

Low Pressure Transmitter



Product description

The very compact NSL low pressure transmitter is the only pressure transmitter in the market with thin-film-on-steel-membrane and pressure ranges down to 0 ... 200 mbar. This combination allows also for low pressure ranges accurate measurements with excellent longterm stability. Through the extraordinary high burst pressures up to 125 times nominal pressure the NSL is the first choice for critical applications.

Applications

- Shipbuilding
- Engine manufacturing
- Machine tools
- Process technology
- Water treatment
- Test benches

Features

- Smallest design
- Relative or absolute pressure measurement
- Excellent temperature resistance
- Improved vibration resistance
- Completely welded steel sensor system without additional seals

 EMC: 2014/30/EU

 S.I. 2016 No. 1091

 DNV EU RO Mutual Recognition

Technical Data

Measuring principle	Thin-film-on-steel
Measuring range	0 ... 0.2 to 0 ... 2.5 bar 0 ... 3 to 0 ... 30 psi
Output signal	4 ... 20 mA, 0 ... 5 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/H72302
 Flyer www.trafag.com/H70671
 Instructions www.trafag.com/H73250
 Accessories www.trafag.com/H72258

Ordering information/Type code

Ordering information/Type code				8257				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 ... 0.2 ²⁾	1.2	25	68	0 ... 3 ²⁾³⁾	18	350	F8					
	0 ... 0.4 ²⁾	1.2	25	69	0 ... 5 ²⁾³⁾	18	350	F9					
	0 ... 0.6 ²⁾	1.5	25	70	0 ... 10 ²⁾³⁾	25	350	G0					
	0 ... 1.0	2	25	71	0 ... 15 ³⁾	30	350	G1					
	0 ... 1.6	3.5	80	73	0 ... 25 ³⁾	50	1200	G3					
	0 ... 2.5	5	80	75	0 ... 30 ³⁾	70	1200	G5					
Sensor	Relative pressure, accuracy: 0.3 % ⁴⁾								23				
	Absolute pressure, accuracy: 0.3 %								43				
	Relative pressure, accuracy: 0.15 % ⁵⁾								21				
	Absolute pressure, accuracy: 0.15 % ⁵⁾								41				
Pressure connection	G1/4" male									17			
	1/4" NPT male									30			
	1/4" NPT female ⁶⁾									13			
	9/16"-18UNF male, SAE6 (J1926) ²⁾⁶⁾									61			
Electrical connection	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 ³⁾										02		
Output signal	Output signal	Load resistance		I (supply)		U (supply)							
	4 ... 20 mA	(U _{supply} -9 V) / 20 mA				24 (9 ... 32) VDC					19		
	0 ... 5 VDC ⁷⁾	≥ 2.0 kΩ		≤ 10 mA		24 (9 ... 32) VDC					14		
	0 ... 10 VDC ⁷⁾	≥ 5.0 kΩ		≤ 10 mA		24 (15 ... 32) VDC					17		
	0.5 ... 4.5 VDC ratiometric ⁷⁾	≥ 2.0 kΩ		≤ 10 mA		5 (4.5 ... 5.5) VDC					23		
Accessories	Female electrical plug M12x1, 5-pole, for electrical connections 32 and 35												33
	Female electrical plug industrial standard												34
	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
	Special electrical connection: Pin A +, Pin C Out, Pin B/D -, Pin E Ground (Pin B and D are connected) (only for output signals 14, 17, 23 and male electrical connector MIL-C 26482)												F3

¹⁾ Extended overpressure as well as customized pressure ranges upon request

²⁾ Only for relative pressure

³⁾ No ship approval DNV

⁴⁾ Please use the successor product NAH 8254 for accuracy 0.3% and NAE 8256 for shipbuilding applications

⁵⁾ Only for pressure ranges from 0.6 bar / 10 psi

⁶⁾ Upon request, whereas minimum order quantities may apply

⁷⁾ No ship approval

 Identical construction with higher pressure ranges: Data sheet No. H72250, H72300

Specifications

Electrical data	Output / supply voltage	4 ... 20 mA: 24 (9 ... 32) VDC 0 ... 5 VDC: 24 (9 ... 32) VDC 0 ... 10 VDC: 24 (15 ... 32) VDC 0.5 ... 4.5 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	25 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)	1.4542 (AISI630)
	Housing	1.4301 (AISI304)
	Sealing	FKM 70 Sh
	Male electrical connector	See ordering information
	Weight	~ 50 g
	Mounting torque	25 Nm (see table: Accuracy)

¹⁾ See table: Electrical connection

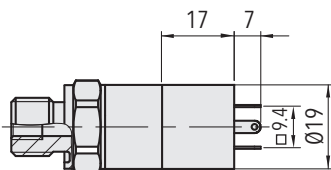
Compatibility matrix pressure connector / damping / sealing

Code	Pressure connection	Seal FKM (Code 61)	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" NPT female				
61	9/16"-18UNF male, SAE6 (J1926)	✓	✓	✓	✓

