

Industrial Pressure Transmitter



Product description

The industrial pressure transmitter EPI 8287 features the extremely robust and stable thin-film-on-steel sensor element from its well-proven predecessor EPI 8297. In combination with the in-house-developed ASIC it offers a wide temperature range up to 125°C and triple overpressure safety which makes it the perfect solution for a wide range of demanding applications.

Applications

- Machine tools
- Hydraulics
- Industrial applications

Features

- Excellent long-term stability
- Completely welded steel sensor system without additional seals
- Accuracy classes 0.3%, 0.5%
- Optional: 5-fold overpressure resistance
- Optionally with housing material AISI316L

EMC: 2014/30/EU

S.I. 2016 No. 1091

RoHS/Reach compliant

UL-listed version

Technical Data

Measuring principle	Thin-film-on-steel
Measuring range	0 ... 0.2 to 0 ... 700 bar 0 ... 30 to 0 ... 10000 psi
Output signal	4 ... 20 mA, 0 ... 5 VDC, 0.5 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, 0.5 ... 4.5 VDC ratiometric
Media temperature	-40°C ... +125°C
Ambient temperature	max. -40°C ... +125°C (UL-rated ambient temperature: -20°C ... +80°C) Details see section: Electrical Connection

Additional information

Data sheet www.trafag.com/H72317
 Instructions www.trafag.com/H73317
 Accessories www.trafag.com/H72258
 Video <https://youtu.be/OOjlqU0ttYM>

Ordering information/Type code

Ordering information/Type code				8287	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 ... 2.5	7.5	50	75	0 ... 30	90	700	G5			
	0 ... 4	12	60	76	0 ... 50	150	850	G6			
	0 ... 6	18	100	77	0 ... 100	300	1450	G7			
	0 ... 10	30	200	78	0 ... 150	450	2500	G8			
	0 ... 16	48	200	79	0 ... 200	600	2500	GA			
	0 ... 25	75	300	80	0 ... 250	750	2500	G9			
	0 ... 40	120	300	81	0 ... 300	900	4000	HA			
	0 ... 60	180	400	82	0 ... 400	1200	4000	H0			
	0 ... 100	300	500	83	0 ... 500	1500	4000	H1			
	0 ... 160	480	750	85	0 ... 1000	3000	5000	H2			
	0 ... 250	750	1000	74	0 ... 1500	4500	7000	H3			
	0 ... 400	1000	2000	84	0 ... 2000	6000	10000	H5			
	0 ... 600	1500	2500	86	0 ... 3000	9000	14500	G4			
	0 ... 700 ²⁾	1500	2500	87	0 ... 5000	12500	21750	H4			
					0 ... 7500	18750	29000	H6			
					0 ... 10000 ²⁾	18750	29000	H7			
Option 5P:	Fivefold overpressure				Option:	Maximum Overpressure					
	0 ... 2.5	12.5	60	55	0 ... 30	150	1450	E5			
	0 ... 4	20	100	56	0 ... 50	180	1450	E6			
	0 ... 6	30	200	57	0 ... 100	450	3500	E7			
	0 ... 10	50	200	58	0 ... 150	700	4250	E8			
	0 ... 16	80	300	59	0 ... 200	700	4250	EA			
	0 ... 25	125	300	60	0 ... 250	1150	5750	E9			
	0 ... 40	200	400	61	0 ... 300	1150	5750	FA			
	0 ... 60	300	500	62	0 ... 400	1800	8500	F0			
	0 ... 100	500	750	63	0 ... 500	1800	8500	F1			
	0 ... 160	800	1000	65	0 ... 1000	4600	19000	F2			
Sensor	Relative pressure, accuracy class: 0.5 %; Material pressure connection and housing: 1.4542 (AISI 630)							25			
	Relative pressure, accuracy class: 0.5 %; Material pressure connection and housing: 1.4404 (AISI 316L) ³⁾⁴⁾⁵⁾							35			
	Relative pressure, accuracy class: 0.3 %; Material pressure connection and housing: 1.4542 (AISI 630)							23			
	Relative pressure, accuracy class: 0.3 %; Material pressure connection and housing: 1.4404 (AISI 316L) ³⁾⁴⁾⁵⁾							33			

