

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 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC	Ambient temperature	-40°C ... +85°C (Cable PVC 22: -5°C ... +60°C)
NLH @ 25°C (BSL) typ.	± 0.1 % FS typ.		

11/2019

Data sheet H72316m

Subject to change

Ordering information/type code

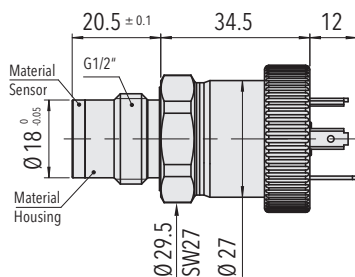
				8235 . XX				XX	XX	XX	XX	XX
Measuring range ¹⁾	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]		Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]					
	0 ... 1	6	12	71	0 ... 15	85	170	G1				
	0 ... 2.5	6	12	75	0 ... 30	85	170	G5				
	0 ... 4	8	12	76	0 ... 50	115	170	G6				
	0 ... 6	12	18	77	0 ... 100	170	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 connector EN 175301-803-A (DIN43650-A), Mat. PA							05				
	Male electrical connector M12x1, 5-pol., Mat. PA							35				
	Male electrical connector, industrial standard (contact distance 9.4 mm), Mat. PBT							01				
	Male electrical connector Packard Metri Pack							51				
	Cable IP67 (cable length see "Accessories") Mat. PVC (cable gland PA6-3), -5°C ... +60°C ²⁾							22				
	Cable IP68 max. 3m, medium +10°C...+35°C, max. 1 bar relative							68				
Output signal	Signal output	Load resistance	I (supply)	U (supply)								
	4 ... 20 mA	(U _{supply} -9 V) / 20 mA		9 ... 30 VDC						19		
	0 ... 5 VDC	> 2.5 kΩ	< 10 mA	10 ... 30 VDC						14		
	1 ... 5 VDC	> 5.0 kΩ	< 10 mA	10 ... 30 VDC						25		
	1 ... 6 VDC	> 5.0 kΩ	< 10 mA	10 ... 30 VDC						16		
	0 ... 10 VDC	> 5.0 kΩ	< 10 mA	15 ... 30 VDC						17		
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 plug EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0											46
	Female electrical plug EN 175301-803-A (DIN43650-A)/Silicone, -40°C ... +125°C, for cable diameter 4 ... 9 mm, flammability standard UL94-V0											56
	Female electrical plug EN 175301-803-A (DIN43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 ... 9.5 mm, flammability standard UL94-V2											58
	Female electrical plug M12x1, 5-pole											33
	Female electrical plug industrial standard											34
	Special electrical connection: Pin 1 +, Pin 2 - (only for output signal 4 ... 20 mA and male electrical connector EN175301-803-A / DIN43650-A) ²⁾											92
	Special electrical connection: Pin 1 Out, Pin 2 -, Pin 3 + (only for output 14, 16, 17 and male electrical connector EN175301-803-A / DIN43650-A) ²⁾											98
	Special electrical connection: Pin 1 +, Pin 2 -, Pin 3 Out (only for output 14, 16, 17 and male electrical connector 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 connector M12x1, 5-pol.) ²⁾											94
	Special electrical connection: Pin 1 +, Pin 3 - (only for male electrical connector Packard Metri Pack 3-poles) 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 request²⁾ Details see electrical connection

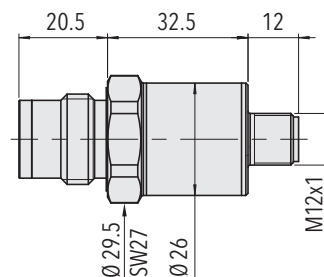
Standard products (extra short lead time)

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	6	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	8	4 ... 20 mA	± 0.4
FPT6.0A	8235 77 2391 05 0000 0000 19 58 61	0 ... 6	12	4 ... 20 mA	± 0.4
FPT10.0A	8235 78 2391 05 0000 0000 19 58 61	0 ... 10	20	4 ... 20 mA	± 0.4
FPT16.0A	8235 79 2391 05 0000 0000 19 58 61	0 ... 16	32	4 ... 20 mA	± 0.4
FPT25.0A	8235 80 2391 05 0000 0000 19 58 61	0 ... 25	50	4 ... 20 mA	± 0.4
FPT40.0A	8235 81 2391 05 0000 0000 19 58 61	0 ... 40	80	4 ... 20 mA	± 0.4
FPT100.0A	8235 83 2391 05 0000 0000 19 58 61	0 ... 100	200	4 ... 20 mA	± 0.4

