

INDUSTRIAL PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The industrial pressure transmitter NAT 8252 features the extremely robust and stable thin-film-on-steel sensor element from its well-proven predecessor NAT 8251. In combination with the new inhouse developed ASIC TX 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
- HVAC
- Refrigeration
- Process technology
- Water treatment

Features

- Smallest design
- Completely welded steel sensor system without additional seals
- Excellent long-term stability
- High resistance to over pressure

Technical Data			
Measuring principle	Thin film on steel	Accuracy @ 25°C typ.	± 0.5 % FS typ.
Measuring range	0 ... 2.5 to 0 ... 600 bar 0 ... 30 to 0 ... 7500 psi	Media temperature	-40°C ... +125°C
Output signal	4 ... 20 mA, 0.5 ... 4.5 VDC, 0 ... 5 VDC, 1 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, 0.1 ... 10.1 VDC, 0.5 ... 4.5 VDC ratiometric	Ambient temperature	-40°C ... +125°C (Cable PVC 22: -5°C ... +60°C) (Cable PUR 24: -40°C ... +70°C)

06/2016

Data sheet H72303I

Subject to change

Ordering information/type code

				8252 . XX	XX	XX	XX	XX	XX	
Measuring range ¹⁾	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]							
	0 ... 2.5	7.5	50	75						
	0 ... 4	12	60	76						
	0 ... 6	18	100	77						
	0 ... 10	30	200	78						
	0 ... 16	48	200	79						
	0 ... 25	75	300	80						
	0 ... 40	120	300	81						
	0 ... 60	180	400	82						
	0 ... 100	300	500	83						
	0 ... 160	480	750	85						
	0 ... 250	750	1000	74						
	0 ... 400	1000	2000	84						
	0 ... 600	1500	2500	86						
	Option 5P:	Fivefold overpressure								
	0 ... 2.5	12.5	60	55						
	0 ... 4	20	100	56						
	0 ... 6	30	200	57						
	0 ... 10	50	200	58						
	0 ... 16	80	300	59						
	0 ... 25	125	300	60						
	0 ... 40	200	400	61						
	0 ... 60	300	500	62						
0 ... 100	500	750	63							
0 ... 160	800	1000	65							
Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]								
0 ... 30	90	700	G5							
0 ... 50	150	850	G6							
0 ... 100	300	1450	G7							
0 ... 150	450	2500	G8							
0 ... 200	600	2500	GA							
0 ... 250	750	2500	G9							
0 ... 300	900	4000	HA							
0 ... 400	1200	4000	H0							
0 ... 500	1500	4000	H1							
0 ... 1000	3000	5000	H2							
0 ... 1500	4500	7000	H3							
0 ... 2000	6000	10000	H5							
0 ... 3000	9000	14500	G4							
0 ... 5000	12500	21750	H4							
0 ... 7500	18750	29000	H6							
Sensor	Relative pressure								25	
Pressure connection	G1/4" male, seal: DIN 3869 (accessories 61/63/83)								17	
	1/4" NPT male								30	
	7/16"-20UNF female SAE J512 with valve opener ⁴⁾								24	
	7/16"-20UNF SAE4 male, seal: accessory 61 ⁸⁾								42	
	R1/4" male ISO 7-1 (DIN 2999) ⁵⁾								19	
	R1/8" male ISO 7-1 (DIN 2999) ⁵⁾								16	
	M10x1 male								32	
	M12x1.5 male (DIN EN ISO 9974-2), upon request								49	
Electrical connection	Male electrical plug, industrial standard, contact distance 9.4 mm, Mat. PA								01	
	Male electrical plug M12x1, 4-pole, Mat. PA								32	
	Male electrical plug M12x1, 5-pole, Mat. PA								35	
	Cable IP67, Mat. PVC ⁷⁾								22	
	Cable IP67, Mat. PUR ⁷⁾								24	
	Cable IP67, Mat. EPD Raychem FDR25 ⁷⁾								08	
Output signal	Signal output	Load resistance	I (supply)	U (supply)						
	4 ... 20mA	See graphic		24 (9 ... 32) VDC					19	
	0.5 ... 4.5 VDC	≥ 5.0 kΩ to U _s	≤ 20 mA	24 (9 ... 32) VDC					20	
	0 ... 5 VDC	≥ 5.0 kΩ to U _s	≤ 20 mA	24 (9 ... 32) VDC					14	
	1 ... 5 VDC	≥ 5.0 kΩ to U _s	≤ 20 mA	24 (9 ... 32) VDC					25	
	1 ... 6 VDC	≥ 5.0 kΩ to U _s	≤ 20 mA	24 (9 ... 32) VDC					16	
	0 ... 10 VDC	≥ 5.0 kΩ to U _s	≤ 15 mA	24 (15 ... 32) VDC					17	
	0.1 ... 10.1 VDC	≥ 5.0 kΩ to U _s	≤ 15 mA	24 (15 ... 32) VDC					13	
	0.5 ... 4.5 VDC ratiometric	≥ 5.0 kΩ to U _s	≤ 10 mA	5 (4.75 ... 5.25) VDC					23	