		8287	XX	XX	XX	XX	XX	XX
Pressure connection	G1/4" female							10
	G1/4" male, Seal: DIN 3869							17
	G1/4" male, with integrated damping Ø 0.5 mm, Seal: DIN 3869 ⁶⁾							15
	G1/4" male (Manometer) EN 837 ³⁾							53
	G1/2" male (Manometer) EN 837							11
	1/4" NPT male							30
	1/4"- 18 NPT female ³⁾							13
	1/2" NPT male ³⁾							51
	R1/4" male, DIN 3858 ³⁾							19
	M14x1.5 male DIN EN ISO 6149-2 ³⁾							31
	7/16"-20UNF male, DIN 3866 ³⁾⁷⁾							18
	7/16"-20UNF-2A male, SAE J1926-2 (Heavy Duty) ⁸⁾							69
	7/16"-20UNF female, SAE J512 with valve opener ⁷⁾							24
	9/16"-18UNF-2A male, SAE J1926-2 (Heavy Duty) ⁸⁾							67
Electrical connection	Male electrical connector EN 175301-803-A (DIN 43650-A), Material PA							05
	Male electrical connector M12x1, 5-pole, Material PBT							35
	3 Way male Delphi MetriPack 1.5 sealed connector, Material PA66							51
	Male electrical connector MIL-C 26482, 6-pole, Material metal ¹⁰⁾							02
	Male electrical connector DIN 72585 Code 1, Material: PBT (Contacts material: Sn) ¹¹⁾							25
	Cable PUR (Screwed cable gland PA 6-3), -20°C ... +70°C ¹²⁾¹³⁾							24
	Cable PVC (Screwed cable gland PA 6-3), -5°C ... +60°C ¹²⁾¹³⁾¹⁴⁾							22
	Cable Raychem (Screwed cable gland PA 6-3), -20°C ... +100°C ¹²⁾¹³⁾¹⁴⁾							08
Output signal	Output signal	Load resistance	I (supply)	U (supply)				
	4 ... 20 mA	(U _s - 9 V) / 20 mA	(= signal output)	9 ... 32 VDC	19			
	0 ... 5 VDC	> 2.5 kΩ	≤ 20 mA	9 ... 32 VDC	14			
	0.5 ... 5 VDC	> 5.0 kΩ	≤ 20 mA	9 ... 32 VDC	22			
	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, -18°C ... +125°C		61
Seal EPDM, -40°C ... +125°C		63
Seal NBR, -25°C ... +100°C		83
Pressure peak damping element ø 1.0 mm, material 1.4305		40
Pressure peak damping element ø 0.4 mm, material 1.4305 (sensors 23, 25) resp. 1.4404 (sensors 33, 35)		44
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 1.5 m		1M
Cable length 3.0 m		3M
Cable length 5.0 m		5M
Enhanced condensation protection		CP
Multiple packaging ¹⁵⁾		VM
UL-listed version ¹⁶⁾		UL
Pin configuration, see table: Electrical connection		

⁰¹⁾ Customized pressure ranges upon request

⁰²⁾ Only for pressure connections 13, 30, 31 and 51

⁰³⁾ Upon request, whereas minimum order quantities may apply

⁰⁴⁾ Only with pressure connection 17 (G1/4") or 11 (G1/2")

⁰⁵⁾ Only for pressure ranges ≥ 10 bar

⁰⁶⁾ Only for sensors 23 and 25

⁰⁷⁾ max. allowable pressure range 60 bar at 180 bar overpressure

⁰⁸⁾ Measuring range max. 630 bar according to SAE J1926-2 (Heavy Duty)

⁰⁹⁾ Do not use for new designs as this option will be phased out soon. Only limited quantities available.

