

# 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	Ambient temperature	-40°C ... +85°C (Cable PVC 22: -5°C ... +60°C)

11/2018

Data sheet H72316k

Subject to change

## Ordering information/type code

				8235 . XX			XX	XX	XX	XX	XX	
Measuring range <sup>1)</sup>	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				
<b>Sensor</b>	Relative pressure						23					
<b>Pressure connection</b>	G1/2" male, flush membrane						91					
<b>Electrical connection</b>	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), -5°C ... +60°C <sup>2)</sup>						22					
	Cable IP68 max. 3m, medium +10°C...+35°C, max. 1 bar relative						68					
<b>Output signal</b>	<b>Signal output</b>	<b>Load resistance</b>		<b>I (supply)</b>		<b>U (supply)</b>						
	4 ... 20 mA	(U <sub>supply</sub> -9 V) / 20 mA				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				
<b>Accessories</b>	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)/NBR, -40°C ... +90°C						58					
	Female electrical plug M12x1, 5-pole						33					
	Female electrical connector industrial standard						34					
	Special electrical connection: Pin 1 +, Pin 2 - (only for output signal 4 ... 20 mA and male electrical plug EN175301-803-A / DIN43650-A) <sup>2)</sup>						92					
	Special electrical connection: Pin 1 Out, Pin 2 -, Pin 3 + (only for output 14, 16, 17 and male electrical plug EN175301-803-A / DIN43650-A) <sup>2)</sup>						98					
	Special electrical connection: Pin 1 +, Pin 2 -, Pin 3 Out (only for output 14, 16, 17 and male electrical plug EN175301-803-A / DIN43650-A) <sup>2)</sup>						97					
	Special electrical connection: Pin 1 +, Pin 2 -, Pin 3 GR (Only for output 4...20mA and male electrical plug M12x1, 5-pol.) <sup>2)</sup>						94					
	Special electrical connection: Pin 1 +, Pin 2 - (Only for male electrical plug Packard Metri Pack 3-pol.) <sup>2)</sup>						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					

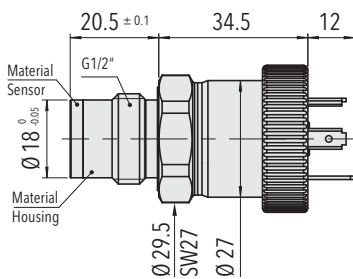
<sup>1)</sup> Extended overpressure as well as customized pressure ranges upon request

<sup>2)</sup> Details see electrical connection

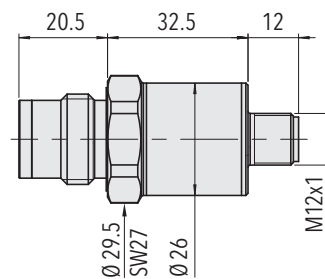
## Standard products (extra short lead time)

