HUBA

Type 520, Relative/Gage Pressure Transmitter

F.S Pressure Ranges from 30 to 14,500 PSI, Voltage/Current/Ratiometric Outputs

DESCRIPTION

The compact type 520 pressure transmitter is based upon the Huba Control developed thick film technology where the pressure measuring cell is fully welded.

This transmitter meets high burst protection demands and is suitable for the use in all types of refrigerants including ammonia.

-Compact, rugged construction
-Welded without sealing parts, no elastomer seals
-Large selection of connections available

SPECIFICATIONS

F.S. Pressure Ranges (Relative/Gage)	-15 to +30, 30, 60, 100, 200, 300, 500, 750, 1000, 2000, 3000, 5000, 7500, 14500 PSI -1 to 9, 2.5, 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000 bar	
Medium	Compatible liquids & gases	
Temperature:		
Medium	-40...+135oC	
Ambient	-30...+85oC,	
Storage	-50...+100oC	
Max Over Pressure	0-6 bar, 5 x F.S.; 10-600 bar, 2.5 x F.S.	
Rupture Pressure	0-6 bar, 10 x F.S.; 10-600 bar, 6 x F.S.	
Wetted Materials	Pressure Connections	AISI 316L, inside Schraeder thread AISI 303 only
	Sensor	Stainless Steel
Cover Material	AISI 316L, inside Schraeder thread AISI 303 only	
Electrical Plug Material	Polyarylamide 50% glass filled, UL 94 V-O	
Signal Output Options		
2-wire, 4-20 mA output	Power Supply, 7-33 VDC; Current Consumption- <23 mA Load (Ohms)= Supply Voltage-7V÷0.02 A	
2-wire, 4-20 mA out-put(Ex)	Power Supply, 10-30 VDC; Current Consumption- <20 mA Load (Ohms)= Supply Voltage-10V÷0.02 A	
3-wire, 0-5V output	Power Supply, 7-33 VDC; Current Consumption- <7 mA Load - >10k Ohm/<100 nF	
3-wire, 0-6V output	Power Supply, 8-33 VDC; Current Consumption- <7 mA Load - >10k Ohm/<100 nF	
3-wire, 0-10V output	Power Supply, 12-33 VDC; Current Consumption- <7 mA Load - >10k Ohm/<100 nF	
3-wire, 0-10V output	Power Supply, 24 VAC ±15%; Current Consumption- <7 mA, Load - >10k Ohm/<100 nF	
3-wire, ratiometric 10...90% supply voltage	Power Supply, 5 VDC ±10% Current Consumption- <7 mA, Load - >10k Ohm/<100 nF	
3-wire, ratiometric 10...90% supply voltage (Ex)	Power Supply, 5 VDC ±10% Current Consumption- <7 mA, Load - >10k Ohm/<100 nF	

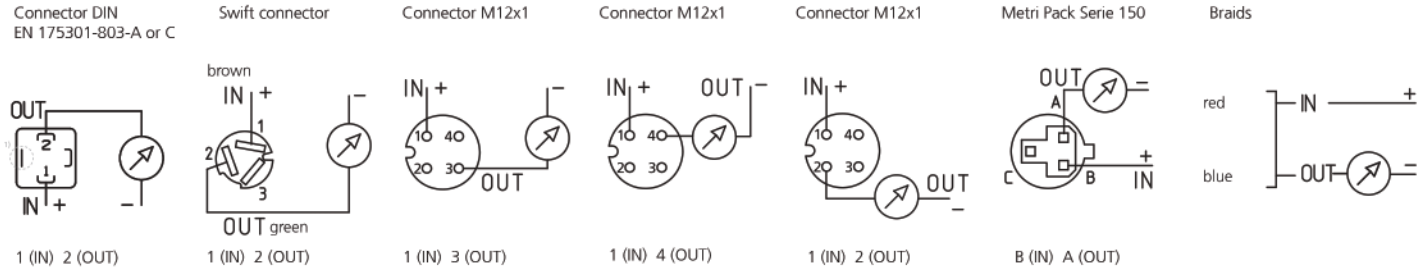
Specifications Continued	
Recerse Polarity Protection	Protected to Max, Supply Voltage
Dynamic Response	
Response Time	<2 ms, 1 ms Typ.
Load Cycle	<100Hz
Electrical Connection Options-	
DIN EN 175301-803-A DIN EN 175301-803-C (mini DIN) M 12X1 Swift connector with or without cable 1.5 / 2.0 / 3.0 / 5.0 m (PVC) Metri Pack Serie 150 Connector RAST 2.5 (3 wire, only) Braids	
Pressure Connection	
Inside Threads: 7/16 - 20 UNF Schrader, G 1/4 w/FPM O-Ring seal Outside Threads: ¼ -18 NPT, 7/16 - 20 UNF, 1/4- 18 NPT, Consult us for other	
Installation Orientation	Any
Weight	90 g
Testing:	
Electromagnetic Compatibility	CE conformity acc. EN 61326-2-3
Raised noise resistantcy	EN 50121-2-3
Constant shock acc. IEC 68-2-29	40 g for 6 ms, 1000x all 3 directions
Shock Per IEC 68-2-27	100 g, 11 ms half sine wave, all 6 directions, free fall from 1 m on concrete (6x)
Vibration IEC 68-2-6	20 g, 15 ... 2000 Hz, 15 ... 25 Hz with amplitude µ 15 mm, 1 Octave/ min. all 3 directions, 50 constant load