¹⁰⁾ Only for sensors 23 and 25, only for pressure connections 13, 17, 19, 53, only for output signal 4 ... 20 mA (Code 19)

¹¹⁾ Only for sensors 23 and 25, only for pressure connections 13, 17, 19, 53, only for output signal 0.5 ... 4.5 VDC ratiometric (Code 23)

¹²⁾ Cable length see accessories (max. length 50 m, in 5-meter sections)

¹³⁾ IP68, max. 3 m, Media +10°C ... +35°C

¹⁴⁾ Cable length max. 3 m for pressure ranges ≤ 16 bar

¹⁵⁾ The order quantity must be a multiple of 50, only for electrical connections 05 and 35

¹⁶⁾ Possible type code combinations for UL-listed versions see separate table

Compatibility matrix pressure connection and accessories

Code	Pressure connection	Damping		Seal		
		Ø 1.0 mm (Code 40)	Ø 0.4 mm (Code 44)	FKM (Code 61)	EPDM (Code 63)	NBR (Code 83)
10	G1/4" female					
17	G1/4" male, Seal: DIN 3869	✓	✓	✓	✓	✓
15	G1/4" male, with integrated damping Ø 0.5 mm, Seal: DIN 3869	✓	✓	✓	✓	✓
53	G1/4" male (Manometer) EN 837	✓	✓			
11	G1/2" male (Manometer) EN 837					
30	1/4" NPT male	✓	✓			
13	1/4"- 18 NPT female					
51	1/2" NPT male	✓	✓			
19	R1/4" male, DIN 3858	✓	✓			
31	M14x1.5 male DIN EN ISO 6149-2	✓	✓	✓		
18	7/16"-20UNF male, DIN 3866					
69	7/16"-20UNF-2A male, SAE J1926-2 (Heavy Duty)	✓	✓	✓	✓	
24	7/16"-20UNF female, SAE J512 with valve opener					
67	9/16"-18UNF-2A male, SAE J1926-2 (Heavy Duty)	✓	✓	✓	✓	

Ordering information: Possible type code combinations for UL-listed versions

	Combination with UL
Measuring range	All ranges on datasheet
Sensor	All codes on datasheet
Pressure connection	All codes on datasheet
Electrical connection	All codes on datasheet
Output signal	All codes except PS and T1
Accessories	All codes except GA, GS and GU

Signal processing

Code	Cut-off frequency f_c	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 products (extra short lead time)

