



Pressure transmitter

# Huba Control

## OEM relative and absolute pressure transmitter

### Type 511

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.



**Pressure range**  
**-1 ... 0 – 600 bar**

- + 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	Ambient <sup>1)</sup>	FPM	-15 ... +125 °C
		EPDM	-40 ... +150 °C (UL max. 125 °C)
		NBR	-25 ... +125 °C
		ration. output, AMP JPT	-25 ... +85 °C
		all other versions	max. +125 °C
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

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	< $\frac{\text{supply voltage} - 5V}{1000}$ (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 (industrial standard 9.4 mm)

### Pressure connection

Inside thread	G ¼ with O-Ring seal
	G ¼ sealed at back, DIN EN ISO 1179-2
	G ½ sealed at front
	G ½ sealed at back and manometer (combi)
	¼ -18 NPT
Outside thread	R ¼ EN 10226
	M12x1.5 sealed at back, DIN EN ISO 1179-2
	M14x1.5 sealed at back, DIN EN ISO 1179-2

### Installation arrangement

Unrestricted

### 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>	typ.	% 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

			1	2	3	4	5	6	7	8	9	10	
			511.	X	X	X	X	X	X	X	X	X	
<b>Pressure mode</b>	Relative		9										
	Absolute		8										
<b>Pressure range <sup>2)</sup></b>	-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 seal only -40 ... +150 °C)		9	5	4	6					2,5		
0 ... 600 bar (FPM seal only -40 ... +150 °C)		9	5	5	6					2,5			
▲ Full scale signal at these pressures													
<b>Sealing material <sup>3)</sup></b>	FPM	Fluoro elastomer					0						
	EPDM	Ethylene propylene					6						
	NBR	Butadiene Acrylonitrile					1						
							2						
<b>Adjustment</b>	Factory					0							
<b>Output / power supply</b>	0 ... 5 V	8.0 ... 33 VDC IN=1 / OUT=3 / GND=4						1					
		8.0 ... 33 VDC IN=1 / OUT=4 / GND=3						F	5,7				
	1 ... 6 V	8.0 ... 33 VDC IN=1 / OUT=3 / GND=4						6					
		8.0 ... 33 VDC IN=1 / OUT=4 / GND=3						G	5,7				
	0 ... 10 V	11.4 ... 33 VDC IN=1 / OUT=3 / GND=4						2					
		11.4 ... 33 VDC IN=1 / OUT=4 / GND=3						H	5,7				
		24 VAC ±15%						7	1,0				
4 ... 20 mA	8.0 ... 33 VDC						3						
ration. 10 ... 90%	5 VDC ±5%						4						
<b>Electrical connection</b>	Cable 1.5 m									0			
	Swift connector									1			
	Connector	AMP JPT <sup>4)</sup>									2		
		M12x1 plastic thread <sup>4)</sup>									5		
		M12x1 metal thread <sup>4)</sup>									7		
		DIN EN 175301-803-C	2wr:IN=3/OUT=1 3wr:IN=3/OUT=2/GND=1								8		
		DIN EN 175301-803-C	2wr:IN=1/OUT=2 3wr:IN=1/OUT=3/GND=2								9		
	<b>Pressure connection <sup>5)</sup></b>	Inside thread	G ¼ with O-Ring seal (no pressure tip orifice possible)									1	1,2
			G ¼ sealed at back, DIN EN ISO 1179-2									4	
G ½ sealed at front											9		
Outside thread		G ½ sealed at back and manometer (combi)									8		
		¼ -18 NPT									3		
		R ¼, EN 10226									7		
		M12x1.5 sealed at back, DIN EN ISO 1179-2									5		
	M14x1.5 sealed at back, DIN EN ISO 1179-2									6			
<b>Version</b>	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	
<b>Pressure range variation (optional)</b>	Indicate W and state range on order (e.g.: W0... +8bar/OUT1...6V)											W	

## Accessories (supplied loose)

	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)	117312
Female connector	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

