



4200 Series

Pressure sensing platform

The new 4200 Series is a high performance, robust pressure measurement device. It combines the best mechanical properties of micromachined silicon in a fully welded stainless steel 316L body leveraging digital processing technology to offer performance and reliability over a wide temperature range suitable for use in all levels of motorsport.

Digital and analogue

By using digital signal processing, the sensor is optimised for performance over temperature. However, the final stage of processing converts the signal back into a conventional analogue output for easy interfacing to existing infrastructure. Fast ASIC technology ensures response times around 1 ms and fast switch on for pulse power operation. The digital processing also enables the replacement of mechanical adjustment to potentiometers with automatic calibration adjustment using an App.

Small and robust

The highest-grade components are designed to withstand high levels of shock, vibration and temperature extremes. Components are welded into a small, convenient, 19 mm diameter package to offer best in class performance in the harshest environments.

Druck expertise

Druck have used 50 years of experience to design the PMP4200. From the silicon processing, through the mechanical construction of the pressure sensing module and electronics design, to the selection of electrical connectors, each component's performance has been optimised to meet your requirements. Our team of experts can help you make the optimum product selection for your application.

Features

- Pressure ranges 1.6, 3, 10, 15, 30, 80, 125, 250, 350 bar
- Absolute reference
- 0.2 to 4.7 Vdc voltage output
- Total accuracy including thermal effects $\pm 1\%$ span
- Frequency response to 1 kHz
- 316L Stainless steel construction
- Compensated temperature range $-40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$
Short term use from $-55\text{ }^{\circ}\text{C}$ to $150\text{ }^{\circ}\text{C}$

Measurement

Operating pressure ranges

Absolute ranges (a)

Zero based ranges 1.6, 3, 10, 15, 30, 80, 125, 250, 350 bar
Equivalent ranges in psi, kPa, mbar, and MPa units are also available

Over-pressure

The following pressure can be applied without causing a shift in calibrated accuracy:

- 4 x FS (700 bar max)

Containment pressure

6 x FS (700 bar maximum)

Electrical parameters

Outputs

- 0.2 to 4.7 Vdc

Voltage output

7 to 28 Vdc < 3 mA

Insulation

> 100 MΩ at 500 Vdc.

Power on time

From power on to a stable reading within specification:
less than 30 ms

Performance specification

Accuracy

Including zero and span setting accuracy, NLH&R and thermal error: 1% span

Response time

Less than 1 ms

Stability

Long-term stability 0.05% Span/year typical
(0.1% Span/year max).

Orientation sensitivity

Units are calibrated mounted pressure connection down.
Output will change by less than 1 mbar /g which can be zeroed out during calibration

Vibration and shock

Sinusoidal Vibration to DO-160G Curve W. 5 to 2000 Hz, 30g peak.

Random vibration to DO-160G Cat. R (robust) Curves D1+E1.
10 to 2000 Hz, peak ASD 0.16g²/Hz.

Random vibration to BS EN 61373:2010. 5 to 250 Hz, peak ASD 6.12 g²/Hz.

Shock, 1000g half-sine for 1 ms.

Physical specifications

Environmental protection

See Electrical connectors section

Operating temperature range

See Electrical connectors section

Pressure media compatibility

Fluids compatible with stainless steel 316L and Hastelloy C276

Installation torque setting

10 Nm

Enclosure materials

Stainless steel 316L body.

Pressure connectors

- M10 x 1 male
- M8 x 1 male
- 7/16-20 UNF Male flat end 74°
- 3/8-24 UNF Male

Electrical Connectors

Description	IP rating	Location	Operating temperature	
			Min	Max
Raychem cable (metal crimp)	IP65	Indoor	-55 °C	+125 °C

Supplied with 1m (3ft) cable

Connections

	Wire color	Function
Raychem cable (metal crimp)	Red	+ve supply
	White	+ve output
	Green	-
	Blue	0V common
	Black	-
	Screen	Case

Ordering information

1. Select model number

Model type

PMP4

Diameter and material

2 19 mm stainless steel

Electrical connector

2 Raychem Cable

Electronics option

5 0.2 to 4.7 volts 3-wire

Compensated temperature range

TD -40 to 125 °C

Accuracy

A1 Industrial 1%

Calibration

CD Total precision and zero and span data

Hazardous area approval

H0 None

Pressure connector

P14 M8 X 1 male

P22 7/16-20 UNF Flat End 74°

P20 3/8-24 UNF Male

P18 M10 x 1 Male

PMP4 2 2 5 - TD - A1 - CD - H0 - P14 (Example configuration)