Product No.	Type Code	Pressure range [bar]	Overpressure max. [bar]	Supply [VDC]	Signal output
EPI2.5A	8287 75 2517 05 0000 0000 19 44 58 61	0 ... 2.5	7.5	9 ... 32	4 ... 20 mA
EPI4.0A	8287 76 2517 05 0000 0000 19 44 58 61	0 ... 4	12	9 ... 32	4 ... 20 mA
EPI6.0A	8287 77 2517 05 0000 0000 19 44 58 61	0 ... 6	18	9 ... 32	4 ... 20 mA
EPI10.0A	8287 78 2517 05 0000 0000 19 44 58 61	0 ... 10	30	9 ... 32	4 ... 20 mA
EPI16.0A	8287 79 2517 05 0000 0000 19 44 58 61	0 ... 16	48	9 ... 32	4 ... 20 mA
EPI25.0A	8287 80 2517 05 0000 0000 19 44 58 61	0 ... 25	75	9 ... 32	4 ... 20 mA
EPI40.0A	8287 81 2517 05 0000 0000 19 44 58 61	0 ... 40	120	9 ... 32	4 ... 20 mA
EPI60.0A	8287 82 2517 05 0000 0000 19 44 58 61	0 ... 60	180	9 ... 32	4 ... 20 mA
EPI100.0A	8287 83 2517 05 0000 0000 19 44 58 61	0 ... 100	300	9 ... 32	4 ... 20 mA
EPI160.0A	8287 85 2517 05 0000 0000 19 44 58 61	0 ... 160	480	9 ... 32	4 ... 20 mA
EPI250.0A	8287 74 2517 05 0000 0000 19 44 58 61	0 ... 250	750	9 ... 32	4 ... 20 mA
EPI400.0A	8287 84 2517 05 0000 0000 19 44 58 61	0 ... 400	1000	9 ... 32	4 ... 20 mA
EPI600.0A	8287 86 2517 05 0000 0000 19 44 58 61	0 ... 600	1500	9 ... 32	4 ... 20 mA
EPI2.5V	8287 75 2517 05 0000 0000 17 44 58 61	0 ... 2.5	7.5	15 ... 32	0 ... 10 mA
EPI4.0V	8287 76 2517 05 0000 0000 17 44 58 61	0 ... 4	12	15 ... 32	0 ... 10 mA
EPI6.0V	8287 77 2517 05 0000 0000 17 44 58 61	0 ... 6	18	15 ... 32	0 ... 10 mA
EPI10.0V	8287 78 2517 05 0000 0000 17 44 58 61	0 ... 10	30	15 ... 32	0 ... 10 mA
EPI16.0V	8287 79 2517 05 0000 0000 17 44 58 61	0 ... 16	48	15 ... 32	0 ... 10 mA
EPI25.0V	8287 80 2517 05 0000 0000 17 44 58 61	0 ... 25	75	15 ... 32	0 ... 10 mA
EPI40.0V	8287 81 2517 05 0000 0000 17 44 58 61	0 ... 40	120	15 ... 32	0 ... 10 mA
EPI60.0V	8287 82 2517 05 0000 0000 17 44 58 61	0 ... 60	180	15 ... 32	0 ... 10 mA
EPI100.0V	8287 83 2517 05 0000 0000 17 44 58 61	0 ... 100	300	15 ... 32	0 ... 10 mA
EPI160.0V	8287 85 2517 05 0000 0000 17 44 58 61	0 ... 160	480	15 ... 32	0 ... 10 mA
EPI250.0V	8287 74 2517 05 0000 0000 17 44 58 61	0 ... 250	750	15 ... 32	0 ... 10 mA
EPI400.0V	8287 84 2517 05 0000 0000 17 44 58 61	0 ... 400	1000	15 ... 32	0 ... 10 mA
EPI600.0V	8287 86 2517 05 0000 0000 17 44 58 61	0 ... 600	1500	15 ... 32	0 ... 10 mA

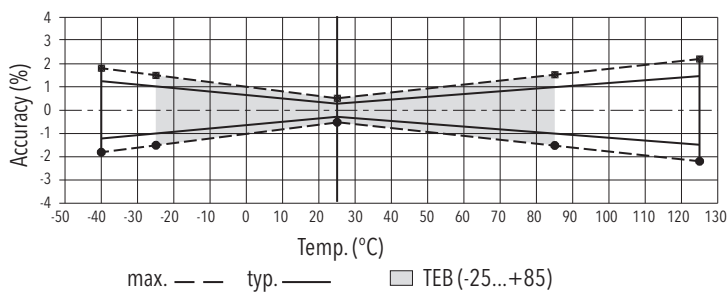
Specifications

Electrical data	Output / supply voltage	4 ... 20 mA: 24 (9 ... 32) VDC 0 ... 5 VDC: 24 (9 ... 32) VDC 0.5 ... 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	> 10 M Ω , 50 VDC
	Dielectric strength	50 VAC, 50 Hz
	Current limiting output signal	24 mA (Overload)
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	max. -40°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
	Humidity	max. 95 % relative
	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) acc.to EN 60068-2-6
	Shock	500 g/1 ms acc.to EN 60068-2-27
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) or 1.4404 (AISI316L)
	Housing	1.4542 (AISI630) or 1.4404 (AISI316L)
	Sealing	FPM, EPDM, NBR
	Male electrical connector	See ordering information
	Mounting torque	25 Nm

