



PRESSURE

TFT Technology

PMI Technology

P2P Technology

PRIGNITZ 
 MIKROSYSTEMTECHNIK

CIT Family

Intrinsically safe pressure transducers:
PMP-C111-Exi, PMP-C122-Exi, PMP-C131-Exi

Datasheet

These are stainless steel, intrinsically safe pressure sensors for the usage in hazardous areas.

In addition to its rugged construction and a good price- to- performance ratio these products will be the solution for pressure measurement for a very wide variety of applications.

This sensors has high signal accuracy better than 0,25% of the full-scale signal. Additionally the sensors from this series allows to signal downscaling, zero setting and signal filtering, with can be adjustable by special PC- software.

MAIN FEATURE

- Hi- strength stainless steel construction no silicone oil, no internal O-Rings (above 4 bar)
- Wide operating temperature range
- Low static and thermal errors
- Compatible with a wide range of liquids and gases
- High grade of EMI/RFI protection grade
- Wide variety of pressure ranges
- Several electrical connection available

SUITABLE HAZARDOUS AREAS AND CONDITIONS:



• metallic connectors

US: Class I, Zone 0 AEx ia IIC T4 Ga, Class I, Division 1, Groups A, B, C, D T4

CAN: Ex ia IIC T4 Ga IS Class I, Division 1, Groups A, B, C, D T4

• for other plugs and cables:

US: Class I, Zone 1 AEx ia IIC T4 Gb, Class I, Division 1, Groups A, B, C, D T4

CAN: Ex ia IIC T4 Gb, IS Class I, Division 1, Groups A, B, C, D T4

Rated for:

Class 2258 04 PROCESS CONTROL EQUIPMENT (for hazardous Canadian locations)

Class 2258 84 PROCESS CONTROL EQUIPMENT (for hazardous locations- certified to US standards)



- With flange plug: II 1G Ex ia IIC T4 Ga
- Other plugs: II 1G Ex ia IIB T4 Ga or II 2G Ex ia IIC T4 Gb