Specifications Continued		
Explosion Protection (Ex)	4 ... 20 mA	Ratiometric
Intrinsic safety	Ex II 1/2 G Ex ia IIC T4 Ga/Gb	Ex II 1/2 G Ex ia IIC T4 Ga/Gb
	Ex II 1/2 D Ex ia IIIC T125ºC Da/Db	Ex II 1/2 D Ex ia IIIC T125ºC Da/Db
EC type examination certificate	SEV 10 ATEX 0145	SEV 15 ATEX 01173
Connection to certified intrinsically safe resistive circuits with maximum values	Ui < 30 VDC; Ii < 100 mA; Pi < 750 mW	Ui < 15 VDC; Ii < 200 mA; Pi < 750 mW
Effective internal inductance and capacitance for versions with plugs complying with EN 175301-803-A or M12x1	Li = 0 nH; Ci = 0 nF	Li = 0 nH; Ci = 150 nF

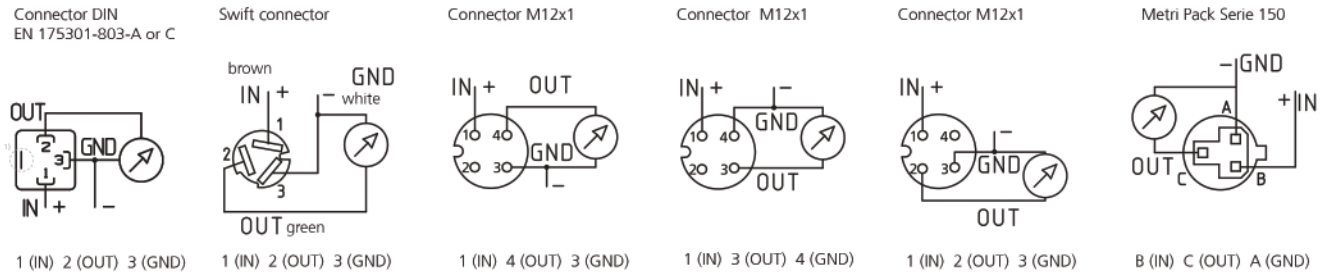
Accuracy	
Characteristic line [1]	±0.3% F.S.
Resolution	0.1% F.S.
Thermal characteristic [2] (max.)	±0.2% F.S./ 10ºC
Long term stability acc. IEC EN 60770-1	±0.25% F.S.
1 typ. ; max. 0.5% fs (incl. zero point, full scale, linearity, hysteresis and repeatability) 2 -15 ... 85 ºC	
Test conditions: 25 ºC, 45% RH, power supply 24 VDC	

