

# CANOPEN MINIATURE PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The CANopen miniature pressure transmitter CMP 8271 is designed for harsh environments in demanding applications like mobile hydraulics. The compact and well-proven design and the wide range of options makes it the preferred choice for cost-effective OEM solutions.

CANopen



## Applications

- Hydraulics
- Machine tools
- Engine manufacturing
- Process technology

## Features

- Small and rugged construction
- CANopen bus protocol DS301/DS404 supports CAN 2.0A/B
- LSS (DS 305 V2.0)
- Optional: 5-fold overpressure resistance

Technical Data			
Measuring principle	Thin-film-on-steel	Accuracy @ 25°C typ.	± 0.5 % FS typ. ± 0.3 % FS typ.
Measuring range	0 ... 2.5 to 0 ... 700 bar 0 ... 30 to 0 ... 10000 psi	Media temperature	-40°C ... +125°C
Output signal	Bus protocol CANopen DS404	Ambient temperature	-40°C ... +125°C
NLH @ 25°C (BSL) typ.	± 0.3 % FS typ. ± 0.2 % FS typ.		

12/2021

Data sheet H72619e

Subject to change

## Ordering information/type code

Measuring range <sup>1)</sup>	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]	75	76	77	78	79	80	81	82	83	84	85	86	87	8271 . XX	XX	XX	XX	XX	XX	
	Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]	G5	G6	G7	G8	GA	G9	HA	H0	H1	H2	H3	H5	G4	H4	H6	H7				
	0 ... 2.5	7.5	50																				
	0 ... 4	12	60																				
	0 ... 6	18	100																				
	0 ... 10	30	200																				
	0 ... 16	48	200																				
	0 ... 25	75	300																				
	0 ... 40	120	300																				
	0 ... 60	180	400																				
	0 ... 100	300	500																				
	0 ... 160	480	750																				
	0 ... 250	750	1000																				
	0 ... 400	1000	2000																				
	0 ... 600	1500	2500																				
	0 ... 700	1500	2500																				
	<b>Option 5P: Fivefold overpressure</b>																						
	0 ... 2.5	12.5	60																				
	0 ... 4	20	100																				
	0 ... 6	30	200																				
	0 ... 10	50	200																				
	0 ... 16	80	300																				
	0 ... 25	125	300																				
	0 ... 40	200	400																				
	0 ... 60	300	500																				
	0 ... 100	500	750																				
	0 ... 160	800	1000																				
<b>Sensor</b>	Relative pressure, accuracy: 0.5 %																25						
	Relative pressure, accuracy: 0.3 %																23						
<b>Pressure connection</b>	G1/4" male, seal: DIN 3869 (accessories 61/63/83)																17						
	G1/4" male, with integrated damping Ø 0.5 mm, Seal: DIN 3869 (accessories 61/63/83)																15						
	G1/4" male (Manometer) EN 837																53						
	G1/8" male DIN3852-E, seal: accessory 61 <sup>3)</sup>																54						
	1/4" NPT male																30						
	1/4" NPT female <sup>3)</sup>																13						
	1/8" NPT male <sup>3)</sup>																43						
	7/16"-20UNF female, SAE J512 with valve opener <sup>4)</sup>																24						
	7/16"-20UNF female, SAE J512 without valve opener <sup>4)</sup>																44						
	7/16"-20UNF male, DIN3866 <sup>4)</sup>																18						
	7/16"-20UNF SAE4 male (J1926), seal: accessory 61																42						
	9/16"-18UNF male, SAE6 (J1926), seal: accessory 61																61						
	R1/4" male, DIN3858																19						
	R1/4" male, DIN2999 <sup>5)</sup>																20						
	R1/8" male, DIN3858 <sup>3)</sup>																16						
	M10x1 male, DIN EN ISO 6149-2, seal: accessory 61																32						
	M12x1 male, seal: accessory 61 <sup>2)</sup>																64						
	M12x1.25 male, seal: accessory 61 <sup>2)</sup>																65						
	M12x1.5 male, DIN EN ISO 9974-2, seal: accessory 61																49						
	M14x1.5 male DIN EN ISO 6149-2, seal: accessory 61 <sup>5)</sup>																31						

<b>Electrical connection</b>	Male electrical connector M12x1, 5-pole, Mat. PA, IEC 61076-2-101	35
<b>Output signal</b>	CANopen bus protocol	51
<b>Accessories</b>	Female electrical plug M12x1, 5-pole	33
	Pressure peak damping element ø 1.0 mm <sup>6)</sup>	40
	Pressure peak damping element ø 0.4 mm <sup>6)</sup>	44
	Seal FPM, -18°C ... +125°C	61
	Seal EPDM, -40°C ... +125°C	63
	Seal NBR, -25°C ... +100°C	83
	Parameterization standard with baudrate 20kbit/s <sup>8)</sup>	ZS
	Parameterization standard with auto baudrate detection <sup>8)</sup>	ZA
	Parameterization according to customer specification <sup>8)</sup>	ZC
	Multiple packaging <sup>7)</sup>	VM

<sup>1)</sup> Extended overpressure as well as customized pressure ranges upon request