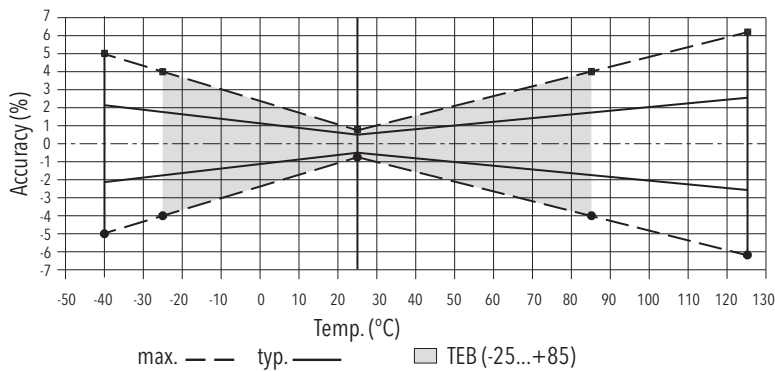
Accuracy

		Accuracy class 0.3% Ordering code 23/33	Accuracy class 0.5% Ordering code 25/35
TEB @ -25 ... +85°C	[% FS typ.]	± 1.0	± 1.75
Accuracy @ +25°C	[% FS typ.]	± 0.3	± 0.5
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.2
TC zero point and span	[% FS/K typ.]	± 0.01	± 0.03
Long term stability 1 year @ +25°C	[% FS typ.]	± 0.1	± 0.1
Mounting dependency with 180° rotation (vibration and shock)	[% FS max.]	0.5 mbar	0.5 mbar