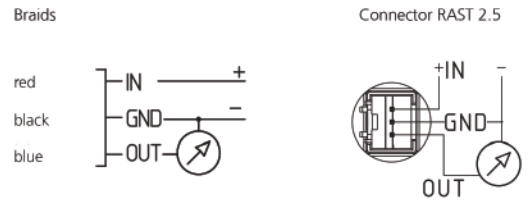
ELECTRICAL CONNECTIONS

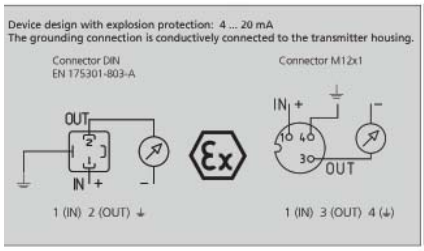
2 wire

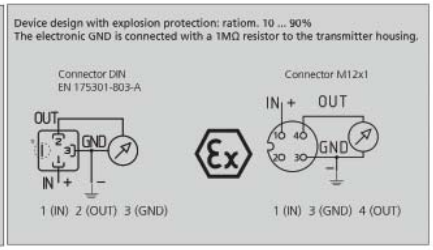


3 wire

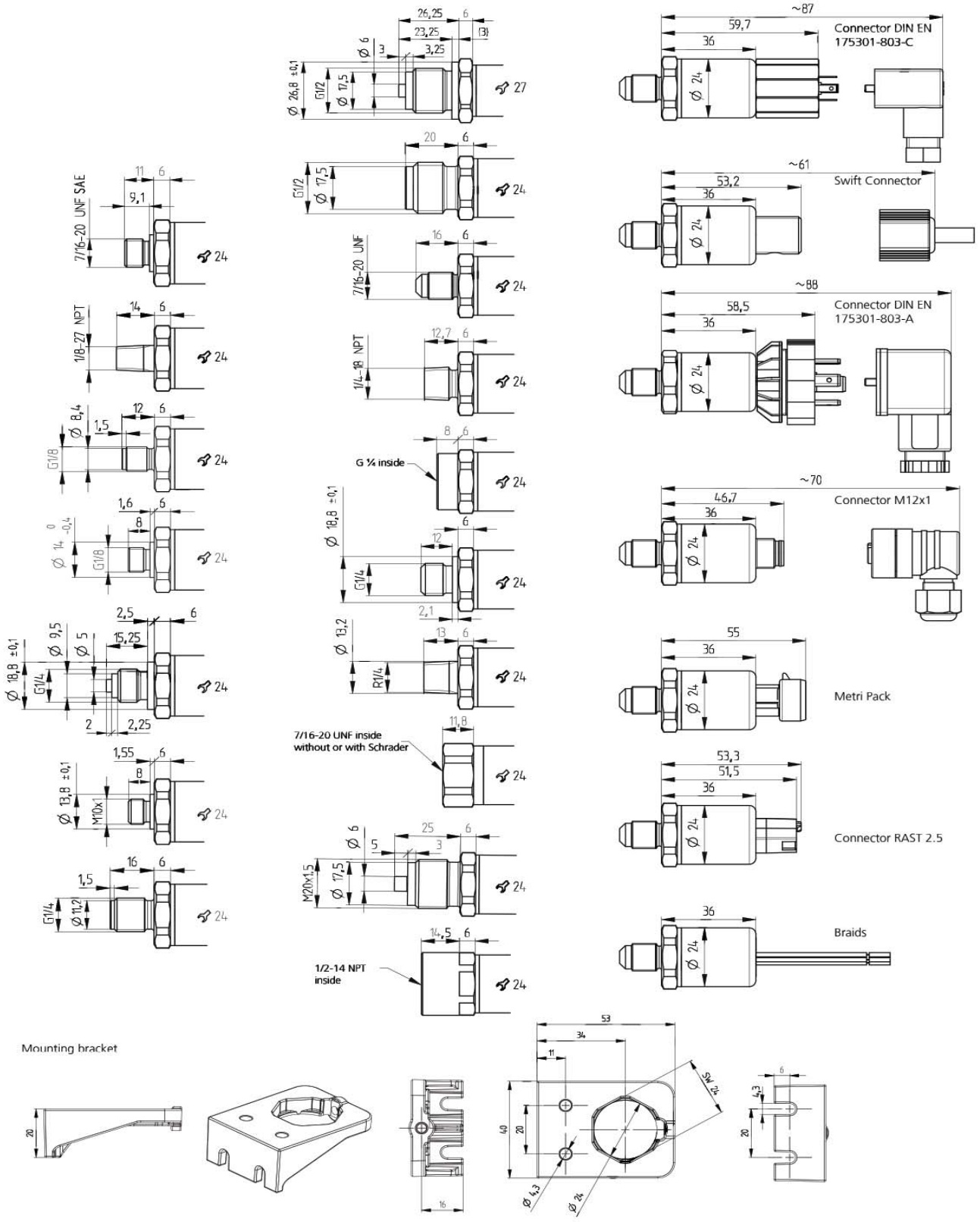








DIMENSIONS (MM)