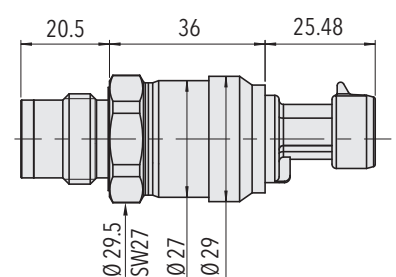
Dimensions



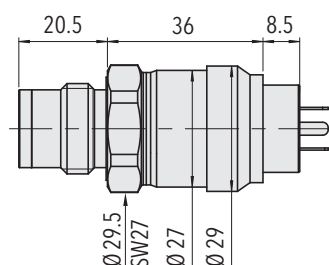
8235.XX.XX91.05.XX.XX



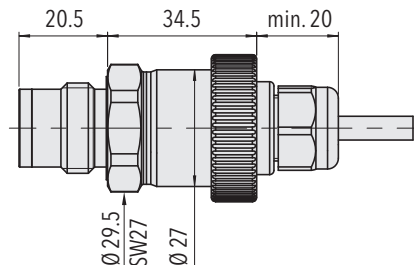
8235.XX.XX91.35.XX.XX



8235.XX.XX91.51.XX.XX

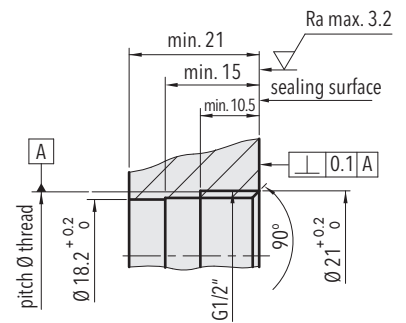


8235.XX.XX91.01.XX.XX

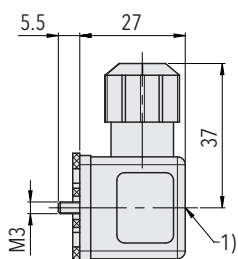


8235.XX.XX91.22.XX.XX

8235.XX.XX91.68.XX.XX

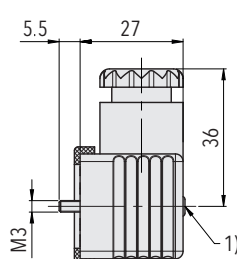


Mounting thread G1/2" DIN EN ISO 1179-1



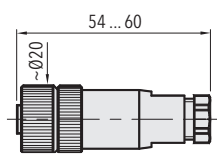
1) Tightening torque 50...60 Ncm

8235.XX.XXXX.XX.XX.46/56

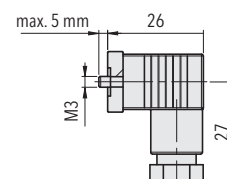


1) Tightening torque 50...60 Ncm

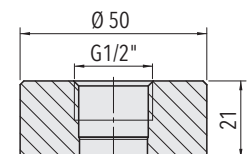
8235.XX.XXXX.XX.XX.58



8235.XX.XXXX.XX.XX.33



8235.XX.XXXX.XX.XX.34

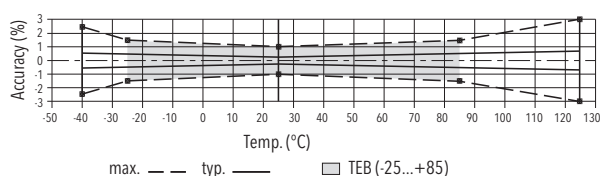


Welding flange for G1/2"
(1.4301)
Ordering No. C27804

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 ... 5 VDC: 24 (10 ... 30) VDC 1 ... 6 VDC: 24 (10 ... 30) VDC 0 ... 10 VDC: 24 (15 ... 30) VDC
	Rise time	Typ. 1 ms / 10 ... 90 % nominal pressure
	Power-on delay time	max. 1.5 s
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +85°C (Cable PVC 22: -5°C ... +60°C)
	Protection ¹⁾	IP65, IP67, IP68
	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 (wetted parts)	1.4542 (AISI630)
	Pressure connection (wetted parts)	1.4542 (AISI630)
	Housing	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⁾ See electrical connection

Measuring accuracy



Electrical connection

Protection / electrical connection										
IP65*)		IP67/IP68 max. 3m		IP67*)		IP67*)		IP65		
Industrial standard EN175301-803A 05		Cable **) 22/68		M12x1 5- pole 35		Packard Metri Pack 3- pole 51		Industrial standard EN175301-803A 01		
Output signal	 8235.XX.XXXX.XX.19			Standard	92		Standard	94	99	
	2	1	white	4	1	1	1		2	
	1	2	brown	1	3	2	3		1	
	⊕	⊕	⊕	5	5				⊕	
 8235.XX.XXXX.XX.14/16/17/25			Standard	98	97		99			
	2	3	1	white	2	1	1		1	
	3	1	3	green	4	3	2		2	
	1	2	2	brown	3	2	3		3	
	⊕	⊕	⊕	⊕	5				⊕	

*) Electrical connections 05/35/51: provided female electrical plug 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