Accessories	Female electrical plug M12x1, 5-pole ²⁾	33
	Female electrical connector industrial standard ³⁾	34
	Pressure peak damping element ø 1.0 mm ⁶⁾	40
	Pressure peak damping element ø 0.4 mm ⁶⁾	44
	Seal FPM, -18°C ... +125°C	61
	Seal EPDM, -40°C ... +125°C	63
	Seal NBR, -25°C ... +100°C	83
	Special electrical connection: Pin 2 +, Pin 3 ground, Pin 4 - (only for output signal 19 and male electrical plug 01, industrial standard)	90
	Special electrical connection: Pin 1 out, Pin 2 +, Pin 3 ground, Pin 4 - (only for output signals 14, 16, 17, 23 and male electrical plug 01, industrial standard)	91
	Special electrical connection: Pin 1 +, Pin 2 Ground, Pin 3 -, Pin 4 Out (only for output signals 14, 16, 17, 23 and male electrical plug 32, M12x1, 4-pole)	96
	Special electrical connection: Pin 1 +, Pin 2 -, Pin 4 ground (only for output signal 19 and male electrical plug 32, M12x1, 4-pole)	E1
	Special electrical connection: Pin 1 +, Pin 2 -, Pin 3 out, Pin 4 ground (only for output signals 14, 16, 17, 23 and male electrical plug 32, M12x1, 4-pole)	E2
	Cable length 0.5 m	EM
	Cable length 1.0 m	1M
	Cable length 2.0 m	2M

¹⁾ Customized pressure ranges upon request

²⁾ For electrical connections 32 and 35

³⁾ For electrical connection 01

⁴⁾ Max. allowable overpressure 120 bar

⁵⁾ Max. allowable overpressure 500 bar

⁶⁾ Only for pressure connections 17, 30, 32

⁷⁾ Cable length see accessories

⁸⁾ According to norm J1926, max. 35 MPa

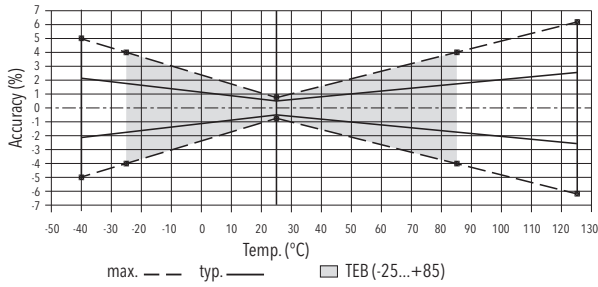
Standard products (extra short lead time)

Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Supply [VDC]	Accuracy @ 25°C typ. [%]
NAT2.5A	8252 75 2517 01 0000 0000 19 34 44 61	0 ... 2.5	7.5	9 ... 32	±0.5
NAT4.0A	8252 76 2517 01 0000 0000 19 34 44 61	0 ... 4	12	9 ... 32	±0.5
NAT6.0A	8252 77 2517 01 0000 0000 19 34 44 61	0 ... 6	18	9 ... 32	±0.5
NAT10.0A	8252 78 2517 01 0000 0000 19 34 44 61	0 ... 10	30	9 ... 32	±0.5
NAT16.0A	8252 79 2517 01 0000 0000 19 34 44 61	0 ... 16	48	9 ... 32	±0.5
NAT25.0A	8252 80 2517 01 0000 0000 19 34 44 61	0 ... 25	75	9 ... 32	±0.5
NAT40.0A	8252 81 2517 01 0000 0000 19 34 44 61	0 ... 40	120	9 ... 32	±0.5
NAT100.0A	8252 83 2517 01 0000 0000 19 34 44 61	0 ... 100	300	9 ... 32	±0.5
NAT250.0A	8252 74 2517 01 0000 0000 19 34 44 61	0 ... 250	750	9 ... 32	±0.5
NAT400.0A	8252 84 2517 01 0000 0000 19 34 44 61	0 ... 400	1000	9 ... 32	±0.5
NAT600.0A	8252 86 2517 01 0000 0000 19 34 44 61	0 ... 600	1500	9 ... 32	±0.5
NAT2.5V	8252 75 2517 01 0000 0000 17 34 44 61	0 ... 2.5	7.5	15 ... 32	±0.5
NAT4.0V	8252 76 2517 01 0000 0000 17 34 44 61	0 ... 4	12	15 ... 32	±0.5
NAT6.0V	8252 77 2517 01 0000 0000 17 34 44 61	0 ... 6	18	15 ... 32	±0.5
NAT10.0V	8252 78 2517 01 0000 0000 17 34 44 61	0 ... 10	30	15 ... 32	±0.5
NAT16.0V	8252 79 2517 01 0000 0000 17 34 44 61	0 ... 16	48	15 ... 32	±0.5
NAT25.0V	8252 80 2517 01 0000 0000 17 34 44 61	0 ... 25	75	15 ... 32	±0.5
NAT40.0V	8252 81 2517 01 0000 0000 17 34 44 61	0 ... 40	120	15 ... 32	±0.5
NAT100.0V	8252 83 2517 01 0000 0000 17 34 44 61	0 ... 100	300	15 ... 32	±0.5
NAT250.0V	8252 74 2517 01 0000 0000 17 34 44 61	0 ... 250	750	15 ... 32	±0.5
NAT400.0V	8252 84 2517 01 0000 0000 17 34 44 61	0 ... 400	1000	15 ... 32	±0.5
NAT600.0V	8252 86 2517 01 0000 0000 17 34 44 61	0 ... 600	1500	15 ... 32	±0.5