Accuracy class 0.3 %

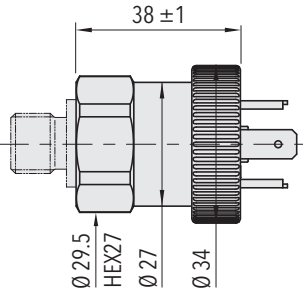


Accuracy class 0.5 %

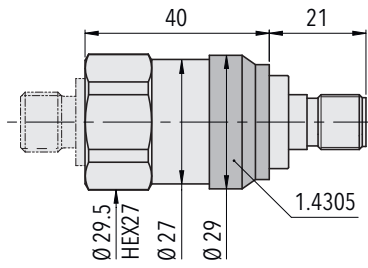


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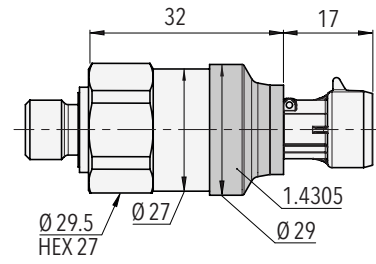
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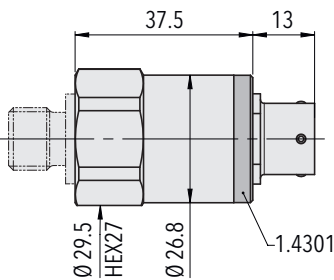
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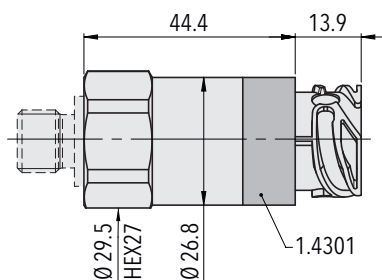
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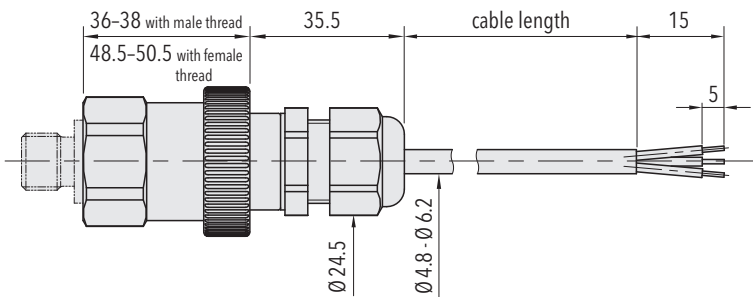
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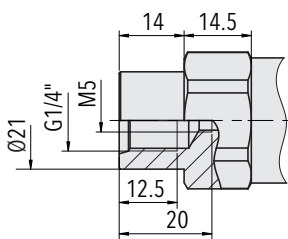
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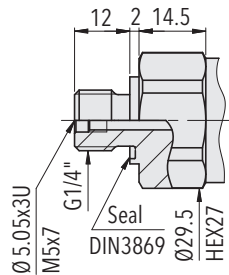
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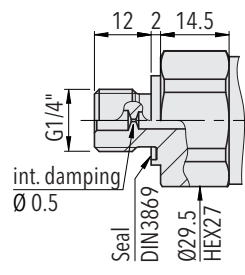
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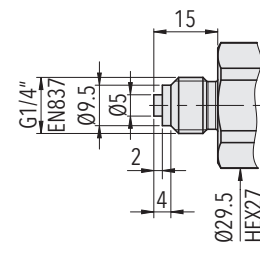
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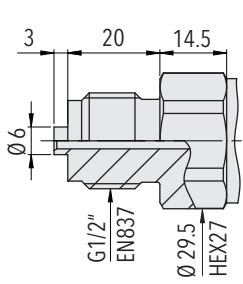


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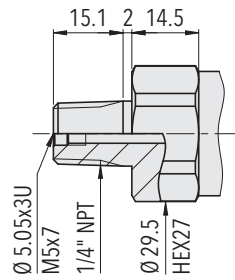


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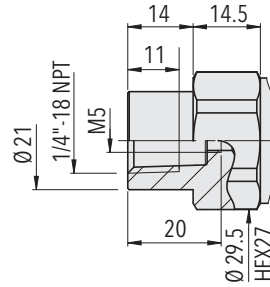
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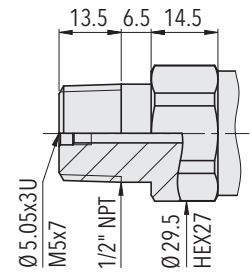
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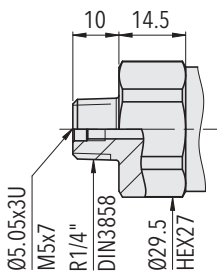
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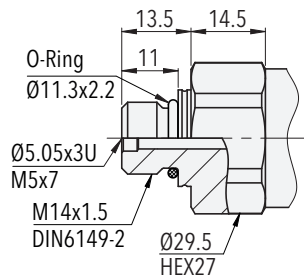
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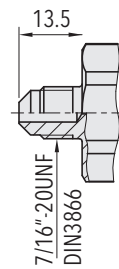
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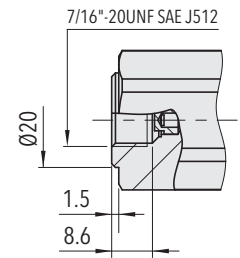
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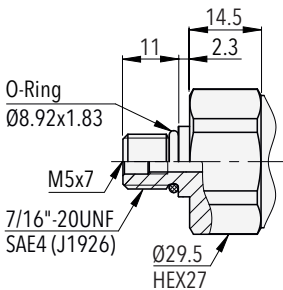
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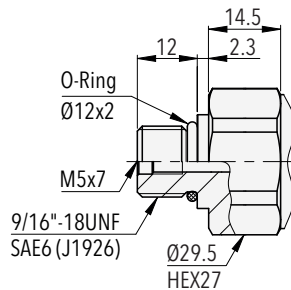
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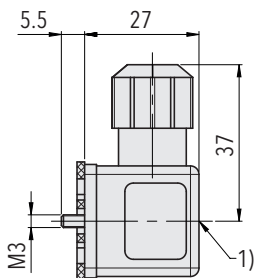
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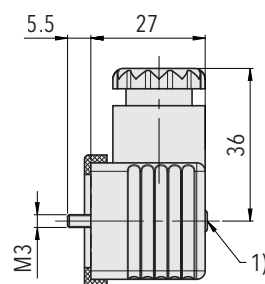
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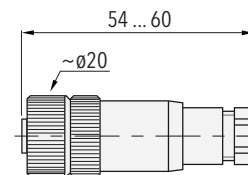
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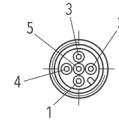


