

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.		

04/2023

Data sheet H72619g

Subject to change

Ordering information/type code

Measuring range ¹⁾	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]	8271 . XX	XX	XX	XX	XX	XX
	Pressure measurement range [psi]	Over pressure [psi]	Burst pressure [psi]						
	0 ... 2.5	7.5	50	75	G5				
	0 ... 4	12	60	76	G6				
	0 ... 6	18	100	77	G7				
	0 ... 10	30	200	78	G8				
	0 ... 16	48	200	79	GA				
	0 ... 25	75	300	80	G9				
	0 ... 40	120	300	81	HA				
	0 ... 60	180	400	82	H0				
	0 ... 100	300	500	83	H1				
	0 ... 160	480	750	85	H2				
	0 ... 250	750	1000	74	H3				
	0 ... 400	1000	2000	84	H5				
	0 ... 600	1500	2500	86	G4				
	0 ... 700	1500	2500	87	H4				
	Option 5P: Fivefold overpressure				H6				
	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					
Sensor	Relative pressure, accuracy: 0.5 %								25
	Relative pressure, accuracy: 0.3 %								23
Pressure connection	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 ³⁾								54
	1/4" NPT male								30
	1/8" NPT male ³⁾								43
	7/16"-20UNF female, SAE J512 with valve opener ⁴⁾								24
	7/16"-20UNF female, SAE J512 without valve opener ⁴⁾								44
	7/16"-20UNF male, DIN3866 ⁴⁾								18
	7/16"-20UNF-2A male, SAE J1926-3 (Light Duty), seal: accessory 61/63 ⁹⁾								42
	7/16"-20UNF-2A male, SAE J1926-2 (Heavy Duty), seal: accessory 61/63 ¹⁰⁾								69
	9/16"-18UNF-2A male, SAE J1926-3 (Light Duty), seal: accessory 61 ⁹⁾								61
	9/16"-18UNF-2A male, SAE J1926-2 (Heavy Duty), seal: accessory 61 ¹⁰⁾								67
	R1/4" male, DIN3858								19
	R1/4" male, DIN2999 ⁵⁾								20
	R1/8" male, DIN3858 ³⁾								16
	M10x1 male, DIN EN ISO 6149-2, seal: accessory 61								32
	M12x1 male, seal: accessory 61 ²⁾								64
	M12x1.25 male, seal: accessory 61 ²⁾								65
	M12x1.5 male, DIN EN ISO 9974-2, seal: accessory 61								49
	M14x1.5 male DIN EN ISO 6149-2, seal: accessory 61 ⁵⁾								31

Electrical connection	Male electrical connector M12x1, 5-pole, Mat. PA, IEC 61076-2-101	35
Output signal	CANopen bus protocol	51
Accessories	Female electrical plug M12x1, 5-pole	33
	Pressure peak damping element \varnothing 1.0 mm ⁶⁾	40
	Pressure peak damping element \varnothing 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
	Parametrisation standard with baudrate 20kbit/s ⁸⁾	ZS
	Parametrisation standard with auto baudrate detection ⁸⁾	ZA
	Parameterization according to customer specification ⁸⁾	ZC
	Multiple packaging ⁷⁾	VM

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

²⁾ Without seal, use seal geometry according DIN EN ISO 6149-2

³⁾ Max. allowable pressure range 160 bar at 480 bar overpressure

⁴⁾ Max. allowable pressure range 60 bar at 180 bar overpressure

⁵⁾ Upon request

⁶⁾ Not for pressure connections 53, 13, 24, 44, 18

⁷⁾ The order quantity must be a multiple of 50

⁸⁾ One parameterization option must be selected

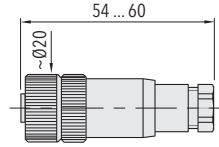
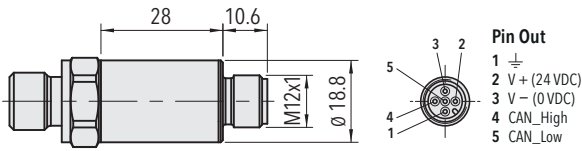
⁹⁾ Measuring range max. 350 bar according to SAE J1926-3 (Light Duty). Do not use for new designs, will be replaced by design according to SAE J1926-2 (Heavy Duty) in 2023

