



PRESSURE

P2P Technology

PMP-C122-H

CIT Family: Computerized Intelligent Transducer

APPROVED FOR HYDROGEN

DATASHEET

- INNOVATIVE, MONOLITHIC STAINLESS STEEL MEASURING CELL WITH TWO-CHIP PATENTED TECHNOLOGY (P2P)
- HIGH MEDIA RESISTANCE, NO INTERNAL SEALS, WITHOUT WELD SEAM
- COMPACT DESIGN, HIGH INTEGRATION DENSITY
- MICROPROCESSOR SIGNAL CONDITIONING
- HIGH SIGNAL ACCURACY BETTER 0,25% OF FULL SCALE SIGNAL
- SIGNAL DOWNSCALING BY PC-SOFTWARE
- ZERO-SETTING BY TOOL OR PC-SOFTWARE
- SIGNAL FILTERING (CUSTOMIZING POSSIBLE)



MAIN FEATURE

- **Pressure ranges***: -1 ... 4 bar to -1 ... 1000 bar (-14.5 psi ...58 psi to -14.5 14500 psi)
- **Mechanical connections***: 9/16-18 UNF 6M; 1/2"-14 NPT; 1/4"-18 NPT; G1/4"B Mano EN 837; G1/2"B Mano EN 837; 7/16-20 UNF
- **Electrical connections***: EN 175301-803-A; M12x1 (S763); Cable output; Field housing
- **Wetted parts**: stainless steel 1.4404 (316L)
- **Response time****: ≤ 4 ms
- **Accuracy**: ≤ 0.25 % FS
- **Certificate**: EC 79/2009 Hydrogen type approval up to 600 bar
- **Optionally certificate**: EX protection (ATEX, IECEx, CSA)

*others on request. Different special custom-made solutions
** depend of CIT product-version

DESCRIPTION



Pressure transducer for an application with high and very high accuracy requirements over a wide temperature range in industries, especially chemical, hydraulic, food, and pharmacy, etc. Has especially been adapted to the chemical and physical properties of hydrogen. Pressure cells from -1...1000 bar are available for different fields of use. Signal processing of the measurement bridge is affected by a microprocessor for compensation pressure cell characteristics well. The CIT allows a zero point correction, a range changing, and measurement filtering with an additional service box and PC-Software.

The transducer is developed with a new type of two-chip technology (P2P Technology - our patented development). Our P2P measuring principle is based on the piezoresistive effect of two silicon Wheatstone full bridges and allows high accuracy in measuring gauge pressure for required applications.

APPLICATION



INDUSTRIAL AUTOMATION
Test stands, CNC equipment, Presses, HVAC



RENEWABLE ENERGY
Oil, Gas, Wind, Water, Hydrogen, Power stations



INDUSTRIAL PROCESS CONTROL
Chemical, Pharma, Food



OFF HIGHWAY MOBILE EQUIPMENT
Vehicles and Machines in Construction, Mining, Farming, Military