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

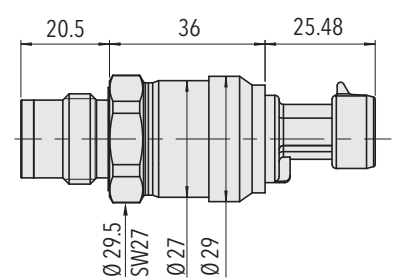
## Dimensions



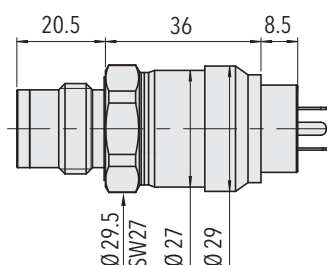
8235.XX.XX91.05.XX.XX



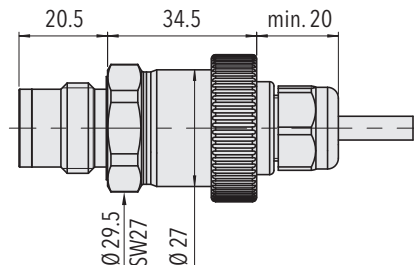
8235.XX.XX91.35.XX.XX



8235.XX.XX91.51.XX.XX

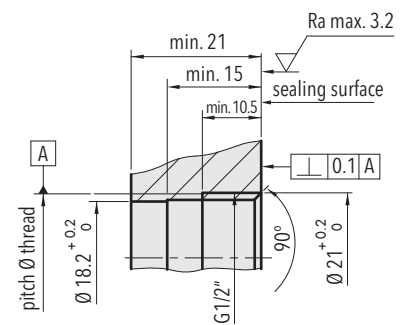


8235.XX.XX91.01.XX.XX

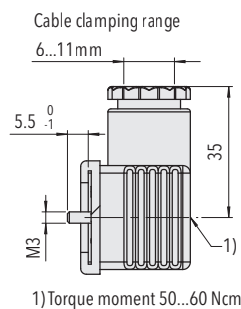


8235.XX.XX91.22.XX.XX

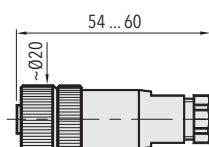
8235.XX.XX91.68.XX.XX



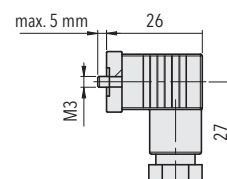
Mounting thread G1/2" DIN EN ISO 1179-1



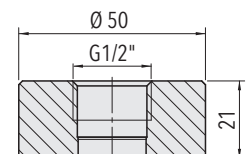
8235.XX.XXXX.XX.XX.58



8235.XX.XXXX.XX.XX.33



8235.XX.XXXX.XX.XX.34



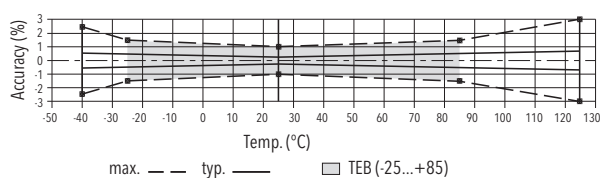
Welding flange for G1/2" (1.4301)

Ordering No. C27804

Specifications		
<b>Accuracy</b>	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.
<b>Electrical Data</b>	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
	Rise time	Typ. 1 ms / 10 ... 90 % nominal pressure
	Switch-on-delay	max. 1.5 s
<b>Environmental conditions</b>	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +85°C (Cable PVC 22: -5°C ... +60°C)
	Protection <sup>1)</sup>	IP65, IP67, IP68
	Humidity	Max. 95 % relative
	Vibration	15 g (50...2000 Hz)
	Shock	50 g / 3 ms
<b>EMC Protection</b>	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
<b>Mechanical Data</b>	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

<sup>1)</sup> See electrical connection

## Measuring accuracy



## Electrical connection

		Protection / electrical connection									
		IP65*)		IP67/IP68 max. 3m		IP67*)		IP67*)		IP65	
		Industrial standard EN175301-803A <b>05</b>		Cable **) <b>22/68</b>		M12x1 5-pole <b>35</b>		Packet Metri Pak 3-pole <b>51</b>		Industrial standard EN175301-803A <b>01</b>	
Output signal	<p><b>8235.XX.XXXX.XX.19</b></p>	Standard	<b>92</b>			Standard	<b>94</b>			<b>99</b>	
		2	1	white		4	1	1	1	2	
		1	2	brown		1	3	2	3	1	
		⊕	⊖	⊖		5	5			⊖	
	<p><b>8235.XX.XXXX.XX.14/16/17</b></p>	Standard	<b>98</b>	<b>97</b>					<b>99</b>		
		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 connector is mounted according to instructions

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

### Additional information

#### Documents

Data sheet	<a href="http://www.trafag.com/H72316">www.trafag.com/H72316</a>
Instructions	<a href="http://www.trafag.com/H73316">www.trafag.com/H73316</a>
Flyer	<a href="http://www.trafag.com/H70648">www.trafag.com/H70648</a>