Examples of series products

APPLICATION


MONITORING OF TANKS LEVEL

OIL & GAS EQUIPMENT

MARINE & OFFSHORE

REMOTE PROCESS CONTROL

DRILLING & MINING

CHEMICAL INDUSTRY
GALAXY OF CUSTOMIZED SOLUTIONS

PRIGNITZ-MST.DE

TECHNICAL SPECIFICATIONS

| PERFORMANCE CHARACTERISTICS | | | | | | | | | | | |
|--|--|--------|------|------|------|-------|-------|-------|-------|-------|-------|
| Pressure ranges (in bar) * | | | | | | | | | | | |
| Nominal pressure | 0,1 | 0,16 | 0,25 | 0,4 | 0,6 | 1 | 1,6 | 2,5 | 4 | 6 | 10 |
| Over pressure | 1 | 1,5 | 2 | 2 | 4 | 5 | 10 | 5 | 8 | 12 | 20 |
| Burst pressure | 2 | 3 | 4 | 4 | 8 | 10 | 15 | 10 | 12 | 18 | 30 |
| | | | | | | | | | | | |
| Nominal pressure | 16 | 25 | 40 | 60 | 100 | 160 | 260 | 400 | 600 | 1000 | 2000 |
| Over pressure | 32 | 50 | 80 | 120 | 200 | 320 | 500 | 800 | 1200 | 1400 | 2200 |
| Burst pressure | 48 | 75 | 120 | 180 | 500 | 750 | 1000 | 1400 | 1800 | 2000 | 2500 |
| Pressure ranges (in psi) * | | | | | | | | | | | |
| Nominal pressure | 1.5 | 2.3 | 3.6 | 5.8 | 8.7 | 14.5 | 23.2 | 36.2 | 58 | 87 | 145 |
| Over pressure | 14.5 | 21.7 | 29 | 29 | 58 | 72.5 | 145 | 72.5 | 116 | 174 | 290 |
| Burst pressure | 29 | 43.5 | 58 | 58 | 116 | 145 | 217.5 | 145 | 174 | 261 | 435 |
| | | | | | | | | | | | |
| Nominal pressure | 232 | 362.5 | 580 | 870 | 1450 | 2320 | 3770 | 5800 | 8700 | 14500 | 29000 |
| Over pressure | 464 | 725 | 1160 | 1740 | 2900 | 4640 | 7250 | 11600 | 17400 | 20300 | 31900 |
| Burst pressure | 696 | 1087.5 | 1740 | 2610 | 7250 | 10875 | 14500 | 20300 | 26100 | 29000 | 36250 |
| Accuracy (25°C) | +/- 0,25 % FS | | | | | | | | | | |
| Overall accuracy (- 5°C... 85°C) | +/-1,5 % FS | | | | | | | | | | |
| Overall accuracy (< - 5°C and > 85°C) | +/- 3 % | | | | | | | | | | |
| Stability (1 year) | +/- 0,25 % full scale (typical) | | | | | | | | | | |
| Maximum working pressure | 200 MPa\29 000 psi | | | | | | | | | | |
| Pressure cycles | > 100 million | | | | | | | | | | |
| ENVIRONMENTAL DATA | | | | | | | | | | | |
| Ambient temperatur range | - 40 °C ... 85 °C (-40 °F ... 185 °F) | | | | | | | | | | |
| Storage temperature range | - 40 °C ... 85 °C (- 40 °F ... 185 °F) | | | | | | | | | | |
| Humidity | 0 ... 100 % r. h., non condensing | | | | | | | | | | |
| Shock protection | EN/IEC 60068-2-32 (1 m free fall) | | | | | | | | | | |
| Vibration | 20 g / 3 axes to EN/IEC 60068-2-6 | | | | | | | | | | |
| EMI/RFI emmission | EN 61326-1:2013- section 7 | | | | | | | | | | |
| | EN 61326-2-3:2013 | | | | | | | | | | |
| EMI/RFI susceptibility | EN 61326-1:2013 - section 6 | | | | | | | | | | |
| | EN 61326-2-3:2013 | | | | | | | | | | |
| Protection grade | >= IP65 / DIN 40 050 | | | | | | | | | | |
| Material of wetted parts | 1.4404 (316L); 1.4301 (304); Hastelloy C-276 (only on request); Inconel 718 (only on request) | | | | | | | | | | |

| ELECTRICAL DATA | | | |
|------------------------------------|--|---|---------------------------------|
| Output signal | 4 ... 20 mA | 0/1 ... 5 V DC; 0/1 ... 6 V DC; 0/1 ... 10 V DC | 0,5 ... 4,5 V DC ratiometric |
| Supply voltage (DC) | 10 ... 27 V | 10 ... 27 V (Vout x ... 5 V) 10 ... 27 V (Vout x ... 6 V) 15 ... 27 V (Vout x ... 10 V) | 5 V DC +/- 5 % |
| Load resistance | < (Vcc-10 V)/20 mA | > 5 kOhm | > 2,5 kOhm |
| Current consumption | 3,6 ... 21,4 mA | 7 mA typ. | 7 mA typ. |
| Response time | < 5 ms | < 2 ms | < 2 ms |
| Zero offset | < 1 % of FS | < 1 % of FS | < 1 % of FS |
| Span tolerance | < 2 % of FS | < 1,5 % of FS | < 1,5 % of FS |
| Reverse and overvoltage protection | yes | | |
| CONNECTION VERSIONS | | | |
| Electrical connection | EN 175 301-803-A /-C; M12 x 1 (Binder S763); TURCK MiniFast 4 pins; cable outlet; others upon request | | |
| Process connections (standard) | G 1/4" DIN 1179-2; G 1/2" DIN 1179-2; G 1/4" EN 837; G 1/2" EN 837; 1/2" NPT male; 1/4"NPT male; 1/8" NPT male; 1/4" NPT female; 1/4" BSPP male; 9/16-18 UNF male; others upon request | | |
| OUTLINE DIMENSIONS | | | |
| Hex wrench size | 22 mm (0.87 ") (depending of thread) | | |
| Casing diameter | 22 mm (0.87 ") | | |
| Over all case lenght | connector versions: typ. 90 mm (3.5") | | |
| | conduit versions: typ. 100 mm (4") | | |

* Depends on pressure range



Before installation and operation, ensure that the appropriate pressure sensor has been selected in terms of pressure range, design and specific measuring conditions. Non compliance can result in serious injury and/or damage to the equipment.

WARNING: Prignitz Mikrosystemtechnik reserve the right to modify their products without notice to customers. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate testes, that the product is suitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, addition, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.

