

FLUSH MEMBRANE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The Flush Membrane Transmitter FPT is based on Trafag's own thin-film-on-steel technology and the in-house developed high performance ASIC chip electronics. It therefore ensures a high level of accuracy over a wide temperature range and excellent long-term stability in combination with an extraordinary smooth diaphragm surface.



Applications

- Engine manufacturing
- Machine tools
- Hydraulics
- Process technology
- Water treatment
- Food Industry
- Chemical and pharmaceutical industry

Features

- Flush membrane with smooth and plain surface
- Completely welded sensor system
- Very compact design
- Accuracy NLH 0.1% FS typ.
- Excellent long-term stability

Technical Data

Measuring principle	Thin film on steel	Accuracy @ 25°C typ.	± 0.4 % FS
Measuring range	0 ... 1 to 0 ... 100 bar 0 ... 15 to 0 ... 1500 psi	Media temperature	-40°C ... +125°C
Output signal	4 ... 20 mA, 0 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, 0.5 ... 4.5 VDC ratiom.	Ambient temperature	-40°C ... +85°C

06/2014

Data sheet H72316c

Subject to change

Ordering information/type code

8235 . XX . XX . XX . XX . XX . XX

Measuring range ¹⁾	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]		Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]		
		0 ... 1.0	2	3	71	0 ... 15	30	40	G1
	0 ... 2.5	5	7.5	75	0 ... 30	70	100	G5	
	0 ... 4	8	12	76	0 ... 50	115	170	G6	
	0 ... 6	12	18	77	0 ... 100	150	260	G7	
	0 ... 10	20	30	78	0 ... 150	290	430	G8	
	0 ... 16	32	48	79	0 ... 250	450	690	G9	
	0 ... 25	50	75	80	0 ... 400	725	1080	H0	
	0 ... 40	80	120	81	0 ... 500	1100	1740	H1	
	0 ... 100	200	300	83	0 ... 1450	2900	4350	H3	
Sensor	Relative pressure							23	
Pressure connection	G1/2" male, flush membrane							91	
Electrical connection	Male electrical plug EN 175301-803-A (DIN 43650-A) Mat. PA							05	
	Male electrical plug M12x1, 5-pol., Mat. PA							35	
	Male electrical plug Industrial standard (contact distance 9.4 mm) Mat. PBT							01	
	Male electrical plug Packard Metri Pack							51	
	Cable IP67 (Cable length see "Accessories") Mat. PVC (cable gland PA6-3) ²⁾							22	
	Cable IP68 max. 3m, Medium +10°C...+35°C, max. 1 bar rel./abs.							68	
Output	Output	Load resistance		I (supply)	U (supply)				
	4 ... 20mA	(U _{supply} -9V) / 20mA			9 ... 30 VDC			19	
	0 ... 5 VDC	> 2.5 kΩ		< 10 mA	10 ... 30 VDC			14	
	1 ... 6 VDC	> 5.0 kΩ		< 10 mA	10 ... 30 VDC			16	
	0 ... 10 VDC	> 5.0 kΩ		< 10 mA	15 ... 30 VDC			17	
0.5 ... 4.5 VDC	> 5.0 kΩ		< 10 mA	5 VDC ± 0.25 VDC ratiometric			23		
Accessories	Sealing Ring DIN 3869, Mat. FPM (FKM) -15°C ... +125°C							61	
	Sealing Ring DIN 3869, Mat. NBR, -25°C ... +100°C							69	
	Female electrical connector EN 175301-803-A (DIN43650-A)							58	
	Female electrical plug M12x1, 5-pole							33	
	Female electrical connector industrial standard							34	
	Special electrical connection: Pin 1 + , Pin 2 - (Only for output 4...20mA and male electrical plug EN175301-803-A / DIN43650-A) ²⁾							92	
	Special electrical connection: Pin 1 + , Pin 2 -, Pin 3 out (Only for output 0...5VDC, 1...6VDC, 0...10VDC, 0.5...4.5VDC and male electrical plug EN175301-803-A / DIN43650-A) ²⁾							98	
	Special electrical connection: Pin 1 + , Pin 2 -, Pin 3 out (Only for output 0...5VDC, 1...6VDC, 0...10VDC, 0.5...4.5VDC and male electrical plug EN175301-803-A / DIN43650-A) ²⁾							97	
	Special electrical connection: Pin 1 + , Pin 2 -, Pin 3 GR (Only for output 4...20mA and male electrical plug M12x1, 5-pol.) ²⁾							94	
	Special electrical connection: Pin 1 + , Pin 2 - (Only for male electrical plug Packard Metri Pack 3-pol.) ²⁾							99	
	Membrane electropolished Ra=0.4µm							EP	
	Cable length 1.5 m							1M	
	Cable length 3.0 m							3M	
	Cable length 5.0 m							5M	