<sup>2)</sup> Without seal, use seal geometry according DIN EN ISO 6149-2

<sup>3)</sup> Max. allowable pressure range 160 bar at 480 bar overpressure

<sup>4)</sup> Max. allowable pressure range 60 bar at 180 bar overpressure

<sup>5)</sup> Upon request

<sup>6)</sup> Not for pressure connections 53, 13, 24, 44, 18

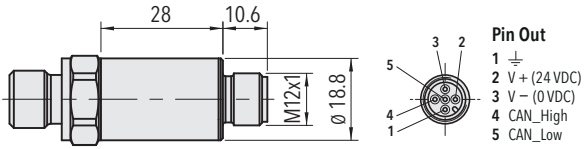
<sup>7)</sup> The order quantity must be a multiple of 50

<sup>8)</sup> One parameterization option must be selected

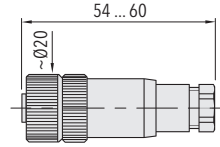
## Standard products (extra short lead time)

Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Supply [VDC]	Accuracy @ 25°C typ. [%]
CMP2.5M	8271 75 2517 35 0000 0000 51 44	0 ... 2.5	7.5	9 ... 32	± 0.5
CMP4.0M	8271 76 2517 35 0000 0000 51 44	0 ... 4	12	9 ... 32	± 0.5
CMP6.0M	8271 77 2517 35 0000 0000 51 44	0 ... 6	18	9 ... 32	± 0.5
CMP10.0M	8271 78 2517 35 0000 0000 51 44	0 ... 10	30	9 ... 32	± 0.5
CMP16.0M	8271 79 2517 35 0000 0000 51 44	0 ... 16	48	9 ... 32	± 0.5
CMP25.0M	8271 80 2517 35 0000 0000 51 44	0 ... 25	75	9 ... 32	± 0.5
CMP40.0M	8271 81 2517 35 0000 0000 51 44	0 ... 40	120	9 ... 32	± 0.5
CMP100.0M	8271 83 2517 35 0000 0000 51 44	0 ... 100	300	9 ... 32	± 0.5
CMP250.0M	8271 74 2517 35 0000 0000 51 44	0 ... 250	750	9 ... 32	± 0.5
CMP400.0M	8271 84 2517 35 0000 0000 51 44	0 ... 400	1000	9 ... 32	± 0.5

