PRESSURE

P2P Technology

PRIGNITZ MIKROSYSTEMTECHNIK

# PMP-S122-H

## SPT Family: Standart Pressure Transmitter

## APPROVED FOR HYDROGEN

**DATASHEET**

- **MEASURING CELL IS FREE FROM WELDED SEAMS**
- **NO LEAK PATHS AND WEAK POINTS**
- **VACUUM-TIGHT AND ELASTOMER-FREE**
- **FLEXIBLE FOR CUSTOMISED REQUIREMENTS**

Example of products

## MAIN FEATURE

- **Pressure ranges***: from 4 bar to 1.000 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
- **Electrical connections*:** EN 175301-803-A, Packard Metri-Pack, M12x1 (S763), Packard Metri-Pack, cable
- **Wetted parts:** stainless steel 1.4404 (316L)
- **Response time:** < 1ms
- **Accuracy:** ≤ 0.5 % FS limit-point settings ( ≤ 0.35% FS BFSL) at 25 °C
- **Optionally certificate:** EX protection (ATEX, IECEx, CSA); up to 600 bar EC 79/2009 Hydrogen approval

*others on request

P2P TECHNOLOGY®

## DESCRIPTION

Very rugged pressure transmitter SPT (approved for H2) is based on **a new type of two-chip technology (P2P Technology - our patented development), which enables the highest demands on robustness and performance such as stability, vibration/shock resistance.** The piezoresistive stainless-steel measuring cell has especially been adapted to the chemical and physical properties of Hydrogen.

The entire sensor consists of a single piece, which is designed to prevent embrittlement and permeation of the metal surface by ionized hydrogen. It is also absolutely vacuum-tight and elastomer-free. Leaks caused by material fatigue on internal seals are thus eliminated from the outset. It has no disturbing pressure transfer fluid and no large pressurized surfaces. The membrane has a very robust design.

## APPLICATIONS

**ENERGY TECHNOLOGY**

**AUTOMOTIVE INDUSTRY**

**FUEL CELLS**

**GAS TECHNOLOGY**

**CHEMICAL INDUSTRY**

**HVAC (Heating, Ventilation, Air conditioning)**

# TECHNICAL SPECIFICATIONS

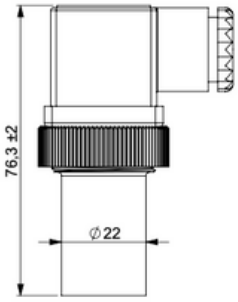
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INPUT PARAMETERS** | | | | | | | | | | | | |
| **Pressure ranges (in bar) *** | | | | | | | | | | | | |
| **Nominal pressure** | 4 | 10 | 16 | 25 | 40 | 60 | 100 | 160 | 250 | 400 | 600 | 1000 |
| **Over pressure** | 8 | 20 | 32 | 50 | 80 | 120 | 200 | 320 | 500 | 800 | 1200 | 1600 |
| **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 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, Packard Metri-Pack, M12x1 (S763) steel, M12x1 (S763) plastic, cable, EN 175301-803-C, Deutsch DT04-4P | | | | | | | | | | | |
| **Output signal **** | 4..20 mA | | | | | 1...5 V | | | | ratiometric 0.5...4.5 V | | |
| **Supply voltage** | 10...32 V | | | | | 7...32 V | | | | ratiometric 5 V DC+-10% | | |
| **Load resistance** | < (Vsupply - 10)V/0.02 A | | | | | ≥ 2 kOhm | | | | ≥ 2 kOhm | | |
| **Response time** | typ. 1 ms max. 2 ms | | | | | | | | | | | |
| **PERFORMANCE CHARACTERISTICS** | | | | | | | | | | | | |
| **Accuracy (25°C)***** | ≤ 0.5 % FS limit point settings | | | | | | | | | | | |
| **Overall accuracy (- 5°C... 85°C)** | 1.50 % | | | | | | | | | | | |
| **Long-term stability** | ≤ 0.1 % FS per year in referential conditions | | | | | | | | | | | |
| **Ambient temperature** | - 40...+ 105°C | | | | | | | | | | | |
| **Medium temperature** | - 40...+ 125°C | | | | | | | | | | | |
| **Storage temperature** | - 40...+ 125°C | | | | | | | | | | | |
| **Shock resistance** | 1000 g to IEC 60068-2-32 | | | | | | | | | | | |
| **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** | HV 350 V DC | | | | | | | | | | | |
| **Short-circuit protection** | KS Out+ / UB- (for 1s) | | | | | | | | | | | |
| **CE-CONFORMITY** | | | | | | | | | | | | |
| **EMV guidline** | 2014 / 30 / EU acc. to DIN EN 61326-1, DIN EN 61326-2-3 | | | | | | | | | | | |
| **RoHS guideline** | 2011/65/EU | | | | | | | | | | | |
| **OTHER** | | | | | | | | | | | | |
| **Weight***** | ~ 120 g | | | | | | | | | | | |
| **Lifetime** | > 100 million cycles | | | | | | | | | | | |

***others on request**
**** Output is calibrated at zero and full scale**
*****depend of SPT product-version**

# ELECTRICAL CONNECTION

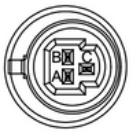
## EN 175301-803-A

IP65



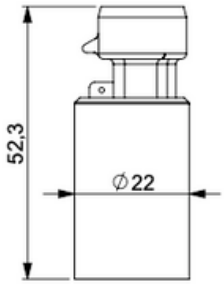

| | Pin1 | Pin2 | Pin3 | Pin4 | Pin5 |
|---|---|---|---|---|---|
| 0.5 -4.5 V; 1-5V | + | - | V/I out | GND | Thread |
| 4-20 mA | + | - | nc | GND | nc |