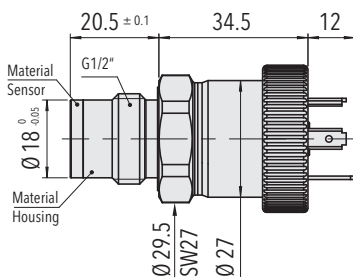
¹⁾ Extended overpressure as well as customized pressure ranges upon request

²⁾ Details see electrical connection

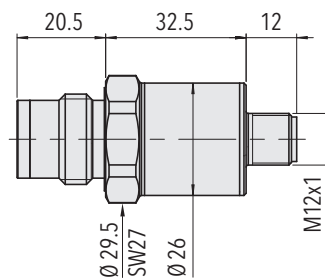
Standard products (extra short lead time)

Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Signal output	Accuracy @ 25°C typ. [%]
FPT1.0A	8235 71 2391 05 0000 0000 19 58 61	0...1.0	2	4...20 mA	±0.4
FPT2.5A	8235 75 2391 05 0000 0000 19 58 61	0...2.5	5	4...20 mA	±0.4
FPT4.0A	8235 76 2391 05 0000 0000 19 58 61	0...4.0	8	4...20 mA	±0.4
FPT6.0A	8235 77 2391 05 0000 0000 19 58 61	0...6.0	12	4...20 mA	±0.4
FPT10.0A	8235 78 2391 05 0000 0000 19 58 61	0...10.0	20	4...20 mA	±0.4
FPT16.0A	8235 79 2391 05 0000 0000 19 58 61	0...16.0	32	4...20 mA	±0.4
FPT25.0A	8235 80 2391 05 0000 0000 19 58 61	0...25.0	50	4...20 mA	±0.4
FPT40.0A	8235 81 2391 05 0000 0000 19 58 61	0...40.0	80	4...20 mA	±0.4
FPT100.0A	8235 83 2391 05 0000 0000 19 58 61	0...100.0	200	4...20 mA	±0.4