				1	2	3	4	5	6	7	8	9	10	
<b>Order code selection table in psi</b>				511.	X	X	X	X	X	X	X	X	X	
<b>Pressure mode</b>	Relative			9										
	Absolute			8										
<b>Pressure range <sup>1)</sup></b>	-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 seal only -40 ... +150 °C)			9	E	4	6						2,5	
	0 ... 7500 psi (FPM seal only -40 ... +150 °C) ▲ Full scale signal at these pressures			9	E	5	6						2,5	
<b>Sealing material <sup>2)</sup></b>	FPM	Fluoro elastomer	-15 ... +125 °C						0					
			-40 ... +150 °C (UL max. 125 °C)						6					
	EPDM	Ethylene propylene							1					
	NBR	Butadiene Acrylonitrile							2					
<b>Adjustment</b>	Factory								0					
<b>Output / power supply</b>	0 ... 5 V	8.0 ... 33 VDC IN=1 / OUT=3 / GND=4								1				
		8.0 ... 33 VDC IN=1 / OUT=4 / GND=3								F	5,7			
	1 ... 6 V	8.0 ... 33 VDC IN=1 / OUT=3 / GND=4									6			
		8.0 ... 33 VDC IN=1 / OUT=4 / GND=3									G	5,7		
	0 ... 10 V	11.4 ... 33 VDC IN=1 / OUT=3 / GND=4										2		
		11.4 ... 33 VDC IN=1 / OUT=4 / GND=3										H	5,7	
		24 VAC ±15%										7	1,0	
	4 ... 20 mA	8.0 ... 33 VDC									3			
ration. 10 ... 90%	5 VDC ±5%									4				
<b>Electrical connection</b>	Cable 1.5 m											0		
	Swift connector											1		
	Connector	AMP JPT <sup>3)</sup>											2	
		M12x1 plastic thread <sup>3)</sup>											5	
		M12x1 metal thread <sup>3)</sup>											7	
		DIN EN 175301-803-C		2w:IN=3/OUT=1 3w:IN=3/OUT=2/GND=1									8	
DIN EN 175301-803-C		2w:IN=1/OUT=2 3w:IN=1/OUT=3/GND=2									9			
<b>Pressure connection <sup>4)</sup></b>	Inside thread	G ¼ mit O-Ring seal (no pressure tip orifice possible)										1	1,2	
		G ¼ sealed at back, DIN EN ISO 1179-2											4	
		G ½ sealed at front											9	
	Outside thread	G ½ sealed at back and manometer (combi)											8	
		¼ -18 NPT											3	
		R ¼, EN 10226											7	
		M12x1.5 sealed at back, DIN EN ISO 1179-2											5	
	M14x1.5 sealed at back, DIN EN ISO 1179-2										6			
<b>Version</b>	Stainless steel without media stopper (≤ 700 psi)												1	
	Stainless steel with media stopper (standard ≥ 500 psi)												2	
	Stainless steel with pressure tip orifice (≥ 1000 psi)												5	
<b>Pressure range variation (optional)</b>	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

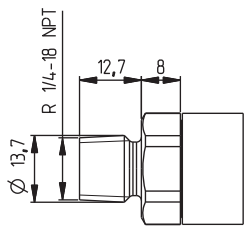
			1	2	3	4	5	6	7	8	9	10	
<b>Order code selection table in MPa</b>			511.	X	X	X	X	X	X	X	X	X	
<b>Pressure mode</b>	Relative		9										
	Absolute		8										
<b>Pressure range <sup>1)</sup></b>	-0.1 ... 0 MPa		9	F	0								
	0 ... 0.1 MPa			G	1								
	0 ... 0.16 MPa			G	2								
	0 ... 0.25 MPa			G	4								
	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 seal only -40 ... +150 °C)			9	L	4	6					2,5	
	0 ... 60 MPa (FPM seal only -40 ... +150 °C)			9	L	5	6					2,5	
▲ Full scale signal at these pressures													
<b>Sealing material <sup>2)</sup></b>	FPM	Fluoro elastomer				0							
						6							
	EPDM	Ethylene propylene				1							
	NBR	Butadiene Acrylonitrile				2							
<b>Adjustment</b>	Factory						0						
<b>Output / power supply</b>	0 ... 5 V	8.0 ... 33 VDC IN=1 / OUT=3 / GND=4							1				
		8.0 ... 33 VDC IN=1 / OUT=4 / GND=3							F	5,7			
	1 ... 6 V	8.0 ... 33 VDC IN=1 / OUT=3 / GND=4								6			
		8.0 ... 33 VDC IN=1 / OUT=4 / GND=3								G	5,7		
	0 ... 10 V	11.4 ... 33 VDC IN=1 / OUT=3 / GND=4									2		
		11.4 ... 33 VDC IN=1 / OUT=4 / GND=3									H	5,7	
		24 VAC ±15%									7	1,0	
	4 ... 20 mA	8.0 ... 33 VDC									3		
ration. 10 ... 90%	5 VDC ±5%									4			
<b>Electrical connection</b>	Cable 1.5 m										0		
	Swift connector										1		
	Connector	AMP JPT <sup>3)</sup>									2		
		M12x1 plastic thread <sup>3)</sup>									5		
		M12x1 metal thread <sup>3)</sup>									7		
		DIN EN 175301-803-C	2w:IN=3/OUT=1 3w:IN=3/OUT=2/GND=1								8		
DIN EN 175301-803-C		2w:IN=1/OUT=2 3w:IN=1/OUT=3/GND=2								9			
<b>Pressure connection <sup>4)</sup></b>	Inside thread	G ¼ with O-Ring seal (no pressure tip orifice possible)									1	1,2	
		G ¼ sealed at back, DIN EN ISO 1179-2									4		
	Outside thread	G ½ sealed at front									9		
		G ½ sealed at back and manometer (combi)									8		
		¼ -18 NPT									3		
		R ¼, EN 10226									7		
		M12x1.5 sealed at back, DIN EN ISO 1179-2									5		
		M14x1.5 sealed at back, DIN EN ISO 1179-2									6		
<b>Version</b>	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	
<b>Pressure range variation (optional)</b>	Indicate W and state range on order (e.g.: W0... + 0.8MPa/OUT1...6V)											W	

