FPT 8236

Flush Membrane Transmitter

Applications

- Machine tools
- Food Industry
- Process technology
- Water treatment
- Hydraulics

Features

- Flush membrane with smooth and plain surface
- Membrane in Duplex steel 1.4462
- Completely welded sensor system
- Excellent long-term stability

CE EMC: 2014/30/EU

UKCA S.I. 2016 No. 1091

RoHS/Reach compliant

UL-listed version

Product description

The FPT 8236 pressure transmitter impresses with an absolutely smooth and robust flush-mounted measuring diaphragm made of corrosion-resistant duplex steel. Trafag's proprietary thin-film-on-steel sensor technology ensures a wide temperature range and excellent long-term stability.

Technical Data

Measuring principle	Thin-film-on-steel
Measuring range	0 ... 1 to 0 ... 100 bar 0 ... 15 to 0 ... 1500 psi
Output signal	4 ... 20 mA, 0 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, 0.5 … 4.5 VDC ratiometric
Media temperature	–10°C ... +125°C
Ambient temperature	max. –10°C ... +125°C (UL-rated ambient temperature: -20°C ... +80°C) Details see section Electrical Connection

Additional information

Data sheet	www.trafag.com/H72343
Instructions	www.trafag.com/H73343
Accessories	www.trafag.com/H72258
Video	https://youtu.be/7TfUtq_GjpE

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Ordering information/Type code

								8236	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]**							
	-0.4 ... 0.6	5	7.5	**A6**	-5 ... 10	60	90	**F5**						
	-0.5 ... 0.5	5	7.5	**A7**										
	-1 ... 0	5	7.5	**D4**										
	-1 ... 1	5	7.5	**B1**										
	-1 ... 1.6	5	7.5	**B3**										
	0 ... 1	5	7.5	**71**	0 ... 15	60	90	**G1**						
	0 ... 2.5	5	7.5	**75**	0 ... 30	60	90	**G5**						
	0 ... 4	8	12	**76**	0 ... 50	100	150	**G6**						
	0 ... 6	12	15	**77**	0 ... 100	200	250	**G7**						
	0 ... 10	20	25	**78**	0 ... 150	300	375	**G8**						
	0 ... 16	32	40	**79**	0 ... 250	500	625	**G9**						
	0 ... 25	50	75	**80**	0 ... 400	800	1200	**H0**						
	0 ... 40	80	100	**81**	0 ... 500	1000	1250	**H1**						
	0 ... 100	200	300	**83**	0 ... 1500	3000	4500	**H3**						
Sensor	Relative pressure								**23**					
Pressure connection	G1/2" male, flush membrane, standard length									**93**				
	G1/2" male, flush membrane, 30 mm length [2]									**94**				
Electrical connection	Male electrical connector EN 175301-803-A (DIN 43650-A), Material PA										**05**			
	Cable PUR (Screwed cable gland PA 6-3), -10°C … +70°C [3] [4]										**24**			
	Male electrical connector M12x1, 5-pole, Material PA										**35**			
	3 Way male Delphi MetriPack 1.5 sealed connector, Material PA66										**51**			

	Output signal	**Load resistance**	**I (supply)**	**U (supply)**	
Output signal	4 ... 20 mA	(Usupply-9 V) / 20 mA	(= signal output)	9 ... 32 VDC	**19**
	0 ... 5 VDC	> 2.5 kΩ	≤ 20 mA	9 ... 32 VDC	**14**
	1 ... 6 VDC	> 5.0 kΩ	≤ 20 mA	9 ... 32 VDC	**16**
	0 ... 10 VDC	> 5.0 kΩ	≤ 20 mA	15 ... 32 VDC	**17**
	0.5 ... 4.5 VDC ratiom.	> 5.0 kΩ	≤ 20 mA	5 (4.75 ... 5.25) VDC	**23**

Accessories	Seal FKM	**61**
	Female electrical plug EN 175301-803-A (DIN 43650-A)/NBR, -40°C ... +90°C, for cable diameter 4 … 9 mm, flammability standard UL94-V0	**46**
	Female electrical plug EN 175301-803-A (DIN 43650-A)/silicone, -40°C ... +125°C, for cable diameter 4 … 9 mm, flammability standard UL94-V0	**56**
	Female electrical plug EN 175301-803-A (DIN 43650-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**
	Housing nut for electrical connection EN 175301-803-A (DIN 43650-A) secured with Loctite (max. 85°C)	**L9**
	Cable length 0.5 m	**EM**
	Cable length 1.5 m	**1M**
	Cable length 3.0 m	**3M**
	Cable length 5.0 m	**5M**
	UL-listed version	**UL**
	Pin configuration, see table: Electrical connection	

