NAH 8253

Pressure Transmitter

Applications

- Test benches
- Railways
- Machine tools
- Hydraulics
- Process technology

Features

- Smallest design
- Accuracy classes 0.1 %, 0.15 %, 0.3 %
- Excellent temperature resistance
- Relative or absolute pressure measurement
- Optional: Dielectrical strength 500 VAC, meets EN 50155 (Railways)

Product description

For precise pressure measurement, Trafag's pressure transmitter NAH 8253 combines a compact design (hex 19) with very high accuracy. Offering excellent temperature resistance, relative and absolute pressure measurement, it ensures reliable performance in demanding environments.

EMC: 2014/30/EU

S.I. 2016 No. 1091

Conformity EN 50155

Technical Data

Measuring principle	Thin-film-on-steel
Measuring range	0 ... 2.5 to 0 ... 600 bar 0 ... 30 to 0 ... 7500 psi
Output signal	4 ... 20 mA, 0 ... 5 VDC, 1 ... 6 VDC, 0 ... 10 VDC, 0.5 ... 4.5 VDC ratiometric
Media temperature	-40°C ... +125°C
Ambient temperature	-40°C ... +125°C

Additional information

Data sheet	www.trafag.com/H72300
Flyer	www.trafag.com/H70670
Instructions	www.trafag.com/H73250
Accessories	www.trafag.com/H72258
Video	https://youtu.be/HSNlFPJKmaQ

NAH 8253

trafag sensors controls

Ordering information/Type code

									8253	XX	XX	XX	XX	XX	XX

Measuring range [1]

Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]	Code	Pressure-measurement-range [psi]	Over pressure [psi]	Burst pressure [psi]	Code
0 ... 2.5 [2]	5	50	**75**	0 ... 30 [2]	60	700	**G5**
0 ... 4	8	60	**76**	0 ... 50	100	850	**G6**
0 ... 6	12	100	**77**	0 ... 100	200	1450	**G7**
0 ... 10	20	200	**78**	0 ... 150	300	2500	**G8**
0 ... 16	32	200	**79**	0 ... 200	400	2500	**GA**
0 ... 25	50	300	**80**	0 ... 250	500	2500	**G9**
0 ... 40	80	300	**81**	0 ... 300	600	4000	**HA**
0 ... 60	120	400	**82**	0 ... 400	800	4000	**H0**
0 ... 100	200	500	**83**	0 ... 500	1000	4000	**H1**
0 ... 160	320	750	**85**	0 ... 1000	2000	5000	**H2**
0 ... 250	500	1000	**74**	0 ... 1500	3000	7000	**H3**
0 ... 400	800	1500	**84**	0 ... 2000	4000	10000	**H5**
0 ... 600	1000	2000	**86**	0 ... 3000	6000	14500	**G4**
				0 ... 5000	10000	21750	**H4**
				0 ... 7500	15000	29000	**H6**

Sensor

Sensor	Code
Relative pressure, accuracy: 0.3 % [3]	**23**
Relative pressure, accuracy: 0.15 %	**21**
Relative pressure, accuracy: 0.1 %	**24**
Absolute pressure, accuracy: 0.3 % [4] [5]	**43**
Absolute pressure, accuracy: 0.15 % [4] [5]	**41**
Absolute pressure, accuracy: 0.1 % [4] [5]	**44**

Pressure connection

Pressure connection	Code
G1/4" male (Seal)	**17**
1/4" NPT male	**30**
1/4" NPT female [6]	**13**
7/16"-20UNF male [4] [7]	**18**
7/16"-20UNF female, DIN3866 (valve opener) [4] [7]	**24**
7/16"-20UNF-2A male, SAE J1926-2 (Heavy Duty) [8]	**69**
9/16"-18UNF-2A male, SAE J1926-2 (Heavy Duty) [8]	**67**
3/8"-24UNF SAE3 male (J514) [6] [7]	**66**
R1/4" male, DIN2999 [6] [7]	**20**
M14x1.5 male DIN EN ISO 6149-2 [6] [7]	**31**

Electrical connection

Electrical connection	Code
Male electrical connector, industrial standard (contact distance 9.4 mm), Mat. PBT	**01**
Male electrical connector M12x1, 4-pole, Mat. PBT	**32**
Male electrical connector M12x1, 5-pole, Mat. PBT	**35**
Male electrical connector MIL-C 26482, 6-pole, metal	**02**
Cable Mat. EPD Raychem FDR25, IP67, 4 x 0.2 mm^2 [6]	**08**