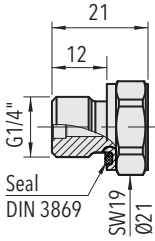
## Dimensions



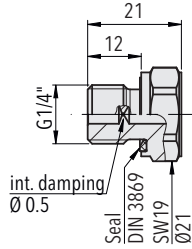
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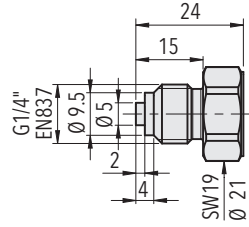
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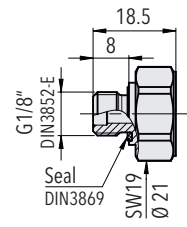
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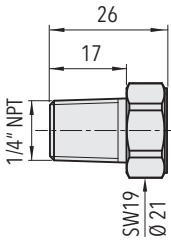
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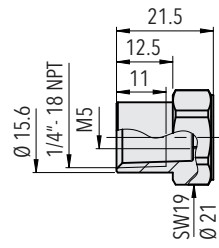
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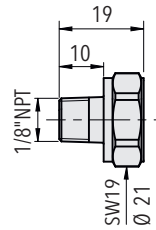
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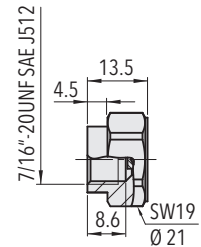
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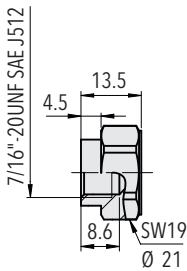
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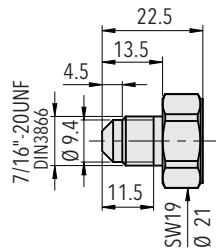
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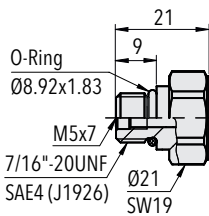
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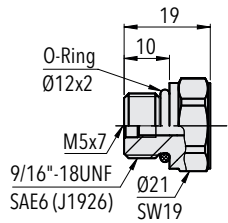
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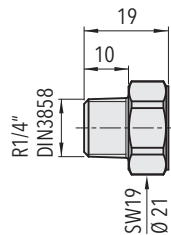
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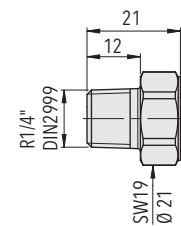
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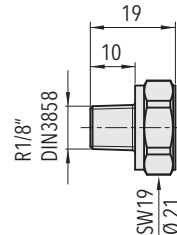
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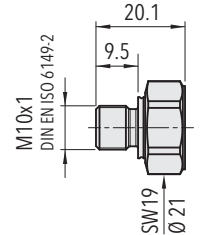
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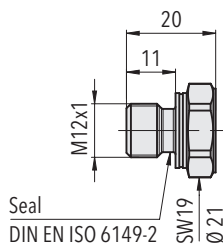
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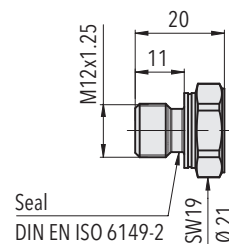
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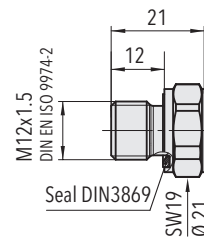
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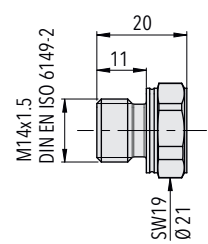
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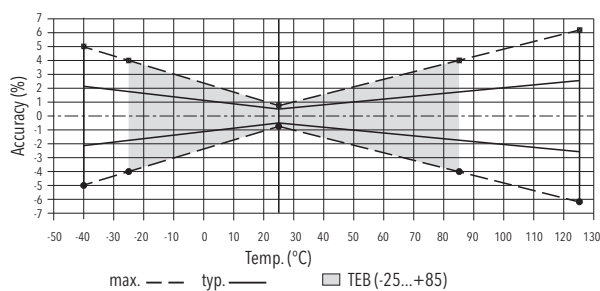
Specifications		
<b>Electrical data</b>	Output / supply voltage	Bus protocol CANopen / 12/24 (9 ... 32) VDC
	Current consumption / power consumption	< 0.5 W
<b>Environmental conditions</b>	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +125°C
	Protection <sup>1)</sup>	Min. IP67
	Vibration	16 g RMS (10...2000 Hz) (EN60068-2-64) 25 g sin (80...2000 Hz), 1 oct./min, (1x @ 25°C) (EN60068-2-6)
	Shock	50 g / 8 ms 100 g / 6 ms Male electrical plug M12x1 (EN60068-2-27)
<b>EMC protection</b>	Emission	EN/IEC 61000-6-3
	Immunity <sup>2)</sup>	EN/IEC 61000-6-2
<b>Mechanical data</b>	Sensor (wetted parts)	1.4542 (AISI630)
	Pressure connection (wetted parts)	1.4542 (AISI630)
	Housing	1.4301 (AISI304)
	Sealing	See ordering information
	Male electrical connector	See ordering information
	Weight	~ 60 g
	Mounting torque	25 Nm

<sup>1)</sup> Provided female electrical plug is mounted according to instructions

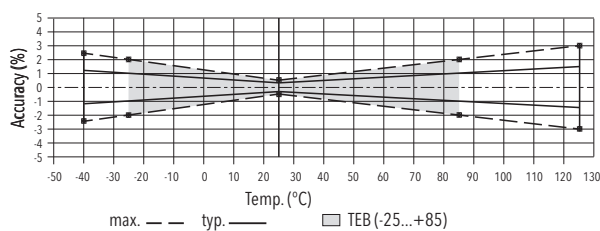
<sup>2)</sup> Tests carried out with shielded cable

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
<b>Signal of pressure sensor</b>			
Resolution		≥ 10 bit @ 1 ms 13 bit @ ≥ 8 ms	≥ 10 bit @ 1 ms 13 bit @ ≥ 8 ms
Sampling rate (fix)		1ms (1 kHz)	1ms (1 kHz)
Measuring filter		Repeating average and moving average acc. DS-404	Repeating average and moving average acc. DS-404

## Measuring accuracy class 0.5 % (sensor 25)



## Measuring accuracy class 0.3 % (sensor 23)



**CANopen Features**

- CiA conformance tested
- Output signal: CAN BUS (ISO 11898-2)
- CANopen: DS301
- Device profile: DS404-1
- CiA bus speeds: 10kbit/s ... 1Mbit/s
- Autobaud / Baudrate detection
- Supports 11 bit identifiers: CAN 2.0 A/B
- SDO-Server: 1
- TX-PDOs: 2
- PDO modes: time-triggered, sync (cyclic)
- PDO mapping: yes
- All standardized data types for PDO's: Floating point, integer with 32, 16 bits
- Frequency of measurement and transmission: Up to 1kHz
- Measuring filter: Repeating average and moving average acc. DS-404-1
- Eligible, prefix adjustable units for pressure: bar, Pa, psi, mmHg, atm, at; temperature: °C, °F, K
- Auto-zero function
- Auto-Start-Mode for operation without master
- LSS (DS305) implemented
- Error control with Heartbeat
- Emergency message
- Separate storage of parameters for communication and application
- Flash-Update

**Additional information****Documents**

Data sheet	<a href="http://www.trafag.com/H72619">www.trafag.com/H72619</a>
Instructions	<a href="http://www.trafag.com/H73619">www.trafag.com/H73619</a>
Flyer	<a href="http://www.trafag.com/H70613">www.trafag.com/H70613</a>