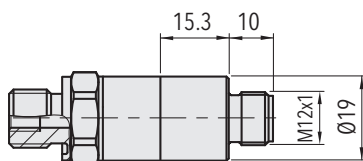
Accuracy

		Sensor 23/43 (0.3 %)					Sensor 21/41 (0.15 %)	
Pressure measuring range	[bar]	0 ... 0.2	0 ... 0.4	0 ... 0.6	0 ... 1.0	0 ... 1.6	0...0.6	0...1.6
	[psi]	0 ... 3	0 ... 5	0 ... 10	0 ... 15	0 ... 25 0 ... 30	0...1.0 0...2.5 0...10 0...15	0...2.5 0...25 0...30
NLH @ +25°C (+77°F) (BSL)	[% FS typ.]	0.2	0.2	0.2	0.2	0.2	0.1	0.1
TEB @ -25 ... +85°C (-13 ... +185°F)	[% FS typ.]	2	1.5	1	1	1	0.5	0.5
Accuracy @ +25°C (+77°F)	[% FS typ.]	0.8	0.5	0.3	0.3	0.3	0.15	0.15
Long term stability 1 year @ +25°C (+77°F)	[% FS typ.]	0.3	0.15	0.1	0.1	0.1	0.1	0.1
TC zero point and span	[% FS/K typ.]	0.02	0.015	0.01	0.01	0.01	0.002	0.002
Mounting dependency with 180° rotation (Vibration and shock: multiply this value with number of g)	[% FS typ.]	0.25	0.13	0.09	0.05	< 0.05	0.05	< 0.05
Error mounting torque @ 25 Nm	[% FS typ.]	0.25	0.13	0.09	0.05	0.05	0.05	0.05

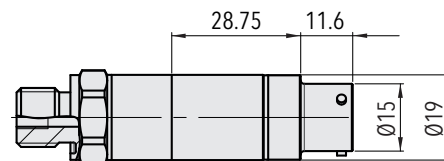
Dimensions



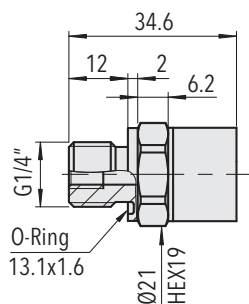
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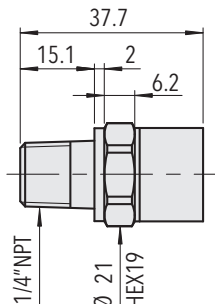
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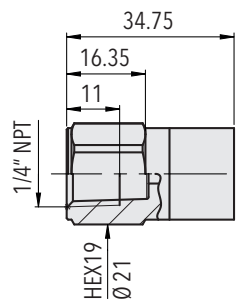
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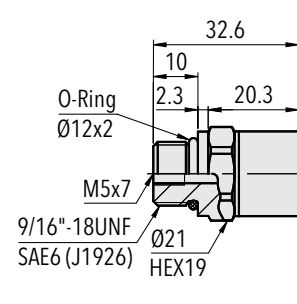
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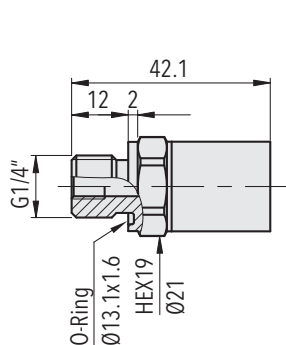
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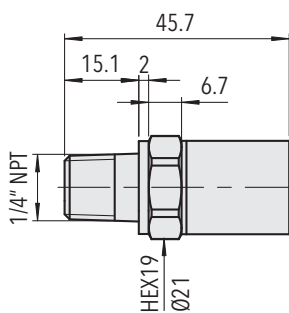
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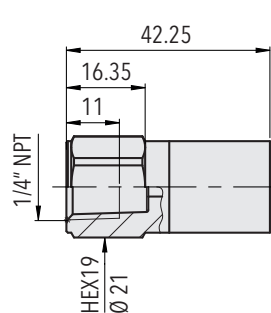
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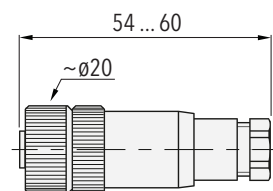
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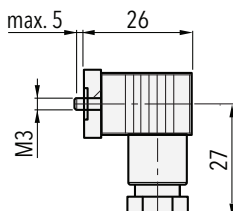
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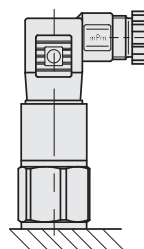
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8257.XX.XXXX.XX.XX.33

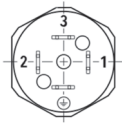
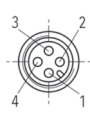
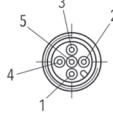
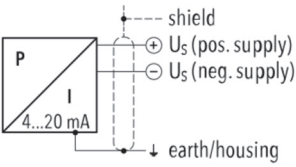
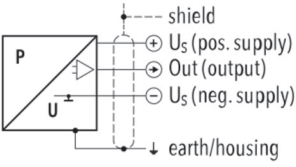