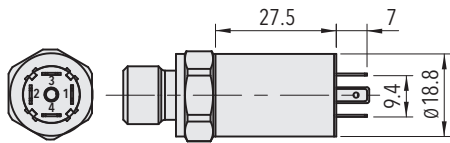
Specifications		
Accuracy	TEB typ. @ -25 ... +85°C	± 1.75 % FS typ.
	Accuracy @ 25°C typ.	± 0.5 % FS typ.
	NLH @ 25°C (BSL) typ.	± 0.2 % FS typ.
	TC zero point and span typ.	± 0.03 % .FS/K typ.
	Long term stability 1 year typ.	< ± 0.1 % FS typ.
Electrical Data	Output / supply voltage	4 ... 20 mA: 24 (9...32) VDC 0.5 ... 4.5 VDC: 24 (9...32) VDC 0 ... 5 VDC: 24 (9...32) VDC 1 ... 5 VDC: 24 (9...32) VDC 1 ... 6 VDC: 24 (9...32) VDC 0 ... 10 VDC: 24 (15...32) VDC 0.1 ... 10.1 VDC: 24 (15...32) VDC 0.5 ... 4.5 VDC ratiom., 10 ... 90% U _{supply} : 5 ± 0.25 VDC
	Rise time	typ. 1 ms/10...90 % nominal pressure
	Switch-on-delay	100 ms
	Inverse-polarity protection, short-circuit strenght @ 25°C during 5 min.	4...20 mA: to U _s = 32 VDC 0.5...4.5 VDC, 0...5 VDC, 1...5 VDC, 1...6 VDC, 0...10 VDC, 0.1...10.1 VDC: to U _s = 28 VDC 0.5...4.5 VDC ratiometric: to U _s = 14 VDC
	Environmental conditions	Media temperature
	Ambient temperature	-40°C ... +125°C (Cable PVC 22: -5°C ... +60°C) (Cable PUR 24: -40°C ... +70°C)
	Protection ¹⁾	IP65, IP67
	Humidity	Max. 95 % relative
	Vibration	15 g RMS (20...2000 Hz) 25 g sin (80...2000 Hz), 1 oct./min, (1x @ 25°C)
	Shock	50 g / 11 ms 100 g / 6 ms Male electrical plug M12x1 32, 35
EMC Protection	Emission	EN/IEC 61000-6-3
	Immunity	EN/IEC 61000-6-2
Mechanical Data	Sensor	1.4542 (AISI630)
	Housing / pressure connection	1.4301 (AISI304) / 1.4542 (AISI630)
	Sealing	FPM/EPDM/NBR
	Male electrical plug	See ordering information
	Weight	appr. 50 g
	Mounting torque	25 Nm