[1] Extended overpressure as well as customized pressure ranges upon request
[2] Upon request, whereas minimum order quantities may apply
[3] Cable length see accessories (max. length 50 m, in 5-meter sections)
[4] IP68, max. 3 m, Media +10°C … +35°C

Signal processing

Code	Cut-off frequency f_G	Rise time (10 ... 90 % nominal pressure)	Output signal			
			4 ... 20 mA	0.5 ... 4.5 VDC ratiometric	0 ... 6 VDC	0 ... 10 VDC
GA [1]	11 Hz	32 ms	x	x	-	-
Standard specification	350 Hz	1 ms	x	x	x	x

[1] Upon request, whereas minimum order quantities may apply

Standard configurations

Product No.	Type Code	Pressure range [bar]	Overpressure max. [bar]	Accuracy @ 25°C typ. [%]	Signal output
FPT1.0A	8236 71 2393 05 0000 0000 19 58 61	0 ... 1	5	± 1.0	4 ... 20 mA
FPT2.5A	8236 75 2393 05 0000 0000 19 58 61	0 ... 2.5	5	± 0.5	4 ... 20 mA
FPT4.0A	8236 76 2393 05 0000 0000 19 58 61	0 ... 4	8	± 0.5	4 ... 20 mA
FPT6.0A	8236 77 2393 05 0000 0000 19 58 61	0 ... 6	12	± 0.5	4 ... 20 mA
FPT10.0A	8236 78 2393 05 0000 0000 19 58 61	0 ... 10	20	± 0.5	4 ... 20 mA
FPT16.0A	8236 79 2393 05 0000 0000 19 58 61	0 ... 16	32	± 0.5	4 ... 20 mA
FPT25.0A	8236 80 2393 05 0000 0000 19 58 61	0 ... 25	50	± 0.5	4 ... 20 mA
FPT40.0A	8236 81 2393 05 0000 0000 19 58 61	0 ... 40	80	± 0.5	4 ... 20 mA
FPT100.0A	8236 83 2393 05 0000 0000 19 58 61	0 ... 100	200	± 0.5	4 ... 20 mA
FPT1.0M	8236 71 2393 35 0000 0000 19 33 61	0 ... 1	5	± 1.0	4 ... 20 mA
FPT2.5M	8236 75 2393 35 0000 0000 19 33 61	0 ... 2.5	5	± 0.5	4 ... 20 mA
FPT4.0M	8236 76 2393 35 0000 0000 19 33 61	0 ... 4	8	± 0.5	4 ... 20 mA
FPT6.0M	8236 77 2393 35 0000 0000 19 33 61	0 ... 6	12	± 0.5	4 ... 20 mA
FPT10.0M	8236 78 2393 35 0000 0000 19 33 61	0 ... 10	20	± 0.5	4 ... 20 mA
FPT16.0M	8236 79 2393 35 0000 0000 19 33 61	0 ... 16	32	± 0.5	4 ... 20 mA
FPT25.0M	8236 80 2393 35 0000 0000 19 33 61	0 ... 25	50	± 0.5	4 ... 20 mA
FPT40.0M	8236 81 2393 35 0000 0000 19 33 61	0 ... 40	80	± 0.5	4 ... 20 mA
FPT100.0M	8236 83 2393 35 0000 0000 19 33 61	0 ... 100	200	± 0.5	4 ... 20 mA

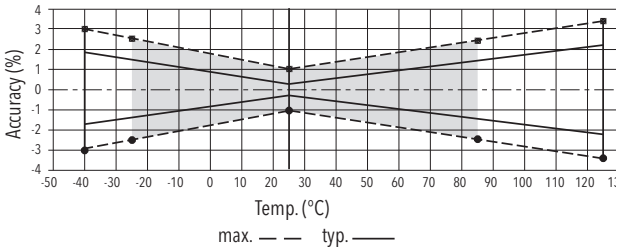
Accuracy

Pressure measurement span		≥ 2.5 bar ≥ 30 psi	< 2.5 bar < 30 psi
TEB @ -25 ... +85°C	[% FS typ.]	± 1.5	± 3.0
Accuracy @ +25°C	[% FS typ.]	± 0.5	± 1.0
Additional mounting torque offset	[% FS typ.]	± 0.2	± 0.5
NLH @ +25°C (BSL)	[% FS typ.]	± 0.1	± 0.2
TC zero point and span Additional TC for zero point and span at different media and ambient temperatures [1)]	[% FS/K typ.] [% FS/K typ.]	± 0.01 ± 0.08	± 0.025 ± 0.25
Long term stability 1 year @ +25°C	[% FS typ.]	± 0.2	± 0.5

