

RAILWAY PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The EPR pressure transmitter was specifically designed for the high demand of the railway industry and offers reliable and accurate pressure measurement over a wide temperature range. Its excellent long-term stability is based on the leading thin-film-on-steel sensor technology from Trafag.



Applications

- Railways



Features

- Dielectrical strength: 710 VDC, meets EN 50155 (Railways)
- Compact design
- Good temperature resistance
- Different accuracy classes
- Completely welded steel sensor system without additional seals

Technical Data			
Measuring principle	Thin film on steel	Media temperature	-40°C ... +125°C
Measuring range	0 ... 2.5 to 0 ... 600 bar	Ambient temperature	-40°C ... +125°C
Output signal	4 ... 20 mA	Approval / conformity	EN 50155 (Railway) EN 45545-2 (Fire protection)
Accuracy @ 25°C typ.	± 0.5 % FS typ. ± 0.3 % FS typ.		

04/2018

Data sheet H72319a

Subject to change

Ordering information/type code

				8283 . 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 ... 5000	12500	21750	H4			
					0 ... 7500	18750	29000	H6			
Sensor	Relative pressure, accuracy: 0.5 %; Material pressure connection and housing: 1.4542 (AISI630)						25				
	Relative pressure, accuracy: 0.3 %; Material pressure connection and housing: 1.4542 (AISI630)						23				
Pressure connection	G1/4" female ²⁾						10				
	G1/4" male (Seal)						17				
	R1/4" male, DIN3858 ²⁾						19				
	G1/2" male (Manometer) ²⁾						11				
	1/4" NPT male						30				
	1/2" NPT male ²⁾						51				
	M14x1.5 male DIN6149-2 ²⁾						31				
	7/16"-20UNF male, DIN3866 ^{2) 4)}						18				
	7/16"-20UNF male SAE (J1926-3) ^{2) 5)}						42				
7/16"-20UNF female SAE J512 with valve opener ⁴⁾						24					
Electrical connection	Male electrical plug EN 175301-803-A, Mat. PA						05				
	Male electrical plug M12x1, 5-pole, Mat. PBT						35				
	Cable PUR, IP68 (Screwed cable gland PA 6-3), -20°C ... +70°C ^{6) 7) 9)}						24				
	Cable PVC, IP68 (Screwed cable gland PA 6-3), -5°C ... +60°C ^{6) 7) 8) 9)}						22				
	Cable Raychem, IP68 (Screwed cable gland PA 6-3), -20°C ... +100°C ^{6) 7) 8) 9)}						08				
Output signal	Signal output	Load resistance	I (supply)	U (supply)							
	4 ... 20 mA	(U _{supply} -9 V) / 20 mA		9 ... 32 VDC					19		
Accessories	Seal FPM, -18°C ... +125°C ³⁾						61				
	Seal EPDM, -40°C ... +125°C ³⁾						63				
	Seal NBR, -25°C ... +100°C ³⁾						83				
	Pressure peak damping element ø 1.0 mm (for pressure connections 17, 19, 30, 31, 51)						40				
	Pressure peak damping element ø 0.4 mm (for pressure connections 17, 19, 30, 31, 51)						44				
	Female electrical connector EN 175301-803-A (DIN43650-A)						58				
	Special electrical connection: Pin 1 +, Pin 2 - (only for output signal 4 ... 20 mA and male electrical plug EN175301-803-A / DIN43650-A)						92				
	Housing nut for electrical connection EN175301-803-A (DIN43650-A) secured with Loctite (max. 85°C)						L9				

¹⁾ Customized pressure ranges upon request

²⁾ Upon request

³⁾ Only with pressure connection 17 (G1/4")

⁴⁾ Max. allowable pressure range 60 bar at 120 bar overpressure

⁵⁾ According to norm SAE J1926-3, max. 35 MPa

⁶⁾ Cable length see accessories (max. length 50 m, in 5-meter sections)