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					8253	XX	XX	XX	XX	XX	XX
Output signal	**Output signal**	**Load resistance**	**I (supply)**	**U (supply)**							
	4 ... 20 mA	≤ (Usupply-9 V) / 20 mA		24 (9 ... 32) VDC							**19**
	0 ... 5 VDC	≥ 2.0 kΩ	≤ 10 mA	24 (9 ... 32) VDC							**14**
	1 ... 6 VDC	≥ 2.0 kΩ	≤ 10 mA	24 (9 ... 32) VDC							**16**
	0 ... 10 VDC	≥ 5.0 kΩ	≤ 10 mA	24 (15 ... 32) VDC							**17**
	0.5 ... 4.5 VDC	≥ 2.0 kΩ	≤ 10 mA	5 (4.5 ... 5.5) VDC ratiom.							**23**

Accessories	Female electrical plug M12x1, 5-pole, for electrical connections 32 and 35	**33**
	Female electrical plug industrial standard	**34**
	Meets EN 50155 (railways) dielectric strength: 500 VAC, 50 Hz [9) 10)]	**11**
	Pressure peak damping element ø 1.0 mm	**40**
	Pressure peak damping element ø 0.3 mm	**43**
	Pressure peak damping element ø 0.5 mm	**45**
	Cable length 0.5 m	**EM**
	Cable length 1.0 m	**1M**
	Cable length 2.0 m	**2M**
	Pin configuration, see table: Electrical connection	

[01)] Extended overpressure as well as customized pressure ranges upon request
[02)] Measuring accuracy 0.3 %
[03)] Please use the successor product NAH 8254 for accuracy 0.3 % and NAR 8258 for railway applications
[04)] max. allowable pressure range 40 bar
[05)] Absolute pressure measurement not available together with EN50155 (railways), accessory 11
[06)] Upon request, whereas minimum order quantities may apply
[07)] Only for relative pressure
[08)] Measuring range max. 630 bar according to SAE J1926-2 (Heavy Duty)
[09)] Only with output 19
[10)] Available for relative pressure trasmitter only: Sensors 21, 23, 24

Compatibility matrix pressure connector / damping / sealing

Code	Pressure connection	Ø 1.0 mm (Code 40)	Ø 0.3 mm (Code 43)	Ø 0.5 mm (Code 45)
17	G1/4" male, Seal: DIN 3869	✓	✓	✓
30	1/4" NPT male	✓	✓	✓
13	1/4"- 18 NPT female			
18	7/16"-20UNF male			
24	7/16"-20UNF female, SAE J512 with valve opener			
69	7/16"-20UNF-2A male, SAE J1926-2 (Heavy Duty)	✓	✓	✓
67	9/16"-18UNF-2A male, SAE J1926-2 (Heavy Duty)	✓	✓	✓
66	3/8"-24UNF SAE3 male (J514)			
20	R1/4" male, DIN2999	✓	✓	✓
31	M14x1.5 male DIN EN ISO 6149-2	✓	✓	✓

Specifications

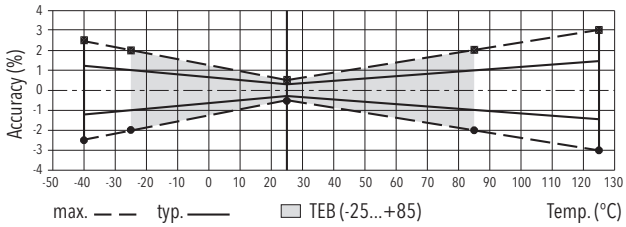
Electrical data	Output / supply voltage	4 ... 20 mA: 24 (9 ... 32) VDC 0 ... 5 VDC: 24 (9 ... 32) VDC 1 ... 6 VDC: 24 (9 ... 32) VDC 0 ... 10 VDC: 24 (15 ... 32) VDC 0.5 ... 4.5 VDC: 5 VDC ratiom.
	Power-on delay time	1 s
	Rise time of supply voltage	typ. 1 ms / 10 ... 90 % nominal pressure
	Resistance of insulation	>10 MΩ, 250 VDC
	Dielectric strength	250 VAC, 50 Hz
	Current limiting output signal	4 ... 20 mA: 24 mA (Overload)
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +125°C
	Storage temperature	-20°C ... +40°C
	Protection [1)]	min. IP65
	Humidity	max. 95 % relative
	Vibration	40 g (20 ... 2000 Hz)
	Shock	100 g / 11 ms
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)	Pressure ranges ≤ 250 bar: 1.4542 (AISI630) Pressure ranges > 250 bar: 1.4301 (AISI304)
	Housing	1.4301 (AISI304)
	Sealing	FKM 70 Sh
	Male electrical connector	See ordering information
	Weight	~ 50 g
	Mounting torque	25 Nm