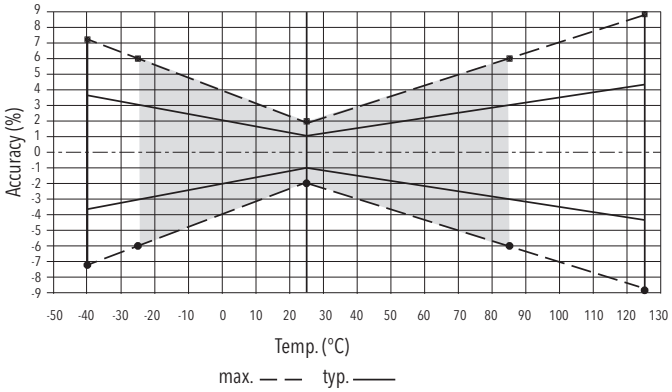
[1)] Applies to a stationary condition. If there is a sudden change in the temperature of the media, a considerable deviation in the measured value must be expected until thermal balance is re-established

Measuring accuracy

2.5 ... 100 bar



< 2.5 bar



Specifications

Electrical data	Output / supply voltage	4 ... 20 mA: 24 (9 ... 32) VDC 0 ... 5 VDC: 24 (9 ... 32) VDC 1 ... 6 VDC: 24 (9 ... 32) VDC 0 ... 10 VDC: 24 (15 ... 32) VDC 0.5 ... 4.5 VDC ratiometric: 10 ... 90 % U_s: 5 ± 0.25 VDC
	Power-on delay time	100 ms
	Rise time of supply voltage	typ. 1 ms, 10 ... 90 % nominal pressure
	Inverse-polarity protection, short-circuit strength @ 25°C during 5 min.	4 ... 20 mA: to U_s = 32 VDC 0 ... 10 VDC, 0 ... 5 VDC, 1 ... 6 VDC: to U_s = 28 VDC 0.5 ... 4.5 VDC ratiometric: to U_s = 14 VDC
	Resistance of insulation	> 100 MΩ, 50 VDC
	Dielectric strength	50 VAC, 50 Hz
	Current limiting output signal	24 mA (Overload)
Environmental conditions	Media temperature	-10°C ... +125°C
	Ambient temperature	max. -10°C ... +125°C (UL-rated ambient temperature: -20°C ... +80°C) Details see section Electrical Connection
	Storage temperature	-20°C ... +40°C
	Protection	IP65, IP67, IP68 Details see section Electrical Connection
	Vibration	15 g RMS (20...2000 Hz) acc.to EN 60068-2-64 25 g sin (80...2000 Hz), 1 oct./min, (1x @ 25°C) (EN 60068-2-6)
	Shock	50 g/11 ms
EMC protection	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
Mechanical data	Sensor (wetted parts)	1.4462 (AISI 318 LN)
	Pressure connection (wetted parts)	1.4462 (AISI 318 LN), 1.4542
	Housing	1.4542
	Sealing	FKM
	Weight	~ 80 ... 110 g (without cable)
	Mounting torque	20 ... 25 Nm not lubricated 15 ... 20 Nm lubricated

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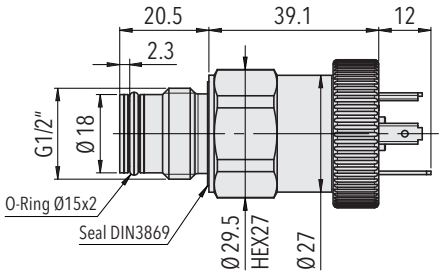
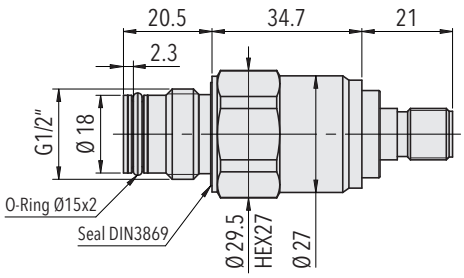
Dimensions