¹⁾ See electrical connection

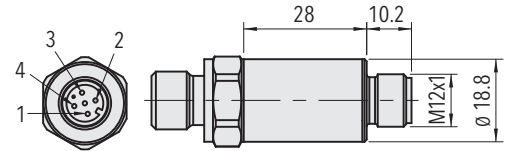
Measuring accuracy



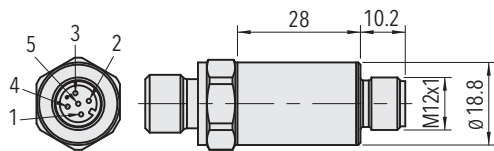
Dimensions



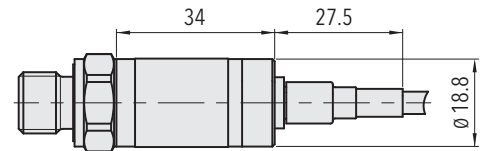
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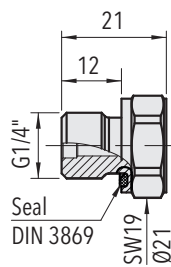
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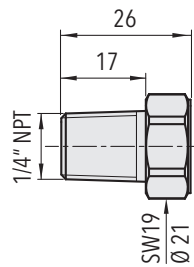
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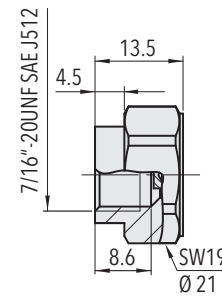
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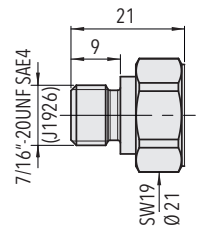
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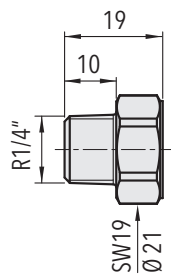
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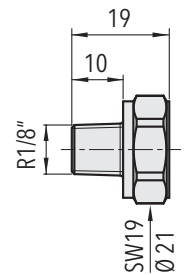
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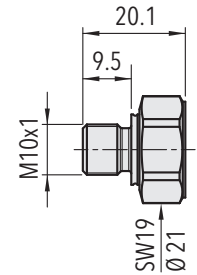
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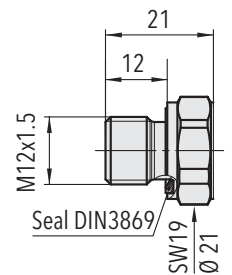
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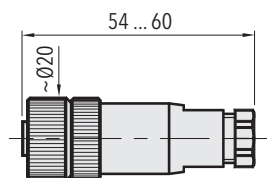
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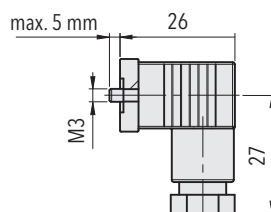
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8252.XX.XX49.XX.XX.XX


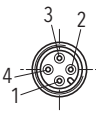
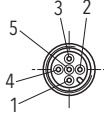

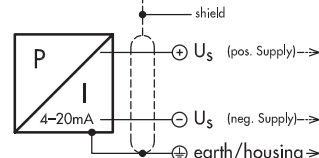
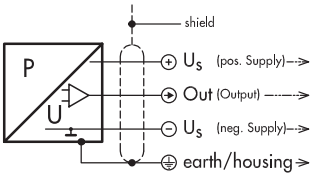


8252.XX.XXXX.XX.XX.33



8252.XX.XXXX.XX.XX.34

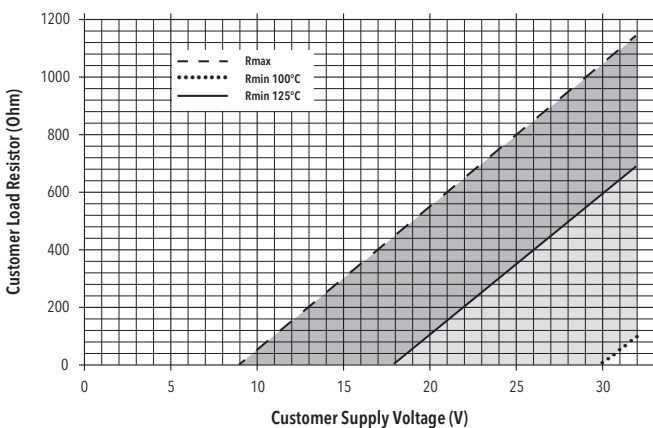
Electrical connection

		Protection / electrical connection								
		IP65 *)**)		IP67 *)**)			IP67**)	IP67**)		
		Industrial standard Contact distance 9.4 mm		M12x1			Cable	Cable		
		01		32		35		22/24	08	
										
Output signal	 <p>8252.XX.XXXX.XX.19</p>		90		E1					
		2	2	1	1	4	white	red		
		1	4	3	2	1	brown	black		
		4	3	4	4	5	yellow	green		
	 <p>8252.XX.XXXX.XX.13/14/16/17/20/ 23/25</p>		91	E3		96	E2			
		1	2	3	1	1	1	2	white	red
		2	1	1	2	4	3	4	green	white
		3	4	2	3	3	2	3	brown	black
		4	3	4	4	2	4	5	yellow	green

*) Provided female connector is mounted according to instructions

**) Ventilation via male electric plug/cable end

4...20mA: min./max resistor vs. supply voltage @ Pmax = 100%



Additional information

Documents

Data sheet	www.trafag.com/H72303
Instructions	www.trafag.com/H73303
Flyer	www.trafag.com/H70666