¹⁰⁾ Measuring range max. 630 bar according to SAE J1926-2 (Heavy Duty)

Standard products (extra short lead time)

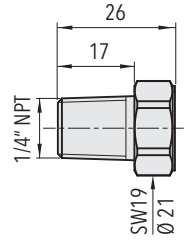
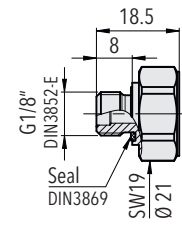
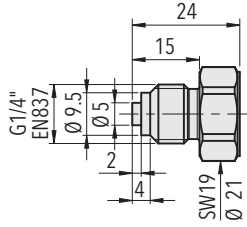
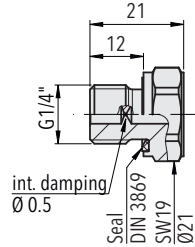
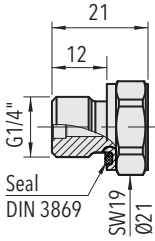
Product No.	Type Code	Pressure range [bar]	Over pressure max. [bar]	Supply [VDC]	Accuracy @ 25°C typ. [%]
CMP2.5M	8271 75 2517 35 0000 0000 51 44	0 ... 2.5	7.5	9 ... 32	± 0.5
CMP4.0M	8271 76 2517 35 0000 0000 51 44	0 ... 4	12	9 ... 32	± 0.5
CMP6.0M	8271 77 2517 35 0000 0000 51 44	0 ... 6	18	9 ... 32	± 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



8271.XX.XXXX.35.XX.XX

8271.XX.XXXX.XX.XX.33



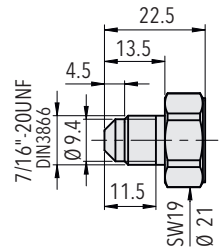
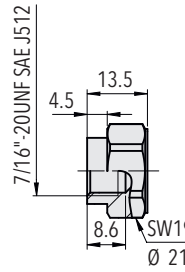
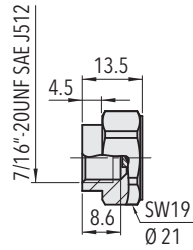
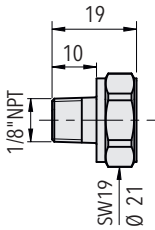
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8271.XX.XX15.XX.XX.XX

8271.XX.XX53.XX.XX.XX

8271.XX.XX54.XX.XX.XX

8271.XX.XX30.XX.XX.XX

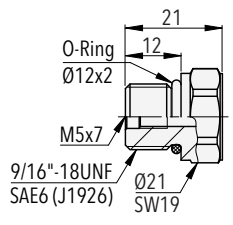
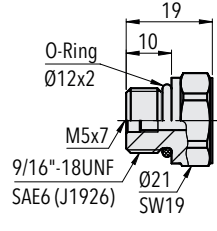
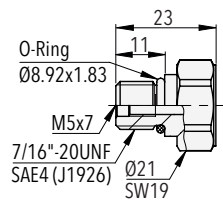
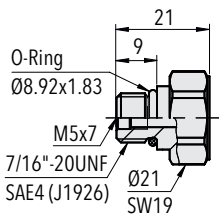