CE conformity

- RoHS directive 2011/65/EU
- Pressure Equipment Directive 2014/68/EU Sound Engineering Practice
- EMC Directive 2014/30/EU
- BS EN 61326-1: 2013: Electrical Equipment for Measurement, Control and Laboratory Use
- BS EN 61326-2-3: 2013: Particular Requirements for Pressure Transducers

2. State pressure range and units:

Unit options are:

Symbol	Description
bar	bar
mbar	millibar
psi	pounds/sq. inch
kPa	kiloPascal
MPa	MegaPascal

3. State pressure reference: Reference options are:

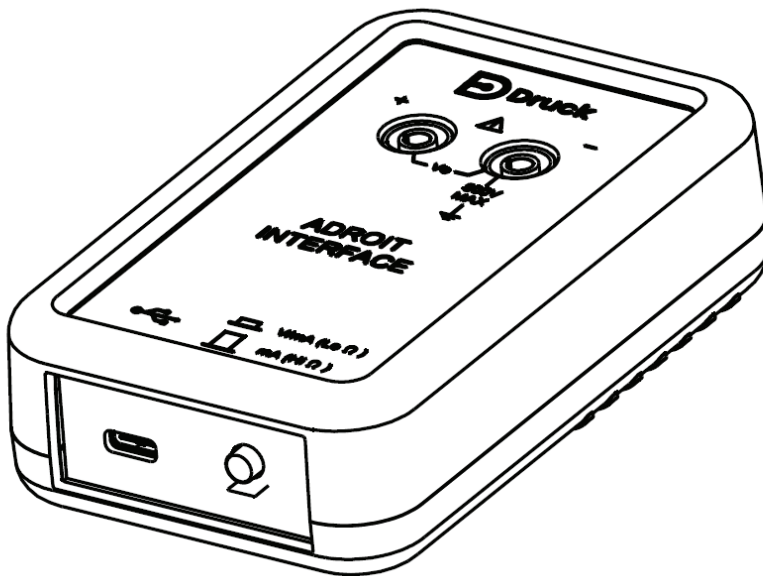
- absolute

See our full motorsport range here:

<https://www.bakerhughesds.com/druck-high-performance-sensors-motorsport>

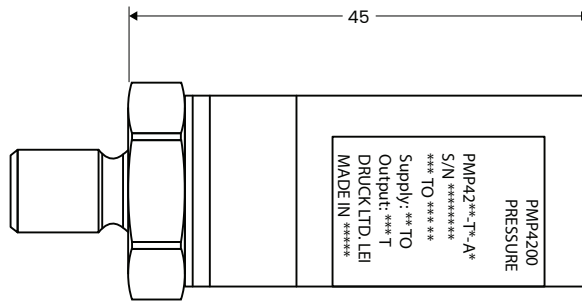
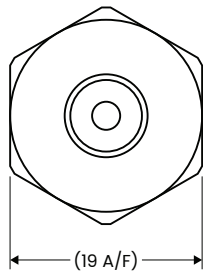
Accessories (to be ordered as separate line items)

1. Interface box Part number : ADROIT-Interface

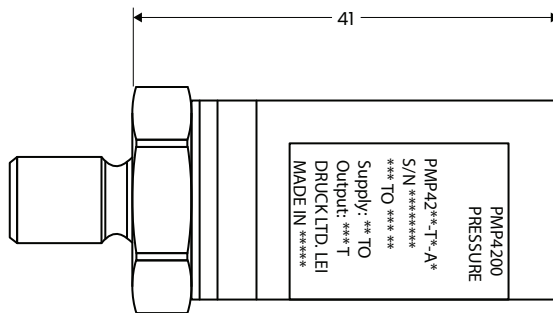


The PMP4200 is based on the same architecture as the ADROIT6200 sensor which allows the use of the ADROIT-Interface. The interface is used with a Windows-based PC or an Android device (laptop, tablet or phone). It enables the user to make small adjustment to the zero and span settings of the sensor for calibration purposes. It is supplied with a USB lead to USB-C (Android device) or USB-A (Laptop).

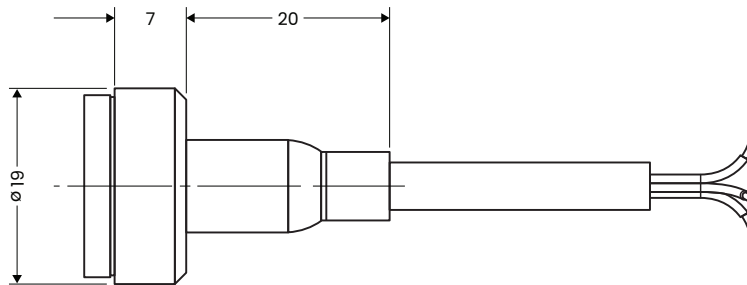
Mechanical drawings



Ranges <10bar



Ranges 10bar and over



RAYCHEM CABLE