[1)] See table: Electrical connection

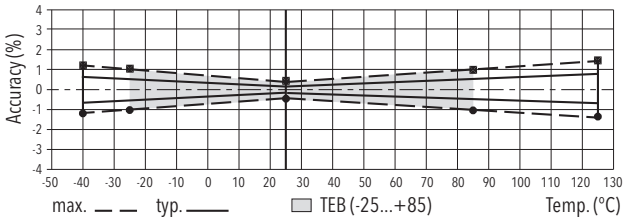
Accuracy

		Measuring accuracy 0.3 % Ordering No. 23/43	Measuring accuracy 0.15 % Ordering No. 21/41	Measuring accuracy 0.1 % Ordering No. 24/44
TEB @ -25 ... +85°C	[% FS typ.]	± 1.0	± 0.5	± 0.4 (0 ... 65°C)
TEB @ -25 ... +85°C; 0 ... 4 to 0 ... 100 bar	[% FS typ.]	-	-	± 0.4
TEB @ 0 ... +65°C; 0 ... 4 to 0 ... 100 bar	[% FS typ.]	-	-	± 0.25
Accuracy @ +25°C	[% FS typ.]	± 0.3	± 0.15	± 0.1
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.1	± 0.1
TC zero point and span	[% FS/K typ.]	± 0.01	± 0.002	± 0.002
Long term stability 1 year @ +25°C	[% FS typ.]	< ± 0.1	< ± 0.1	< ± 0.1

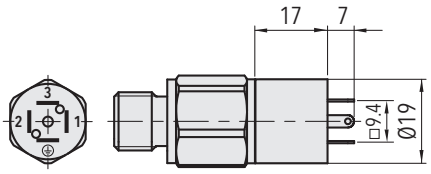
Measuring accuracy 0.3%



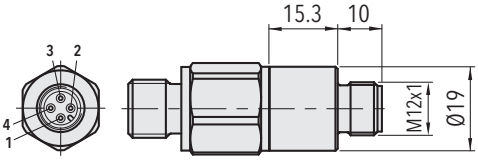
Measuring accuracy 0.15 %



Dimensions



8253.XX.XXXX.**01**.XX.XX



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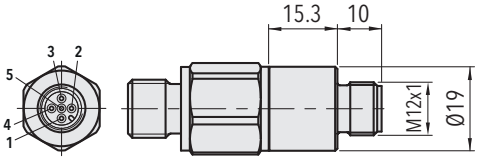

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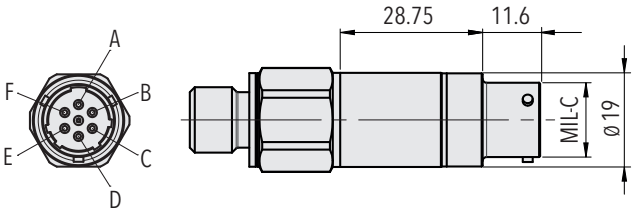

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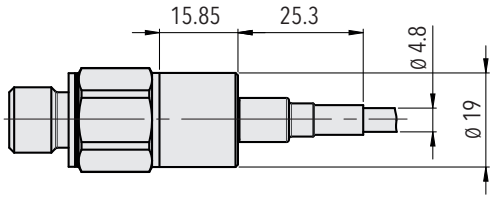

8253.XX.XXXX.**08**.XX.XX

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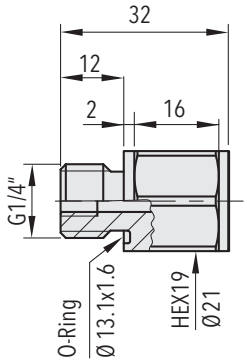
Dimensions



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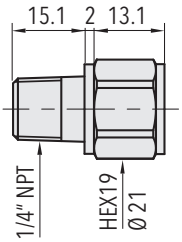