8236.XX.XX.**93.05**.XX.XX



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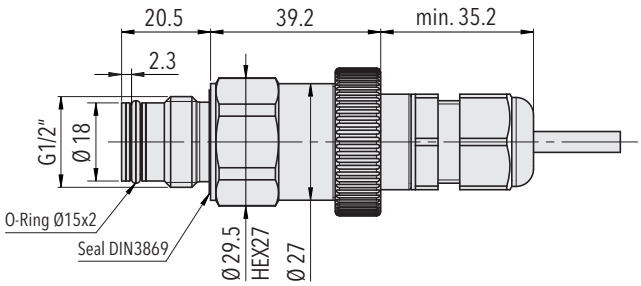

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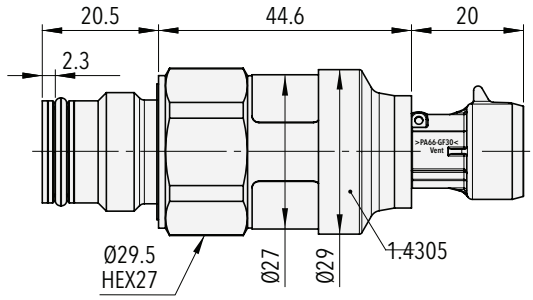

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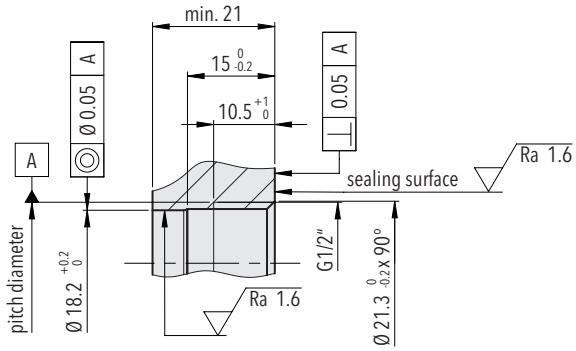

Mounting thread G1/2" standard length (Process connection 93)
DIN EN ISO 1179-1

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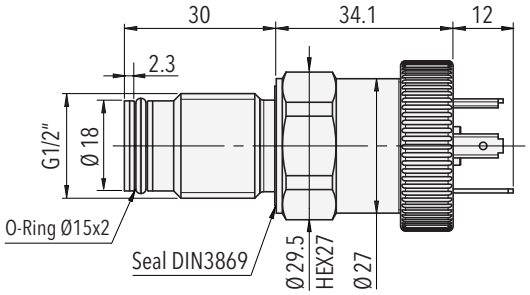
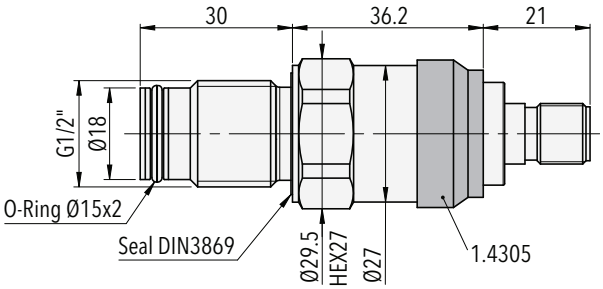
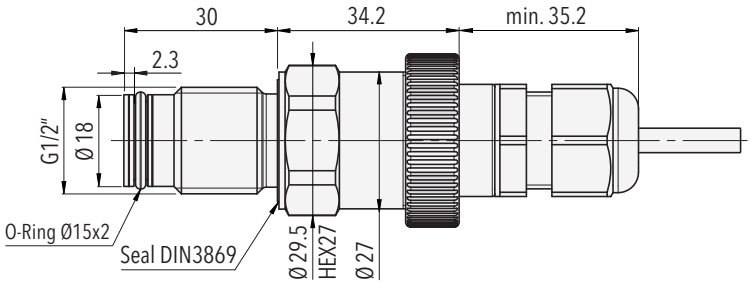
Dimensions