8257.XX.XXXX.XX.XX.34



Recommended mounting position
(Mounting dependency with 180°
rotation see table: Accuracy)

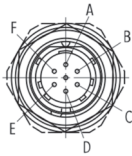
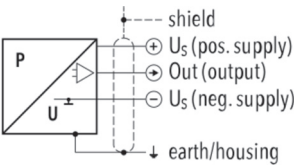
Electrical connection

	Industrial standard EN175301-803A	M12x1, 4-pole	M12x1, 5-pole
			
Electrical connection type code	01	32	35
IP protection	IP65 ¹⁾	IP67 ¹⁾	IP67 ¹⁾
Ambient temperature	-40°C ... +80°C	-40°C ... +125°C	-40°C ... +125°C
Not UL-listed	Not UL-listed	Not UL-listed	Not UL-listed
Pin assignment type code			
Output signal 8257.xx.xxxx.xx.19 	2 1 Earth	1 3 4	4 1 5
Pin assignment type code			
Output signal 8257.xx.xxxx.xx.14/17/23 	1 2 3 Earth	1 2 3 4	2 4 3 5

¹⁾ Provided female electrical plug is mounted according to instructions

 Empty 'Pin Assignment Type Code' field: Default pinout

Electrical connection

	MIL-C 26482	
		
Electrical connection type code	02	
IP protection	IP67 ^{1) 2)}	
Ambient temperature	-40°C ... +125°C	
Not UL-listed	Not UL-listed	
Pin assignment type code		F3
Output signal 8257.xx.xxxx.xx.14/17/23 	A B C/D E	A C B/D E

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

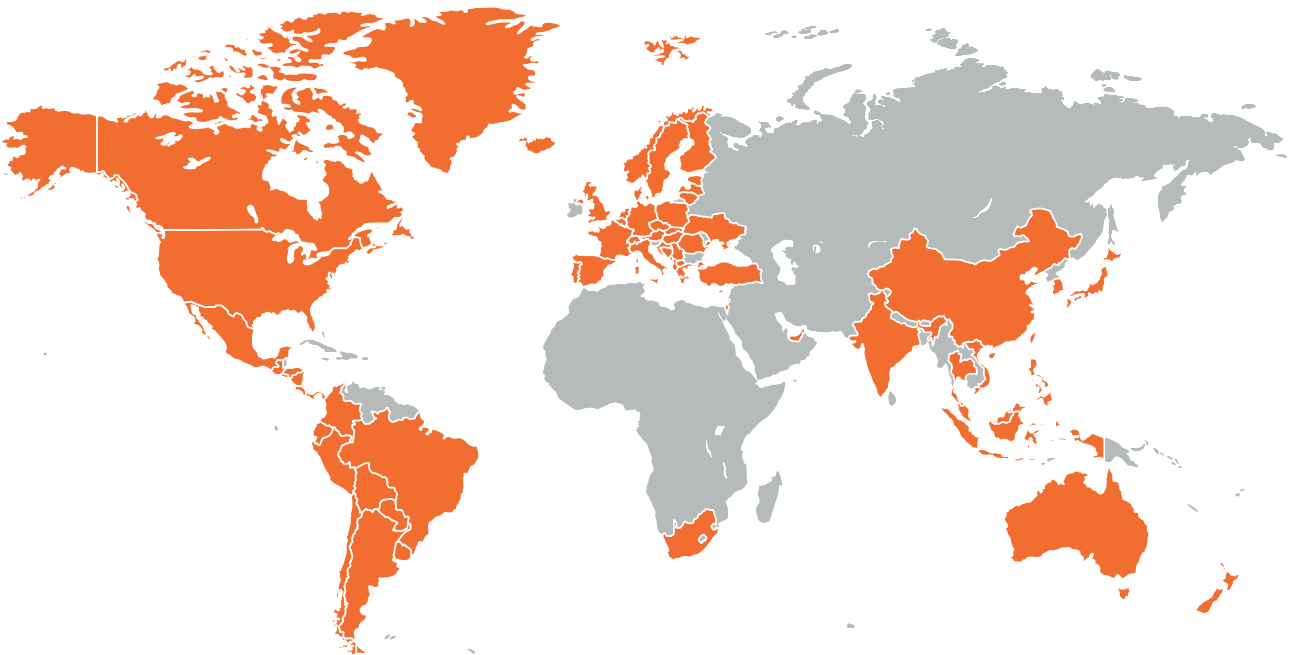
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Trafag develops, produces and distributes robust, reliable and precise instruments for monitoring pressure, temperature and gas density.

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

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Pressure transmitters



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Mechanical pressure switches



Pressure gauge



Thermostats



Temperature transmitters



Gas density