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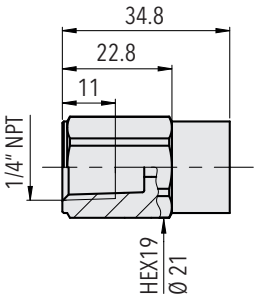

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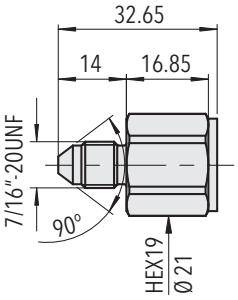

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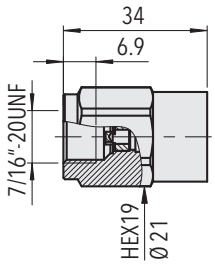

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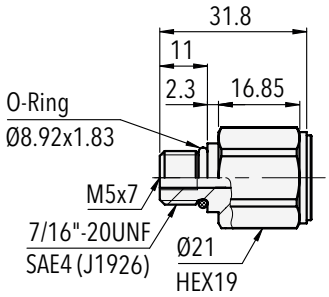

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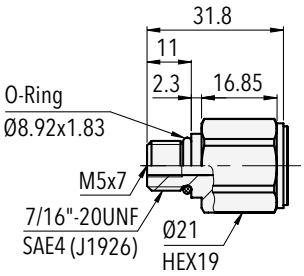

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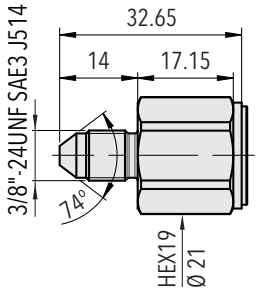

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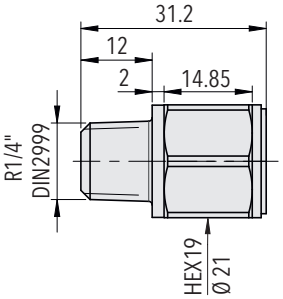

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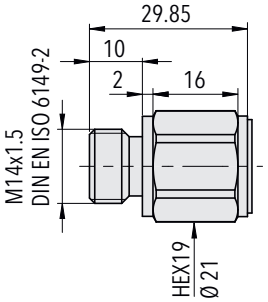

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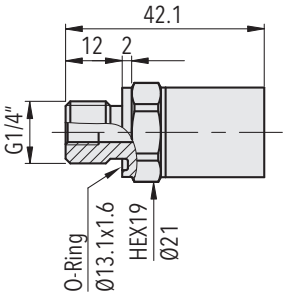

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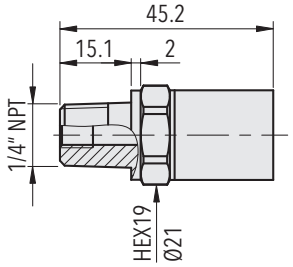

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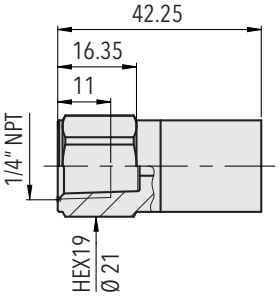

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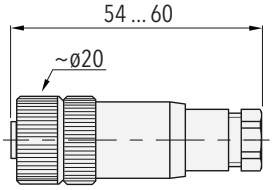

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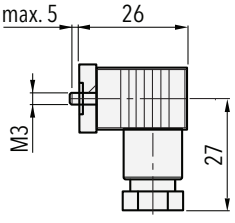

8253.XX.XXXX.XX.XX.**34**

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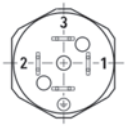
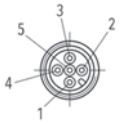
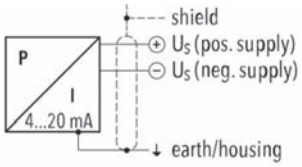
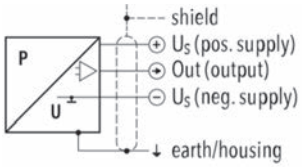
Electrical connection