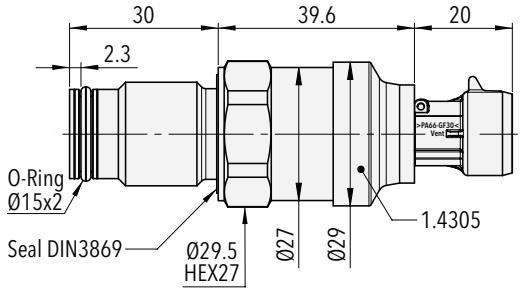
8236.XX.XX.**94.05**.XX.XX



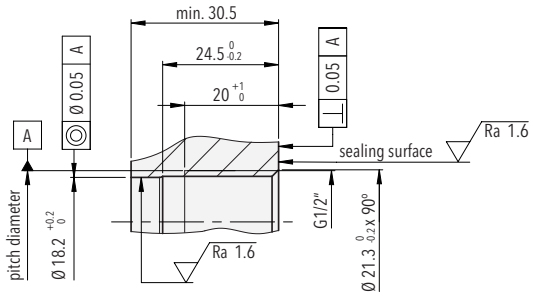
8236.XX.XX.**94.35**.XX.XX



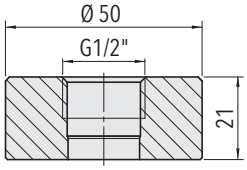
8236.XX.XX.**94.24**.XX.XX



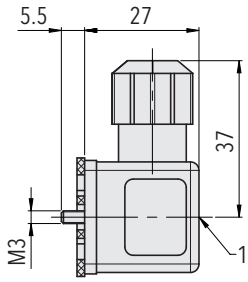
8236.XX.XXXX.**94.51**.XX.XX



Mounting thread G1/2" 30 mm length
(Process connection 94)
DIN EN ISO 1179-1

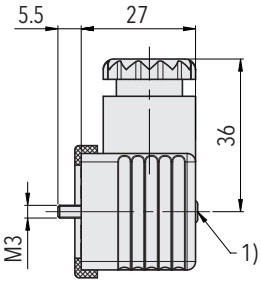


Welding flange for G1/2"
standard length
AISI 316L (1.4404/1.4435)
Ordering No. F82060

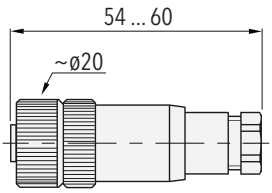


[1] Tightening torque 50 ... 60 Ncm

8236.XX.XXXX.XX.XX.**46/56**



8236.XX.XXXX.XX.XX.**58**



8236.XX.XXXX.XX.XX.**33**

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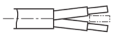
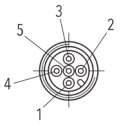
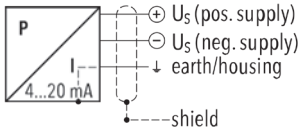
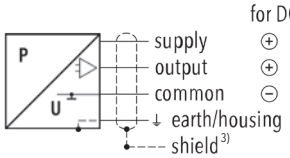
Electrical connections

	Industrial standard EN175301-803A		Cable	M12x1, 5-pole		
						
Electrical connection type code	05		24	35		
IP protection	IP65 [1) 2)]		IP65, IP68 [2)]	IP67 [1) 2)]		
Ambient temperature	-10°C ... +125°C		-10°C ... +70°C	-10°C ... +125°C		
UL-rated ambient temperature	-10°C ... +80°C		-10°C ... +70°C	-10°C ... +80°C		
Pin assignment type code		**92**			**94**	**H1**
Output signal **8236.xx.xxxx.xx.19** 	2 1 Earth	1 2 Earth	White Brown Yellow	4 1 5	1 3 5	1 2 5

Pin assignment type code		**98**	**97**			**E8**
Output signal **8236.xx.xxxx.xx.14/16/17/23** 	2 3 1 Earth	3 1 2 Earth	1 3 2 Earth	White Green Brown Yellow	2 4 3 5	1 3 2 5

[1)] Electrical connections 05/35/51: provided female electrical plug is mounted according to instructions
[2)] Ventilation via male electric plug/cable end
[3)] Only cable versions or female electrical plug with shield connection

Empty 'Pin Assignment Type Code' field: Default pinout

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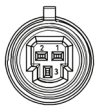
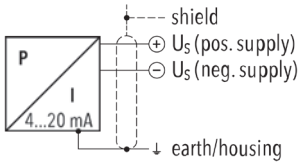
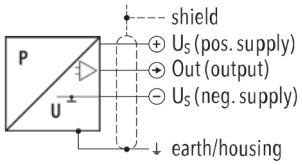
Electrical connection