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

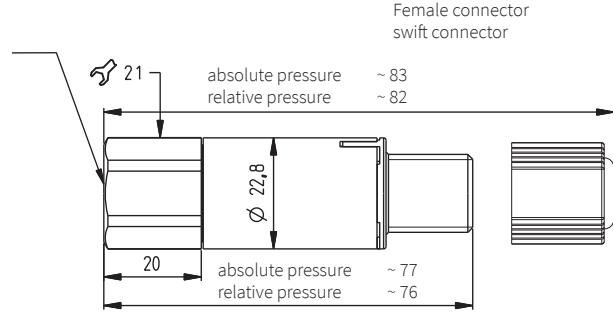
<sup>2)</sup> Other sealing material on request

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

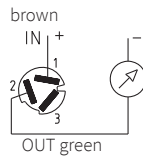
<sup>4)</sup> Other pressure connection on request



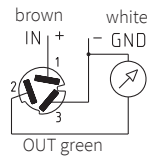
G 1/4  
Inside thread



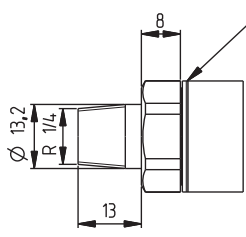
2 wire  
(4 ... 20 mA)



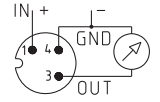
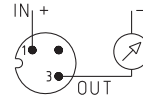
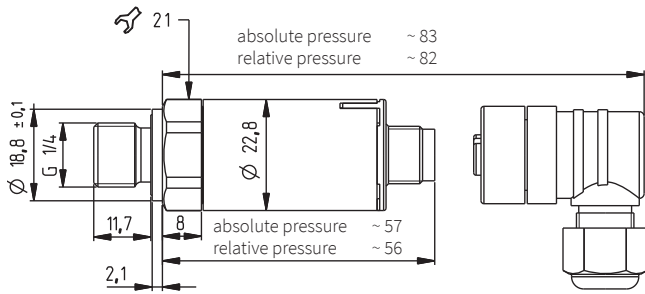
3 wire



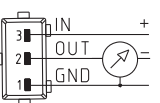
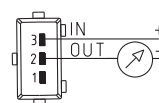
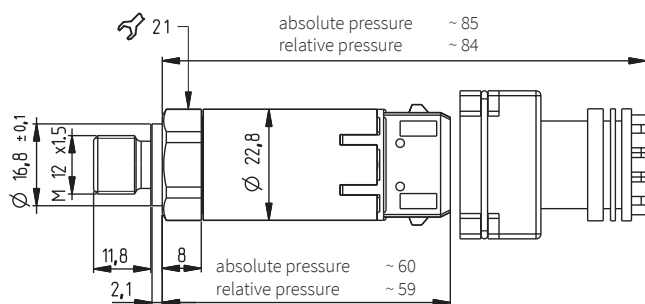
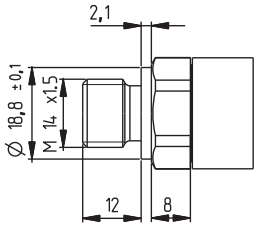
All absolute versions are especially marked with an indentation.



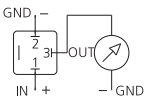
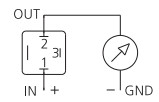
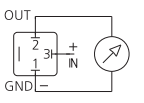
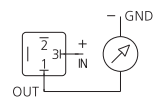
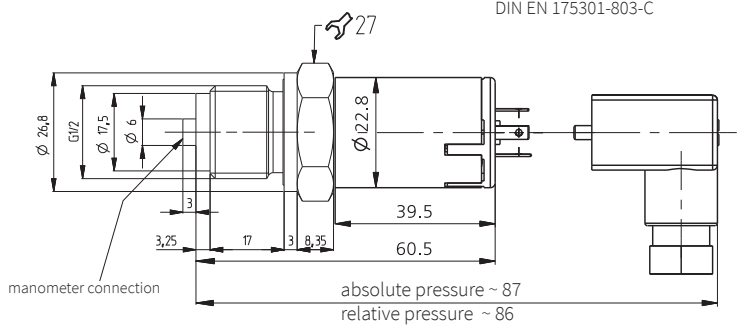
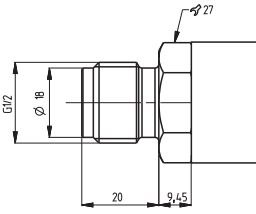
Female connector M12x1



Female connector AMP JPT



Female connector  
DIN EN 175301-803-C



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