	Industrial standard EN175301-803A	M12x1, 4-pole	M12x1, 5-pole
			
Electrical connection type code	01	32	35
IP protection	IP65 [1] [2]	IP67 [1]	IP67 [1]
Ambient temperature	-40°C … +125°C	-40°C … +125°C	-40°C … +125°C
Pin assignment type code			
Output signal **8253.xx.xxxx.xx.19** 	 2 1 Earth	 1 3 4	 4 1 5
Pin assignment type code		96	
Output signal **8253.xx.xxxx.xx.14/16/17/23** 	 1 2 3 Earth	1 2 3 4	1 4 3 2	 2 4 3 5

[1] Provided female electrical plug is mounted according to instructions
[2] Ventilation via male electric plug/cable end

Empty 'Pin Assignment Type Code' field: Default pinout

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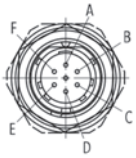
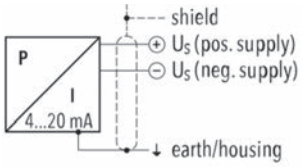
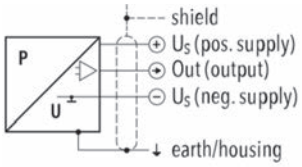
Electrical connection

	MIL-C 26482		Cable
			
Electrical connection type code	02		08
IP protection	IP67 [1) 2)]		IP67 [2)]
Ambient temperature	-40°C … +125°C		-40°C … +125°C
Pin assignment type code			
Output signal **8253.xx.xxxx.xx.19** 			Red Black – –
Pin assignment type code		F3	
Output signal **8253.xx.xxxx.xx.14/16/17/23** 	A B C/D E	A C B/D E	Red Green Black –

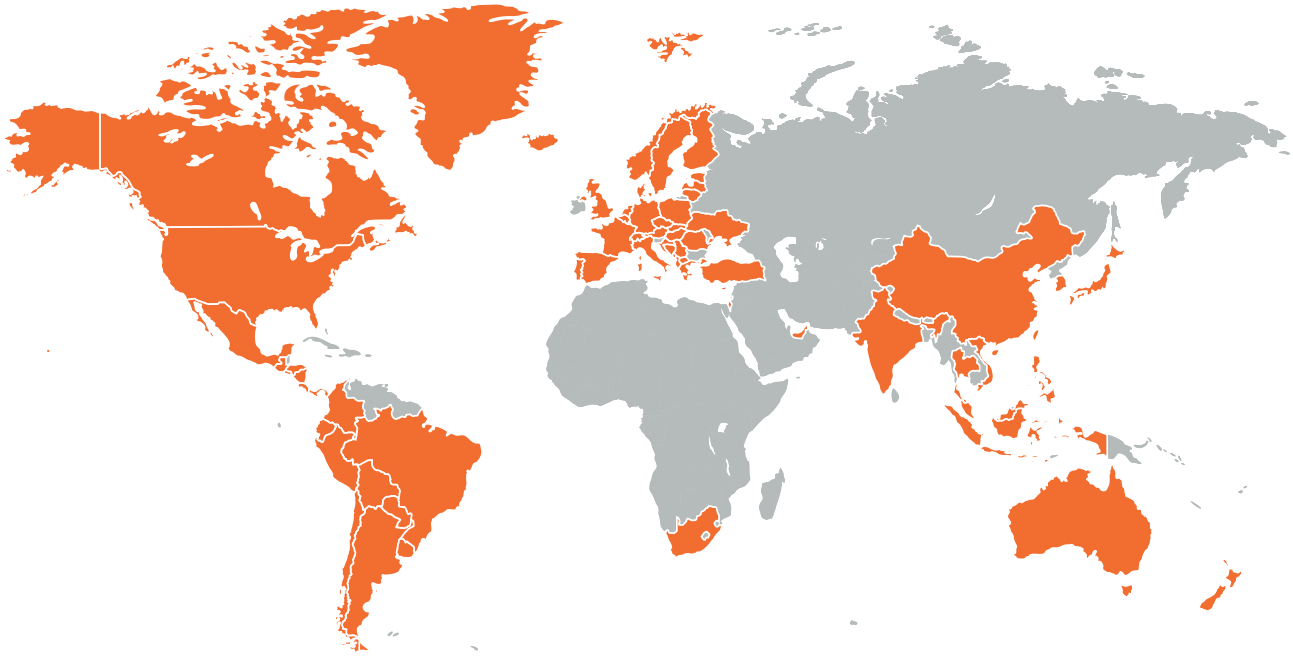
[1)] Provided female electrical plug is mounted according to instructions
[2)] Ventilation via male electric plug/cable end

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