TRANSPORTATION
Trucks, Busses, rail, Road Construction Machines



MARINE & OFFSHORE
Engines, Hydraulic, Fluidhandling

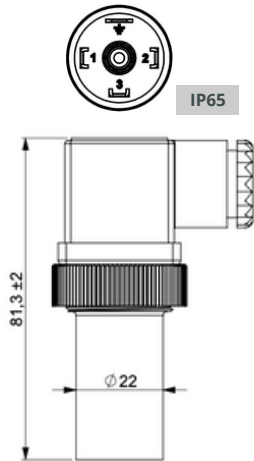
TECHNICAL SPECIFICATIONS

| INPUT PARAMETERS | | | |
|----------------------------------|---|-----------|--|
| Pressure ranges (in bar) * | | | |
| Nominal pressure | 4 | 10 | 16 25 40 60 100 160 250 400 600 1000 |
| Over pressure | 8 | 20 | 32 50 80 120 200 320 500 800 1200 1400 |
| Burst pressure | 12 | 30 | 48 75 120 180 300 480 750 1200 1800 2000 |
| Pressure type | gauge, sealed reference (>60 bar) | | |
| Mechanical connections * | 9/16-18 UNF 6M; 1/2"-14 NPT; 1/4"-18 NPT; G1/4"B Mano EN 837; G1/2"B Mano EN 837; 7/16-20 UNF | | |
| Tightening torque | typ 25 Nm; max up to 50 Nm | | |
| Wetted parts | stainless steel 1.4404 (316L) | | |
| Body material | stainless steel 1.4301/AISI 304 | | |
| OUTPUT SIZES | | | |
| Electrical connections * | EN 175301-803-A; M12x1 (S763); Cable output; Field housing | | |
| Output signal** | 4..20 mA | 1...5 V | ratiometric 0.5...4.5 V |
| Supply voltage | 10...32 V | 10...32 V | ratiometric 5 V DC+10% |
| Load resistance | < (Vsupply-10)V/0.02 A | ≥ 2 kOhm | ≥ 2 kOhm |
| Current consumption | 3.6...21.4mA | 7...9 mA | 7...9 mA |
| Response time*** | ≤ 4 ms | ≤ 4 ms | ≤ 4 ms |
| PERFORMANCE CHARACTERISTICS | | | |
| Accuracy (25°C) | ≤ 0.25 % FS | | |
| Overall accuracy (- 5°C... 85°C) | ≤ 1.50 % FS | | |
| Overall accuracy (<-5°C) | max ≤ 2 % FS | | |
| Long-term stability | ± 0.1 % FS per year in referential conditions | | |
| Ambient temperature | - 40...+ 85°C | | |
| Medium temperature | - 40...+ 85°C | | |
| Storage temperature | - 40...+ 85°C | | |
| Shock resistance | tested according to EN/IEC 60068-2-31 | | |
| Vibration resistance | 20 g to IEC 60068-2-6 | | |
| Protection class | depending on electrical connection, see drawing of electrical connectors | | |
| ELECTRICAL PROTECTION | | | |
| Reverse polarity | yes | | |
| Dielectric strength | 50 VDC | | |
| CE-CONFORMITY | | | |
| EMC guideline | 2014 / 30 / EU acc. to DIN EN 61326-1, DIN EN 61326-2-3 | | |
| RoHS guideline | 2011/65/EU | | |
| OTHER | | | |
| Weight**** | ~ 150g | | |
| Pressure cycles | > 10 million | | |

*other on request **output is calibrated at zero and full-scaled ***depend of Transmitter configuration ****depend of CIT product version

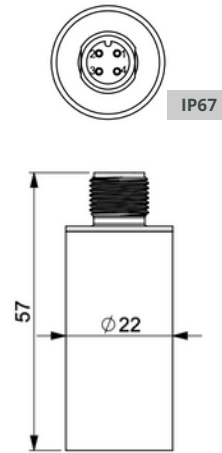
ELECTRICAL CONNECTION

EN 175301-803-A



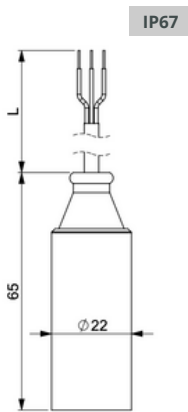
| | Pin1 | Pin2 | Pin3 | Pin4 | Pin5 |
|---------------------|------|------|---------|---------|------------|
| 0.5 -4.5 V; 1-5V | + | - | V/I out | GND-SDA | Thread-SCL |
| 4-20 mA | + | - | SDA | GND-SCL | nc |

M12x1 (S763)



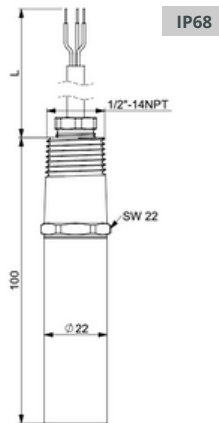
| | Pin1 | Pin2 | Pin3 | Pin4 |
|---------------------|------|------|------|---------|
| 0.5 -4.5 V; 1-5V | + | nc | - | V/I out |
| 4-20 mA | + | SCL | - | SDA |

Cable output



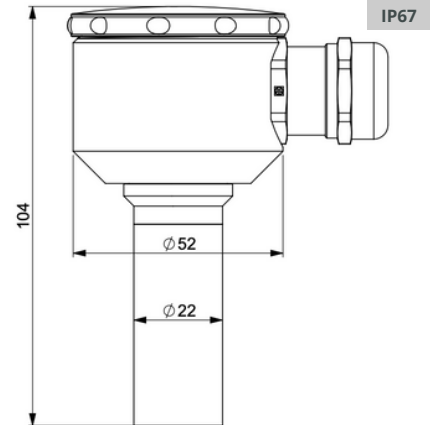
| | red | black | white | green |
|---------------------|-----|-------|---------|-------|
| 0.5 -4.5 V; 1-5V | + | - | V/I out | nc |
| 4-20 mA | + | - | nc | nc |