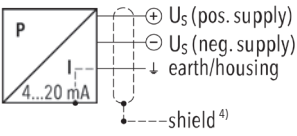
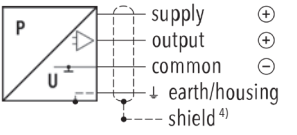
8287.XX.XXXX.XX.XX.33

1) Tightening torque 50 ... 60 Ncm

Electrical connection

Industrial standard EN175301-803A	M12x1, 5-pole	3 Way M MetriPack 1.5 sealed connector
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	05	35	51				
IP protection	IP65 ^{1) 2)}	IP67 ^{1) 2)}	IP67 ¹⁾				
Ambient temperature	-40°C ... +125°C	-40°C ... +125°C	-40°C ... +125°C				
UL-rated ambient temperature	-20°C ... +80°C	-20°C ... +80°C	-20°C ... +80°C				
Pin assignment type code	92	94	G9	H1	E4		
Output signal 8287.xx.xxxx.xx.19	2 1 Earth	1 2 Earth	4 1 5	1 3 5	1 3 4	1 2 5	1 2 3
							
Pin assignment type code	98	97		E8		99	
Output signal 8287.xx.xxxx.xx.14/16/17/22/23	2 3 1 Earth	3 1 2 Earth	1 3 2 Earth	2 4 3 5	1 3 2 5	1 3 2 3	1 2 3
							

¹⁾ Provided female electrical plug is mounted according to instructions

²⁾ Ventilation via male electric plug/cable end

⁴⁾ Only cable versions or female electrical plug with shield connection

i Empty 'Pin Assignment Type Code' field: Default pinout

Electrical connection

	MIL-C 26482	DIN 72585 ²⁾ Code 1
	02	25 ³⁾
IP protection	IP67 ^{1) 2)}	IP69K ¹⁾
Ambient temperature	-40°C ... +125°C	-40°C ... +125°C
UL-rated ambient temperature	-20°C ... +80°C	-20°C ... +80°C
Pin assignment type code		
Output signal 8287.xx.xxxx.xx.19		
	A B E	
Pin assignment type code		
Output signal 8287.xx.xxxx.xx.14/16/17/22/23		
		1 2 4 3

¹⁾ Provided female electrical plug is mounted according to instructions

²⁾ Ventilation via male electric plug/cable end

³⁾ Only for output signal 23

⁴⁾ Only cable versions or female electrical plug with shield connection

i Empty 'Pin Assignment Type Code' field: Default pinout

Electrical connection

	Cable ²⁾	Cable ²⁾	Cable ²⁾
	24	22	08
IP protection	IP68, max. 3m	IP68, max. 3m	IP68, max. 3m
Ambient temperature	-20°C ... +70°C	-5°C ... +60°C	-20°C ... +125°C
UL-rated ambient temperature	-20°C ... +70°C	-5°C ... +60°C	-20°C ... +80°C
Pin assignment type code			
Output signal 8287.xx.xxxx.xx.19 	White Brown Yellow	White Brown Yellow	Red Black Green
Pin assignment type code			
Output signal 8287.xx.xxxx.xx.14/16/17/22/23 for DC 	White Green Brown Yellow	White Green Brown Yellow	Red White Black Green