⁷⁾ IP68, max. 3 m, Media +10°C ... +35°C

⁸⁾ Cable length max. 3 m, for pressure ranges ≤ 16 bar

⁹⁾ Not according to standard EN 45545-2

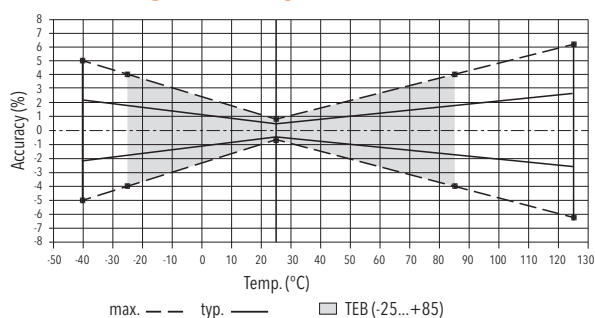
Specifications		
Electrical Data	Output / supply voltage	4 ... 20 mA: 24 (9...32) VDC
	Rise time	Typ. 1 ms / 10 ... 90 % nominal pressure
	Switch-on-delay	100 ms
	Inverse-polarity protection, short-circuit strength @ 25°C during 5 min.	4 ... 20 mA: bis $U_s = 32$ VDC
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +125°C
	Protection ¹⁾	IP65, IP67, IP68
	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 EN50121-3-2
	Immunity	EN/IEC 61000-6-2 EN50121-3-2 ²⁾
Mechanical Data	Sensor (wetted parts)	1.4542 (AISI630)
	Pressure connection (wetted parts)	1.4542 (AISI630)
	Housing	1.4542 (AISI630)
	Sealing	FPM/EPDM/NBR
	Male electrical plug	See ordering information
	Weight	appr. 80 ... 110 g
	Mounting torque	25 Nm

¹⁾ See electrical connection

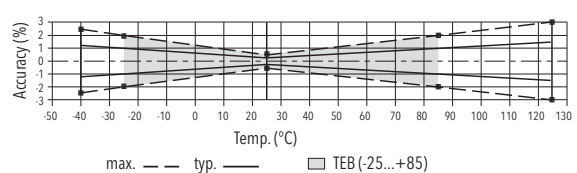
²⁾ Surge voltage on shield, shield connected on both sides

Accuracy			
		Measuring accuracy 0.5 % Ordering No. 25	Measuring accuracy 0.3 % Ordering No. 23
TEB @ -25 ... +85°C	[% FS typ.]	± 1.75	± 1.0
Accuracy @ +25°C	[% FS typ.]	± 0.5	± 0.3
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.2
TC zero point and span	[% FS/K typ.]	± 0.03	± 0.01
Long term stability 1 year @ +25°C	[% FS typ.]	± 0.1	± 0.1