Clark Solutions 10 Brent Drive Hudson, MA 01749 Tel. 978 / 568 3400 Fax 978 / 568 0060

Order code selection table in psi

			1	2	3	4	5	6	7	8	9	10	11
			520.	X	X	X	X	X	X	X	X	X	X	X
Pressure range [1]	-15 ... 130 psi		9	A	6								
	0 ... 30 psi		9	B	4								
	0 ... 60 psi		9	B	4								
	0 ... 100 psi		9	B	7								
	0 ... 200 psi		9	C	1								
	0 ... 300 psi		9	C	2								
	0 ... 500 psi		9	C	3								
	0 ... 750 psi		9	D	0								
	0 ... 1000 psi		9	D	1								
	0 ... 2000 psi		9	D	2								
	0 ... 3000 psi		9	D	3								
	0 ... 5000 psi		9	E	4								
	0 ... 7500 psi		9	E	5								
	0 ... 14500 psi		9	E	7								
Application	standard					S	0						
	for oxygen applications					S	1				0		
	with drinking water approval NSF 61					S	4				0	1	
Output / power supply	0 ... 5 V	7 ... 33 VDC						1					
	1 ... 6 V	8 ... 33 VDC						6					
	0 ... 10 V	12 ... 33 VDC						2					
		12 ... 33 VDC Enhanced EMC protection						C	1,2,3				
		12 ... 33 VDC / 24 VAC ±15% *(not possible with M12x1, metri Pack, RAST, braids)*						8					
	ratiom. 10 ... 90%	5 VDC ±10%						7					
		5 VDC ±10% Ex protection					0,4	9	1,3			1	
	4 ... 20 mA	7 ... 33 VDC						3					
		7 ... 33 VDC Enhanced EMC protection *(not possible with Braids)*						A					
		10 ... 30 VDC Ex protection					0,4	4	1,3			1	
Electrical connection	Connector [2]	DIN EN 175301-803-A							1				
		DIN EN 175301-803-C (industrial standard 9.4 mm)							2				
		M12x1 *2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3*							3				
		M12x1 *2w: IN=1 / OUT=4 3w: IN=1 / OUT=3 / GND=4*							M				
		M12x1 *2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3*							P				
		RAST 2.5					0,4	7	4				
		Metri Pack Serie 150 [3]					0,4		5				
	Braids	80 ±10 mm							6				
		290 ±10 mm							7				
		480 ±10 mm							8				
		730 ±10 mm							9				
	Swift connector	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	$^7/_{16}$-20 UNF sealing cone with schrader					0,4			0	0	N	
		$^7/_{16}$-20 UNF sealing cone								K		1	
		½ -14 NPT [4]								D		1	
		G ¼ with O-Ring seal FPM								1		1	
	Outside thread	$^7/_{16}$ -20 UNF sealing cone								2		1	
		¼ -18 NPT								3		1	
		G ¼ sealed at back DIN 3852-E with profile seal ring in FPM								4		1	
		G ¼ sealed at back and manometer with profile seal ring in FPM								5	0	1	
		R ¼ acc. to EN 10226								7		1	
		G ½ sealed at back and manometer with profile seal ring in FPM					0,1			8		1	
		$^7/_{16}$-20 UNF sealed at back SAE 4 with O-Ring seal FPM								G		1	
		⅛ - 27 NPT [4]								A		1	
		G ⅛ sealed at front [4]								M		1	
		G ⅛ sealed at back DIN 3852-E with Profile seal ring in FPM [5]					0,1			H		1	
		M10x1 sealed at back DIN 3852-E with profile seal ring in FPM[4]					0,1			F		1	
		M20x1.5 sealed at front and manometer (combi)								E		1	
		G ¼ sealed at front								J		1	
		G ½ sealed at front								9		1	
Pressure orifice	without (inclusive pressure tip orifice from 2000 psi on)										0		
	with										2		
Material pressure connection	Stainless steel 1.4305 / AISI 303											N	
	Stainless steel 1.4404 / AISI 316L											1	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 400psi/OUT0...5V)												W

Accessories

	Order number
Swift connector	117312
Female connector DIN EN 175301-803-A with seal	103510
Female 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
Mounting bracket with screw	118716
Calibration certificate (not possible with pressure range 0 ... 1000 bar)	104551

[1] Other pressure ranges or pressure connections on request
[2] Delivery without female connector
[3] For pressure ranges ≤ 1 MPa only possible if deareation through the cable is assured
[4] (≤ 870 psi)
[5] Rupture pressure 14500 psi