## Packard Metri-Pack



IP67

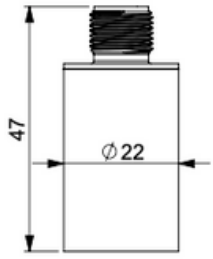
<50 bar IP65




| | PinA | PinB | PinC |
|---|---|---|---|
| 0.5 -4.5 V; 1-5V | - | + | V/I out |
| 4-20 mA | - | + | nc |

## M12x1 (S763)

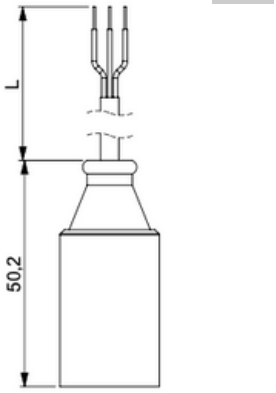
IP67




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

## Cable output

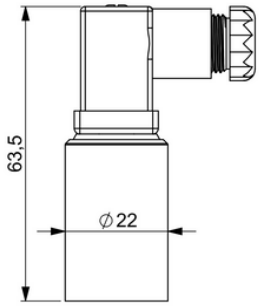
IP67




| | white | brown | yellow | green |
|---|---|---|---|---|
| 0.5 -4.5 V; 1-5V | + | - | V/I out | GND |
| 4-20 mA | + | - | GND | GND |
| 4-20mA digital | + | - | | |

## EN 175301-803-C

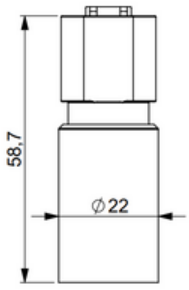
IP65




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

## Deutsch DT04-4P

IP67

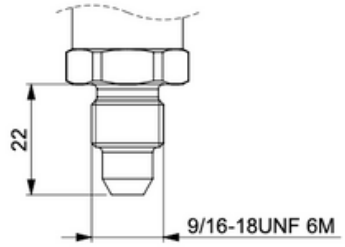



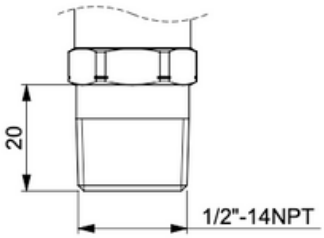

| | Pin1 | Pin2 | Pin3 | Pin4 |
|---|---|---|---|---|
| 0.5 -4.5 V; 1-5V | + | - | nc | V/I out |
| 4-20 mA | + | - | nc | nc |

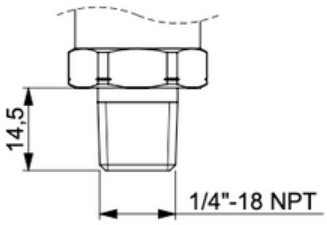
Before installation and operation, ensure that the appropriate pressure sensor has been selected in terms of pressure range, design and specific measuring conditions. Non compliance can result in serious injure and/or damage to the equipment.

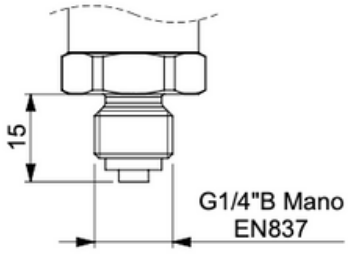
**WARNING:** Prignitz Mikrosystemtechnik reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate testes, 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.

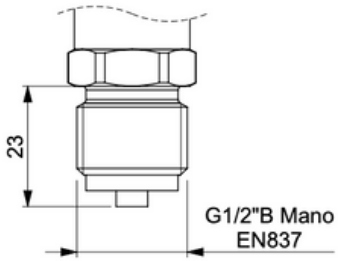
## PROCESS CONNECTIONS

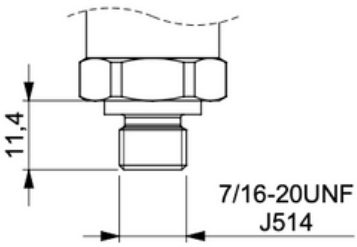



## CUSTOMIZED SOLUTIONS

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.**

# HOW TO ORDER *

## PMP-S122-H-XXX- (XX..XX)-XX-XX-XXX-XX-XXX

### FAMILIES
**S**= SPT 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
**0U5** = 0-5V
**1U5** = 1-5V
**U10** = 0-10V

### PRESSURE RANGES
e.g.
**(-1...10)**
**(0...60)**
**(0...400)**

### UNIT
**e.g**
**01** = bar
**16** = psi

### TYPE OF PRESSURE
**g** = gauge
**S** = Sealed reference

**Customised Articel number**

### ELECTRICAL CONNECTION
**00** = Customized
**01** = Packard Metri-Pack
**02** = MVS/A
**03** = MVS/C
**04** = M12X1 (plastic) S763-4
**05** = M12X1 (steel) S763-4
**10** = DT04-4P
**C** = cable

### SNUBBER
**S** = 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 manometer port

*** other on request**

## 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 ... +125 °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 compres- sors, 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/S122-H/Rev.2/June2023/ENG

PRIGNITZ

MIKROSYSTEMTECHNIK

PRESSURE

LEVEL

TEMPERATURE

CALIBRATION & SERVICE



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