HOW TO ORDER

PMP-C1XX-Exi.XX-XX-(XX..XX)-XX-X-XXS-XX-XXX

FAMILIES

C = CIT Family

TECHNOLOGY & MATERIAL

11 = TFT Technology with 17-4PH material
22 = P2P Technology with 316L material
31 = PMI Technology with 316L material

TYPE

Exi = Intrinsically safe pressure transducer

CERTIFICATION

10 = CSA
20 = ATEX
1H = CSA + EC 79/2009 (up to 600 bar Hydrogen approval)
2H = ATEX + EC 79/2009 (up to 600 bar Hydrogen approval)

ELECTRICAL OUTPUT

I2 = 4 ... 20 mA 3L
UR = ratiometric
0U5 = 0 ... 5 V
1U5 = 1 ... 5 V
U10 = 0 ... 10 V

PRESSURE RANGES

e.g.
(0...400)
(0...1500)
(-1...100)

UNIT

00 = Customised
01 = bar
16 = psi

**Customised
Article number**

ELECTRICAL CONNECTION

01 = Packard connector 3 pins
02 = EN 175 301-803-A
03 = EN 175 301-803-C
05 = Flange connector M12 / 4 pins (Binder S763)
08 = DEUTSCH DT04-2P (2 pins)
09 = DEUTSCH DT04-3P (3 pins)
10 = DEUTSCH DT04-4P (4 pins)
11 = AMP Super Seal
14 = TURCK MiniFast 7/8" 4 pins
Cable available

SNUBBER

S = with snubber

PROCESS CONNECTIONS

00 = Customised
01 = G 1/4" Form E
02 = G 1/4" Form A
04 = G 1/2"
07 = 1/2" NPT
08 = 1/4" NPT
10 = 9/16" UNF
11 = 3/8" UNF
13 = M12 x1
17 = M18 x 1,5
18 = M20 x 1,5 manometer port

TYPE OF PRESSURE

S = Sealed reference
g = gauge
a = absolute

APPROVALS CERTIFICATE

CE Compliance: EMC directive 2014 / 30 / EU according in EN 61326-2-3

RoHS guideline: 2011/65/EU

Approved according to the European Directive EC79/2009

PRIGNITZ Mikrosystemtechnik GmbH is certified acc. to ISO 9001. We offer a multitude of products compliant with ATEX, IECEx, CSA, and other worldwide relevant qualifications.

CSA master contract: MC 267726

CSA certificate #: 70159209



DISMOUNTING, RETURN AND DISPOSAL

Dismounting

Physical injuries and damage to property and the environment caused by hazardous media Upon contact with hazardous media (e.g. oxygen, acetylene, flammable or toxic substances), harmful media (e.g. corrosive, toxic, carcinogenic, radioactive), and also with refrigeration plants and compressors, there is a danger of physical injuries and damage to property and the environment.

- Should a failure occur, aggressive media with extremely high temperature and under high pressure or vacuum may be present at the instrument.
- Wear the requisite protective equipment.

Dismounting the instrument

- Depressurise and de-energise the pressure transmitter.
- Disconnect the electrical connection.
- Unscrew the pressure transmitter with a spanner using the spanner flats.

Return

Strictly observe the following when shipping the instrument:

All instruments delivered to Prignitz Mikrosystemtechnik must be free from any kind of hazardous substances (acids, bases, solutions, etc.) and must therefore be cleaned before being returned.

TRANSPORT, PACKAGING AND STORAGE

Transport

Check the pressure transmitter for any damage that may have been caused during transportation. Obvious damage must be reported immediately.

Packaging and storage

Do not remove packaging until just before mounting.

Keep the packaging as it will provide optimum protection during transport (e.g. change in installation site, sending for repair).

Recommended conditions at the place of storage:

- - 40 °C to 85 °C (- 40 °F ... 185°F)

CUSTOMIZED SOLUTIONS

An indisputable advantage of the products from Prignitz Mikrosystemtechnik is that in addition to the specified parameters, a variety of specific customer requests can be implemented:

- other process and electrical connections available in a wide range of options
- analog output signals can be customized upon request.

Feel free to ask us. We are ready to implement individual solutions for you.

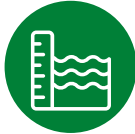
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PRIGNITZ

MIKROSYSTEMTECHNIK



PRESSURE



LEVEL



TEMPERATURE



CALIBRATION &
SERVICE

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