²⁾ Ventilation via male electric plug/cable end

⁴⁾ Only cable versions or female electrical plug with shield connection

i Empty 'Pin Assignment Type Code' field: Default pinout

Reliable quality

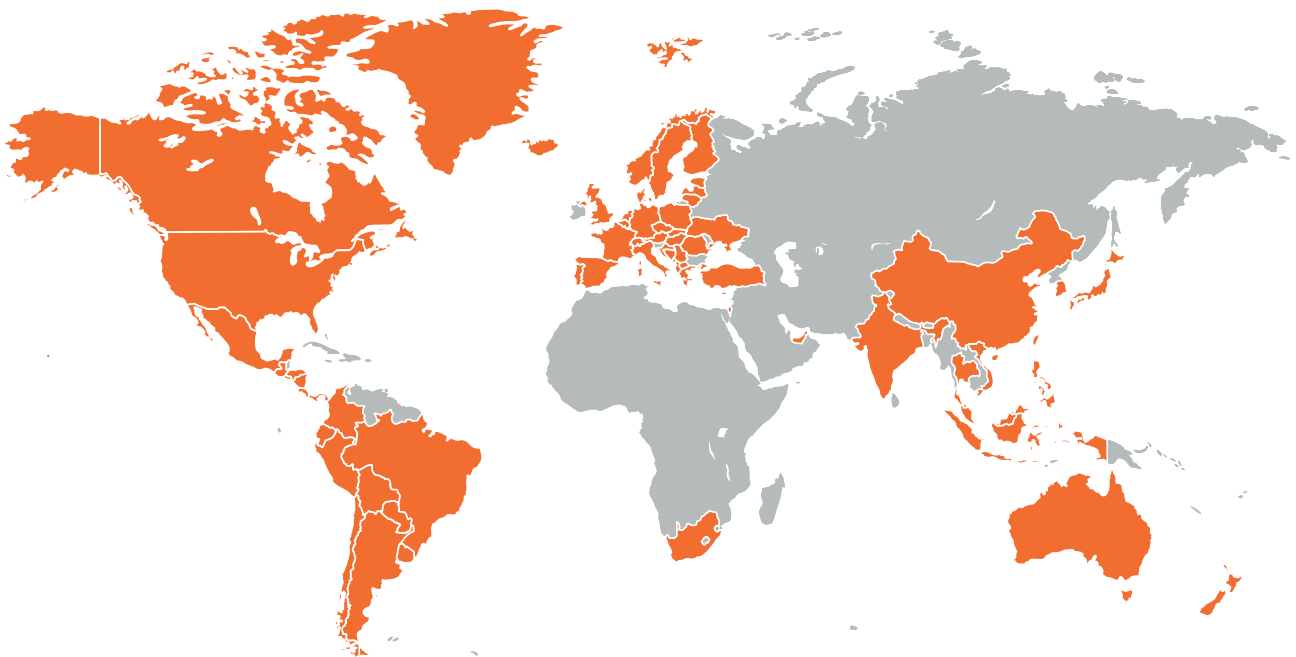
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then manufactured in the production facilities in Switzerland, Germany, the Czech Republic, and India. Strict quality management according to ISO 9001 and ISO 14001 ensures that Trafag products meet the required quality and sustainability standards.

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Headquarters Switzerland

Trafag AG
Industriestrasse 11
8608 Bubikon (Switzerland)
+41 44 922 32 32
trafag@trafag.com
www.trafag.com

Coordinates of representatives can be found at www.trafag.com/trafag-worldwide



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Gas density