	3 Way M MetriPack 1.5 sealed connector	
		
Electrical connection type code	51	
IP protection	IP67 [1]	
Ambient temperature	-40°C … +125°C	
UL-rated ambient temperature	-20°C … +80°C	
Pin assignment type code		**E4**
Output signal 8236.XX.XXXX.XX.19 	1 2	1 3
Pin assignment type code		**99**
Output signal 8236.XX.XXXX.XX.14/16/17/23 	1 3 2	1 2 3

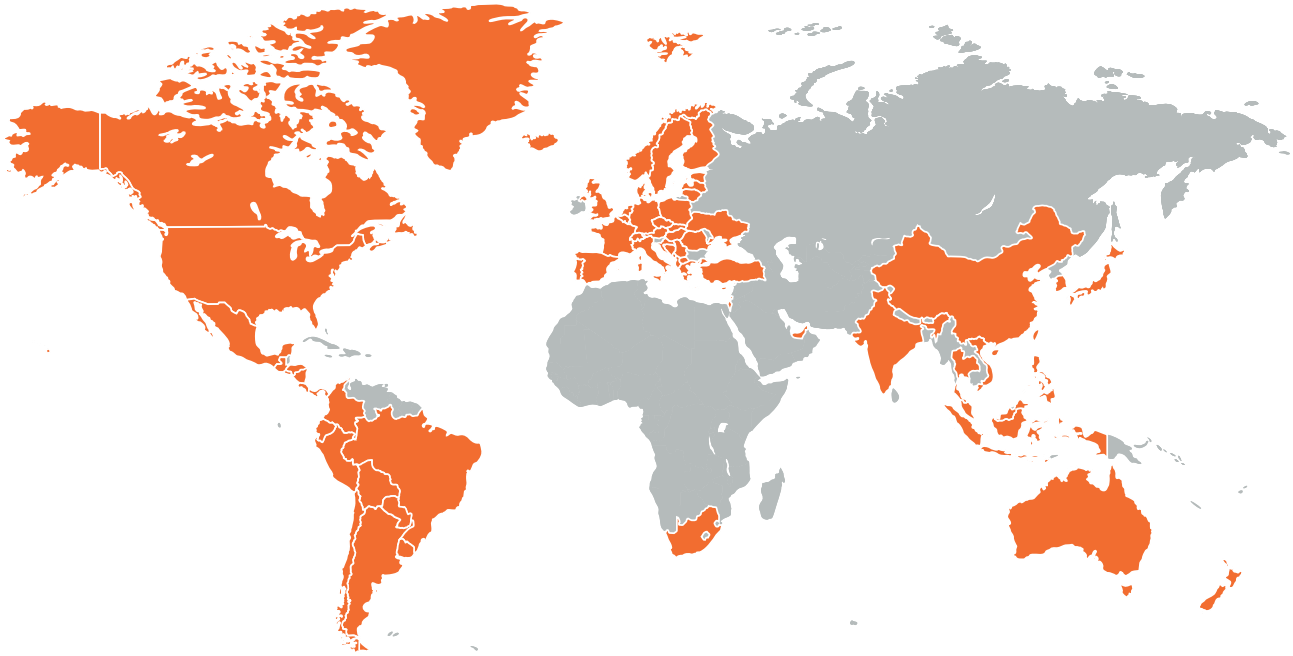
[1] Provided female electrical plug is mounted according to instructions

Empty 'Pin Assignment Type Code' field: Default pinout

Reliable quality

Worldwide represented, globally trusted, Swiss based

Trafag develops, produces and distributes robust, reliable and precise instruments for monitoring pressure, temperature and gas density.
The broad portfolio of pressure and temperature measuring instruments is tailored for use in test benches through to applications in harsh environments. The research and development departments in Switzerland and Germany develop all important components from the sensor to the application-specific microchip, which are then manufactured in the production facilities in Switzerland, Germany, the Czech Republic, and India. Strict quality management according to ISO 9001 and ISO 14001 ensures that Trafag products meet the required quality and sustainability standards.
Trafag is headquartered in Switzerland, was founded in 1942 and has an extensive sales and service network in more than 40 countries worldwide.



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Pressure transmitters | Electronic pressure switches | Mechanical pressure switches | Pressure gauge | Thermostats | Temperature transmitters | Gas density