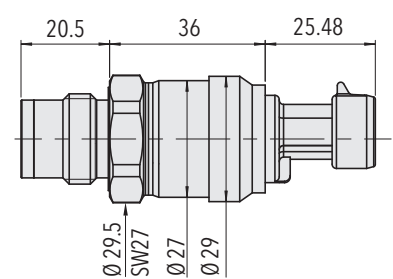
Dimensions



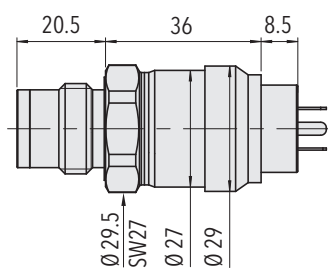
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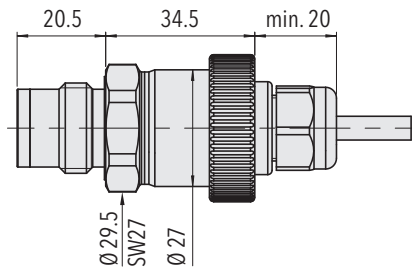
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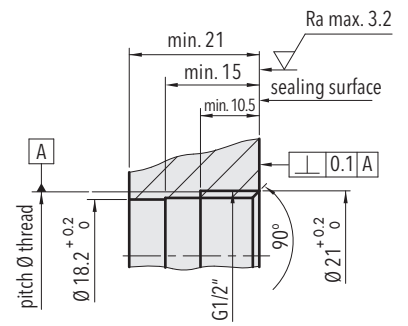
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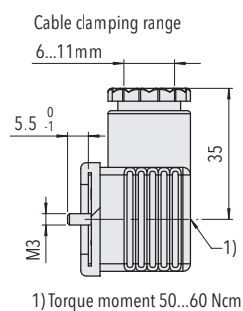
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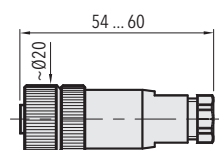
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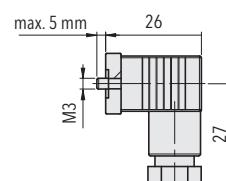
Mounting thread G1/2"
DIN EN ISO 1179-1



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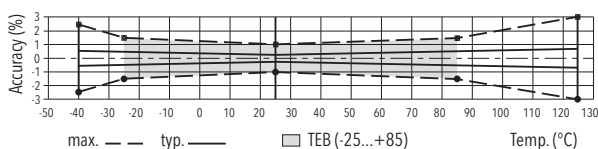


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Specifications		
Accuracy	TEB typ. @ -25 ... +85°C	± 0.5 % FS typ.
	Accuracy @ 25°C typ.	± 0.4 % FS
	NLH @ 25°C (BSL) typ.	± 0.1 % FS typ.
	TC zero point and span typ.	± 0.005 % FS/K typ.
	Long term stability 1 year typ.	± 0.2 % FS typ.
Electrical Data	Output / supply voltage	4...20 mA: 24 (9...30) VDC 0...5 VDC: 24 (10...30) VDC 1...6 VDC: 24 (10...30) VDC 0...10 VDC: 24 (15...30) VDC 0.5...4.5 VDC: 5 VDC ratiom.
	Rise time	typ. 1 ms/ 10...90 % pression nominale
	Switch-on-delay	max. 1.5 s
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +85°C
	Protection ¹⁾	Min. IP65
	Humidity	Max. 95 % relative
	Vibration	15 g (50...2000 Hz)
	Shock	50 g/3 ms
EMC Protection	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
Mechanical Data	Sensor	1.4542 (AISI630)
	Housing / Pressure connection	1.4301 (AISI304)
	Sealing	FPM (FKM) NBR
	Weight	~ 80 ... 110 g (without cable)
	Mounting torque	20 ... 25 Nm not lubricated 15 ... 20 Nm lubricated

¹⁾ Electrical connections 05/35/51: provided female connector is mounted according to instructions

Measuring accuracy



Electrical Connection

		Protection / electrical connection							
		IP65*)	IP67	IP67*)	IP67*)	IP67*)		IP65	
		Industrial standard EN175301-803A 05 	Cable **) 22 	M12x1 5- pole 35 	Packet Metri Pak 3- pole 51 	Industrial standard EN175301-803A 01 			
Output signal	<p>8235.XX.XXXX.XX.19</p>	Standard	92		Standard	94		99	
	<p>8235.XX.XXXX.XX.14/16/17/23</p>	Standard	98	97				99	
		2	1	white	4	1	1	1	2
		1	2	brown	1	3	2	3	1
		⊕	⊕	⊕	5	5			⊕
		2	3	1	2	1	1	1	1
		3	1	3	4	3	2	2	2
		1	2	2	3	2	3	3	3
		⊕	⊕	⊕	5				⊕

*) Electrical connections 05/35/51: provided female connector is mounted according to instructions

**) Ventilation via cable end; shield in the device is not connected

Additional information

Documents

Data sheet	www.trafag.com/H72316
Instructions	www.trafag.com/H73316
Flyer	www.trafag.com/H70648