
Swift connector																				1		
Connector AMP JPT <sup>4)</sup>																					2	
Connector M12x1 plastic thread <sup>4)</sup>																					5	
Connector M12x1 metal thread <sup>4)</sup>																					7	
Connector DIN EN 175301-803-C (mini DIN) 2 w: IN=3 / OUT=1 3 w: IN=3 / OUT=2 / GND=1																					8	
Connector DIN EN 175301-803-C (mini DIN) 2 w: IN=1 / OUT=2 3 w: IN=1 / OUT=3 / GND=2																					9	
Pressure connection <sup>5)</sup>	Inside thread	G 1/4 mit O-Ring seal (no pressure tip orifice possible)																			1 1,2	
	Outside thread	G 1/4 sealed at back, DIN 3852, form E																				4
	Outside thread	G 1/2 sealed at front																				9
	Outside thread	G 1/2 sealed at back and manometer (combi)																				8
	Outside thread	1/4 -18 NPT																				3
	Outside thread	R 1/4, DIN 2999																				7
	Outside thread	M12x1.5, sealed at back, DIN 3852, form E																				5
	Outside thread	M14x1.5, sealed at back, DIN 3852, form E																				6
Version	Stainless steel without media stopper (< 6 MPa)																					1
	Stainless steel with media stopper (standard >= 4 MPa)																					2
	Stainless steel with pressure tip orifice (>= 10 MPa)																					5
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 0.8MPa/OUT1...6V)																					W

<sup>1)</sup> Other pressure range on request

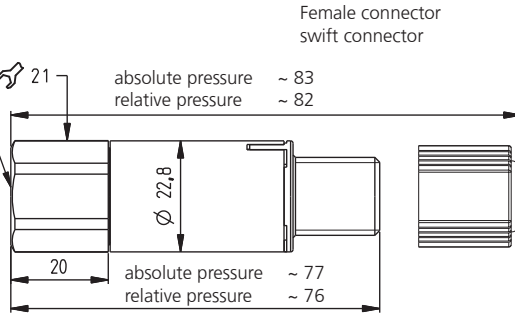
<sup>2)</sup> Other sealing material on request

<sup>3)</sup> Delivery without female connector

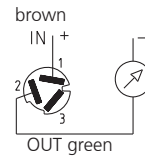
<sup>4)</sup> Other pressure connection on request



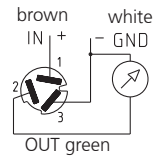
G 1/4  
Inside thread



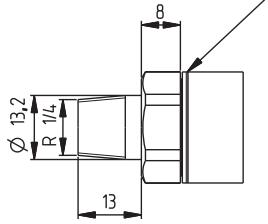
2 wire  
(4 ... 20 mA)



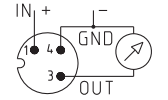
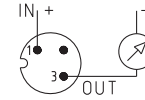
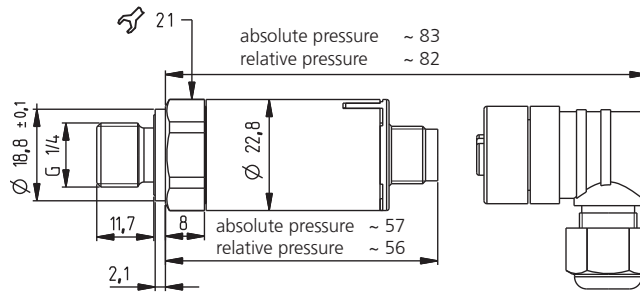
3 wire



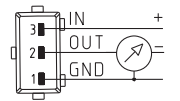
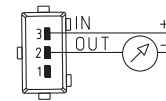
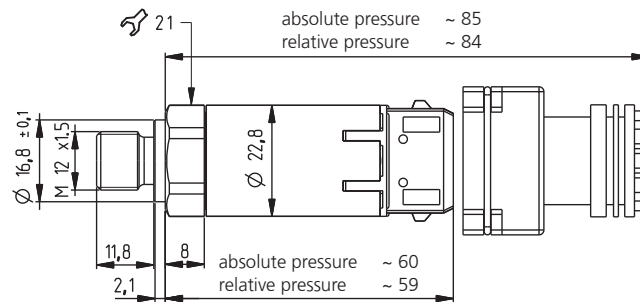
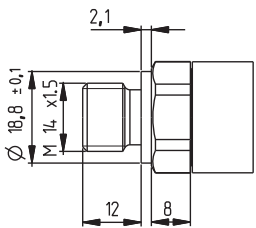
All absolute versions are especially marked with an indentation.



Female connector M12x1



Female connector AMP JPT



Female connector  
DIN EN 175301-803-C