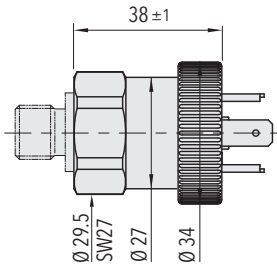
Measuring accuracy 0.5 %



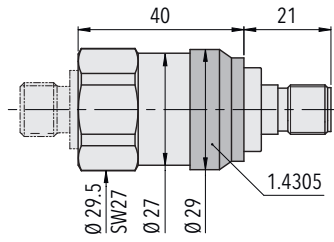
Measuring accuracy 0.3 %



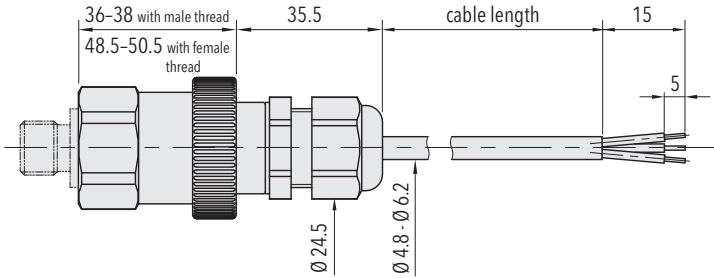
Dimensions



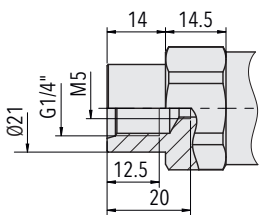
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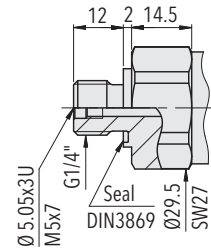
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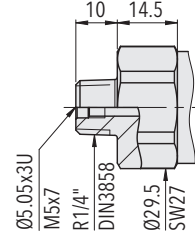
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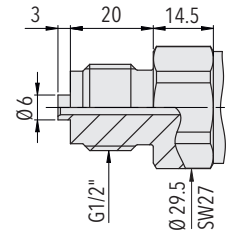
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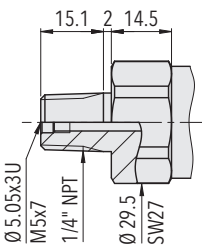
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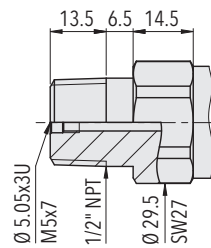
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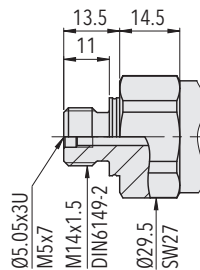
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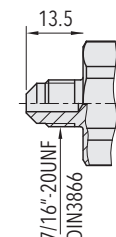
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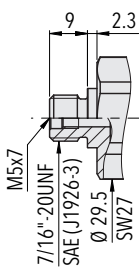
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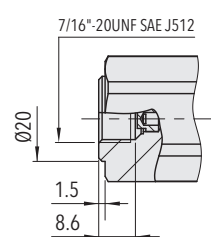
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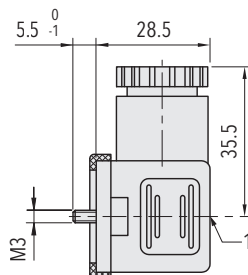
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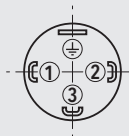
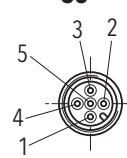


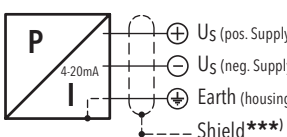
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1) Tightening torque 50...60Ncm

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Electrical connection

		Protection / electrical connection			
		IP65 ^{*)}	IP67 ^{*)}	IP68 max. 3 m	IP68 max. 3 m
		Industrial standard EN175301-803A ^{**)}	M12x1 ^{**)} 5-pole	Cable ^{**)} / ^{****)}	Cable ^{**)} / ^{****)}
		05	35	24/22	08
					
Output signal		Standard	92		
		2 1 ⊕	1 2 ⊕	4 1 5	white brown yellow
8283.XX.XXXX.XX.19					

^{*)} Provided female connector is mounted according to instructions

^{**)} Ventilation via male electric plug/cable end

^{***)} Only cable versions or female electrical plug with shield connection

^{****)} Not according to standard EN 45545-2

Additional specifications railways			
Environmental conditions	Cold	EN 60068-2-1	Ab: -40°C, 2 h (not in operation) Ae: -40°C, 1 h (in operation)
	Dry heat	EN 60068-2-2	Be: 85°C, 6 h (in operation)
	Damp heat, cyclical	EN 60068-2-30	Db: 55°C, variant 1, 2 cycles (2 x 24 h)
	Vibration and shock	EN 61373	Vibration: category 3 ¹⁾ Shock: category 3 ¹⁾
	Dielectrical strength	EN 50155	710 VDC
	Resistance of insulation	EN 50155	>100 MΩ, 500 VDC
	Behavior in case of fire (only electrical connections 05, 35)	EN 45545-2	Weight: < 10 g Surface: < 0.2 m ²
Supply	Nominal voltage	EN 50155	24 V
	Interruptions of the voltage supply	EN 50155	Class S1
	Switching between two supply voltages	EN 50155	Class C1

¹⁾ Male electrical plug EN 175301-803-A, cat. 2

Additional information		
Documents	Data sheet	www.trafag.com/H72319
	Instructions	www.trafag.com/H73317
	Flyer	www.trafag.com/H70601