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8271.XX.XX24.XX.XX.XX

8271.XX.XX44.XX.XX.XX

8271.XX.XX18.XX.XX.XX

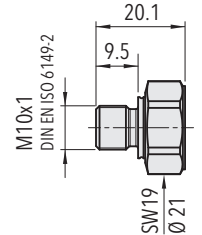
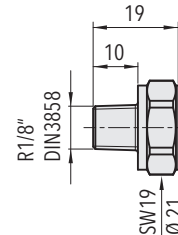
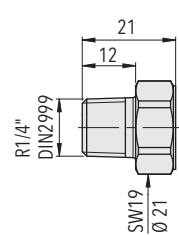
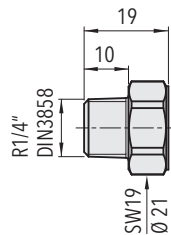


8271.XX.XX42.XX.XX.XX

8271.XX.XX69.XX.XX.XX

8271.XX.XX61.XX.XX.XX

8271.XX.XX67.XX.XX.XX

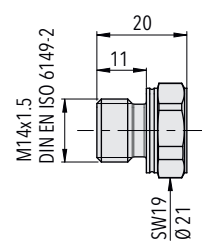
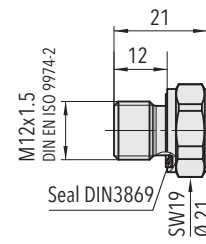
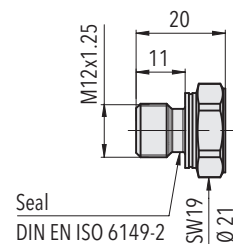
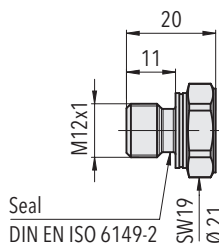


8271.XX.XX19.XX.XX.XX

8271.XX.XX20.XX.XX.XX

8271.XX.XX16.XX.XX.XX

8271.XX.XX32.XX.XX.XX



8271.XX.XX64.XX.XX.XX

8271.XX.XX65.XX.XX.XX

8271.XX.XX49.XX.XX.XX

8271.XX.XX31.XX.XX.XX

Specifications		
Electrical data	Output / supply voltage	Bus protocol CANopen / 12/24 (9 ... 32) VDC
	Current consumption / power consumption	< 0.5 W
Environmental conditions	Media temperature	-40°C ... +125°C
	Ambient temperature	-40°C ... +125°C
	Protection ¹⁾	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)
EMC protection	Emission	EN/IEC 61000-6-3
	Immunity ²⁾	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	See ordering information
	Male electrical connector	See ordering information
	Weight	~ 60 g
	Mounting torque	25 Nm

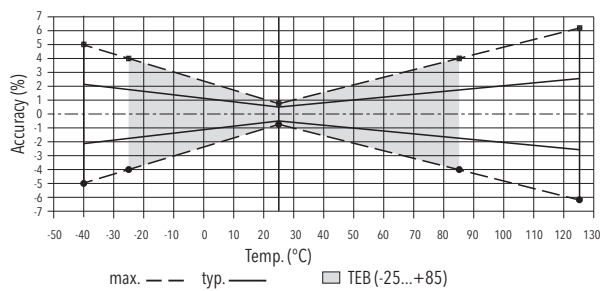
¹⁾ Provided female electrical plug is mounted according to instructions

²⁾ Tests carried out with shielded cable

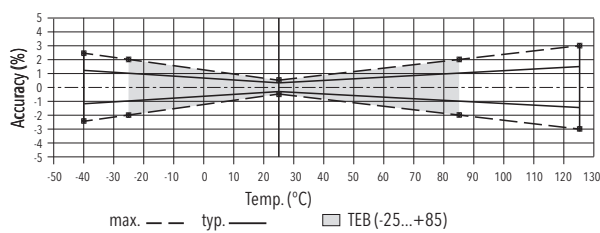
Accuracy

		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
Signal of pressure sensor			
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	www.trafag.com/H72619
Instructions	www.trafag.com/H73619
Flyer	www.trafag.com/H70613