Order code selection table in bar			1	2	3	4	5	6	7	8	9	10	11
			520.	X	X	X	X	X	X	X	X	X	X	X
Pressure range [3]	-1 ... 9 bar		9	0	6								
	0 ... 2.5 bar		9	1	4								
	0 ... 4 bar		9	1	5								
	0 ... 6 bar		9	1	7								
	0 ... 10 bar		9	3	0								
	0 ... 16 bar		9	3	1								
	0 ... 25 bar		9	3	2								
	0 ... 40 bar		9	3	3								
	0 ... 60 bar		9	4	0								
	0 ... 100 bar		9	4	1								
	0 ... 160 bar		9	4	2								
	0 ... 250 bar		9	4	3								
	0 ... 400 bar		9	5	4								
	0 ... 600 bar		9	5	5								
	0 ... 1000 bar		9	5	7								
Application	standard					S	0						
	for oxygen applications					S	1				0		
	with drinking water approval NSF 61					S	4				0	1	
Output / power supply	0 ... 5 V	7 ... 33 VDC						1					
	1 ... 6 V	8 ... 33 VDC						6					
	0 ... 10 V	12 ... 33 VDC						2					
		12 ... 33 VDC Enhanced EMC protection						C	1,2,3				
		12 ... 33 VDC / 24 VAC ±15% *(not possible with M12x1, metri Pack, RAST, braids)*						8					
	ratiom. 10 ... 90%	5 VDC ±10%						7					
		5 VDC ±10% Ex protection					0,4	9	1,3			1	
	4 ... 20 mA	7 ... 33 VDC						3					
		7 ... 33 VDC Enhanced EMC protection *(not possible with Braids)*						A					
		10 ... 30 VDC Ex protection					0,4	4	1,3			1	
Electrical connection	Connector [4]	DIN EN 175301-803-A							1				
		DIN EN 175301-803-C (industrial standard 9.4 mm)							2				
		M12x1 *2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3*							3				
		M12x1 *2w: IN=1 / OUT=4 3w: IN=1 / OUT=3 / GND=4*							M				
		M12x1 *2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3*							P				
		RAST 2.5					0,4	7	4				
		Metri Pack Serie 150 [5]					0,4		5				
	Braids	80 ±10 mm							6				
		290 ±10 mm							7				
		480 ±10 mm							8				
		730 ±10 mm							9				
	Swift connector	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 [3]	Inside thread	7/16-20 UNF sealing cone with schrader					0,4			0	0	N	
		7/16-20 UNF sealing cone								K		1	
		½ -14 NPT [6]								D		1	
		G ¼ with O-Ring seal FPM								1		1	
	Outside thread	7/16 -20 UNF sealing cone								2		1	
		¼ -18 NPT								3		1	
		G ¼ sealed at back DIN 3852-E with profile seal ring in FPM								4		1	
		G ¼ sealed at back and manometer with profile seal ring in FPM								5	0	1	
		R ¼ acc. to EN 10226								7		1	
		G ½ sealed at back and manometer with profile seal ring in FPM					0,1			8		1	
		7/16-20 UNF sealed at back SAE 4 with O-Ring seal FPM								G		1	
		⅛ - 27 NPT [6]								A		1	
		G ⅛ sealed at front [6]								M		1	
		G ⅛ sealed at back DIN 3852-E with Profile seal ring in FPM [7]					0,1			H		1	
		M10x1 sealed at back DIN 3852-E with profile seal ring in FPM [6]					0,1			F		1	
		M20x1.5 sealed at front and manometer (combi)								E		1	
		G ¼ sealed at front								J		1	
		G ½ sealed at front								9		1	
Pressure orifice	without (inclusive pressure tip orifice from 100 bar on)										0		
	with										2		
Material pressure connection	Stainless steel 1.4305 / AISI 303											N	
	Stainless steel 1.4404 / AISI 316L											1	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 3bar/OUT0...5V)												W

[1] typ. ; max. 0.5% fs (incl. zero point, full scale, linearity, hysteresis and repeatability) [2] -15 ... 85 °C [3] Other pressure ranges or pressure connections on request [4] Delivery without female connector
[5] For pressure ranges ≤ 10 bar only possible if deareation through the cable is assured [6] (≤ 60 bar) [7] Rupture pressure 1000 bar