Cable output with conduit 1/2" NPT



| | red | black | white | green |
|---------------------|-----|-------|---------|-------|
| 0.5 -4.5 V; 1-5V | + | - | V/I out | nc |
| 4-20 mA | + | - | nc | nc |

Field housing SW 22 (optionally 320° rotatable)



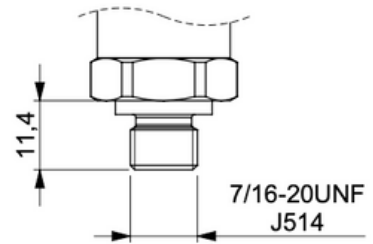
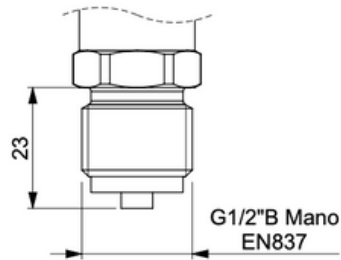
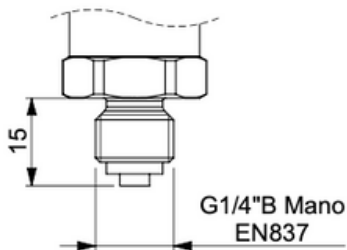
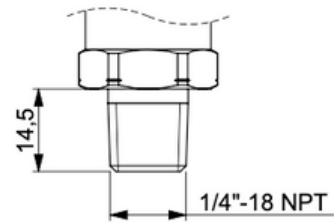
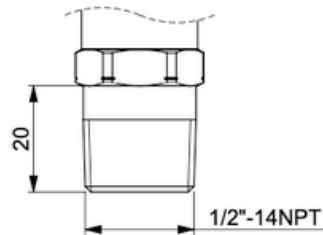
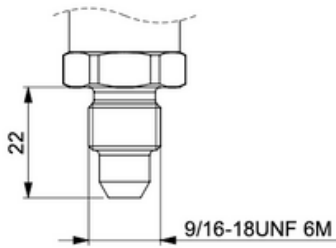
| | Pin1 | Pin2 | Pin3 |
|---------|------|------|------|
| 4-20 mA | - | nc | + |



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. 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.

PROCESS CONNECTIONS



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:

- EX versions are available for use in hazardous areas (ATEX, IECEx, CSA)
- 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.

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.



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).

Permissible conditions at the place of storage:

- Storage temperature: -40 ... +85 °C

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.

Edition version: [D/C122-H/Rev.4/FEB.2024/ENG](#)

HOW TO ORDER

PMP-C122-H-XXX- (XX..XX)-XX-XX-XXX-XX-XXX

FAMILIES

C = CIT family

TECHNOLOGY & MATERIAL

22 = P2P Technology with stainless steel 1.4404 (316L)

CERTIFICATION

H = EC 79/2009 (only up to 600 bar)

ELECTRICAL OUTPUT

I2 = 4-20mA 2L
I3 = 4-20mA 3L
I30 = 0-20mA 3L
UR = ratiometric
OU5 = 0-5V
1U5 = 1-5V
U10 = 0-10V

PRESSURE RANGES

e.g.
(-1...10)
(0...60)
(0...400)

UNIT

01 = bar
16 = psi

TYPE OF PRESSURE

g = Relative pressure
S = Sealed reference pressure

Customised
 Artical number

ELECTRICAL CONNECTION

00 = Customized
02 = MVS/A
05 = M12X1 (steel) S763-4
90 = Field Housing 74mm
C0 = cable
CC = Cable output with conduit

SNUBBER

S = with snubber
N = no snubber

PROCESS CONNECTIONS

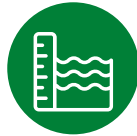
00 = customized
05 = G1/2 B Mano
07 = 1/2-14 NPT
08 = 1/4-18 NPT
09 = 7/16-20 UNF
10 = 9/16-18 UNF
19 = G1/4 manometr Port

PRIGNITZ

MIKROSYSTEMTECHNIK



PRESSURE



LEVEL



TEMPERATURE



CALIBRATION &
SERVICE

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