4400T Combined pressure and temperature sensor

Druck motorsport combined pressure/temperature transducers

Success in motorsport depends on hundreds of components working together under extreme conditions, and Druck continues to develop pressure transducers that give the ultimate performance. Druck motorsport sensors have become a world leading product line used in Formula, Moto GP, World Rally Championship and the Indy Racing League, amongst others.

The 4400T is a development of the very successful 4400 series pressure sensor, with the addition of an "in-media" temperature probe. This product has been “fine tuned” in design to suit all chassis and engine pressure and pressure/ temperature measurement requirements.

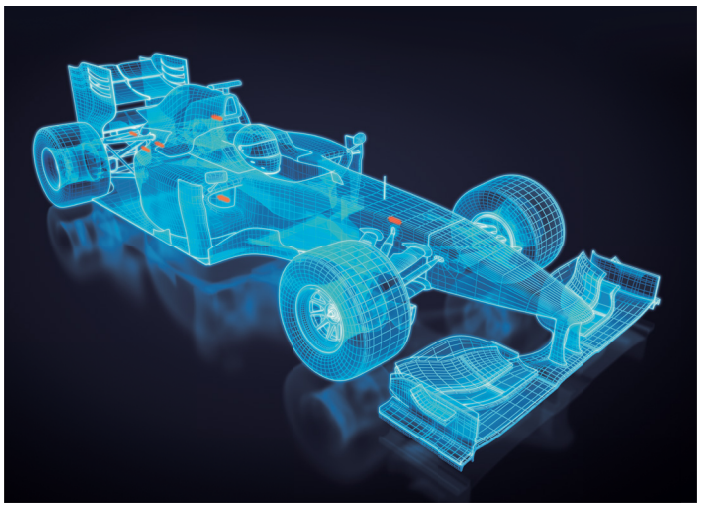
Features

- Race proven technology
- High temperature capability to 185°C
- 14.5 mm diameter
- Amplified output
- Stainless steel construction
- Fully EMC protected
- PT1000 temperature probe

Race proven technology

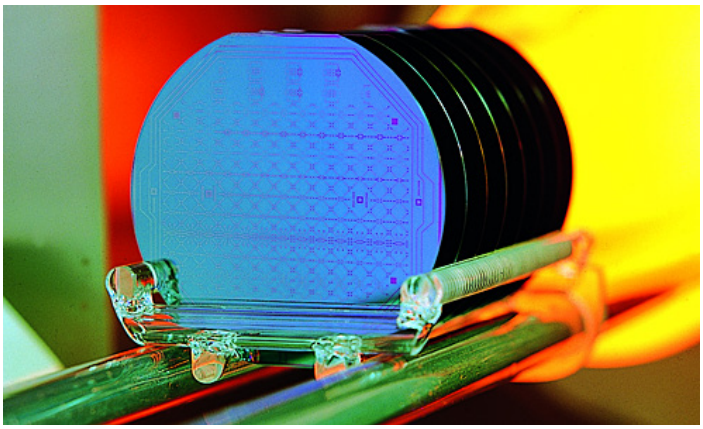
Since 1990 Druck products have been successfully applied to motorsport, and the 4400 Series is a high performance pressure sensor for this harsh environment application.

Reliability remains at the forefront of Druck's design and build philosophy. The combination of high technology sensing elements and advanced signal conditioning and packaging techniques provides reliable and accurate pressure measurements.



Flexible design

The pressure sensing module and the electronics form a completely flexible core. Various configurations of electrical terminations and pressure connectors are available in stainless steel. Druck has considerable experience in solving specific application problems by developing standard designs to suit customer-specific applications.

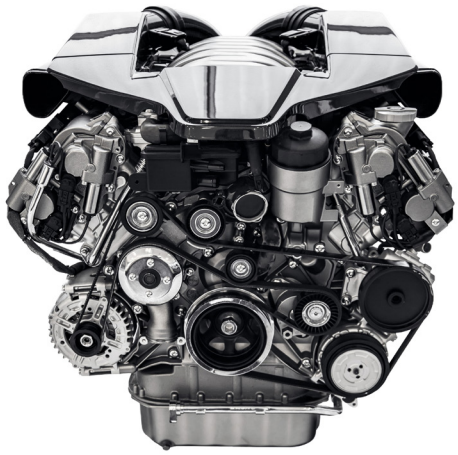


High performance

Druck has a new advanced and comprehensive silicon processing facility and is one of a few companies turning raw silicon into finished pressure sensing products.

Each pressure module is fully temperature cycled to enhance long-term measurement stability. All metalwork is welded to form a rugged housing. Upon completion of the electrical connections the units are again thermally cycled to eliminate any possible defects in application.

This rugged construction enables the 4400 Series to operate under extreme temperature and vibration conditions.



4400T specifications

Pressure measurement

Pressure ranges

1.6, 5, 10, 20, 50, 125, 250 bar absolute

Note: All ranges are 0 based.

Overpressure

- 2 × rated pressure for ranges to 50 bar
- 1.5 x rated pressure for ranges 125 bar and over

Pressure containment

- 4 × rated pressure for ranges to 375 bar

Media compatibility

Fluids compatible with stainless steel 316L and Inconel

Not suitable for media that has an oxygen concentration >21% or other strong oxidizing agents.

This product contains materials or fluids that may degrade or combust in the presence of strong oxidizing agents.

Pressure signal performance specifications

Excitation

12 Vdc ±4 Vdc, unregulated

Supply Current: <5 mA

Output voltage

0.2 to 4.7 Vdc

Zero offset

±50 mV

Span setting

±50 mV

Accuracy

The combined effects of non-linearity and hysteresis

±0.25% FS BSL

Long term stability

<0.1% FS/year

Compensated temperature range

0° to 170°C

Thermal performance

- Thermal zero shift (ref 20°C) : <±1.7% FS
- Thermal span shift (ref 20°C) : <±1.7% FS

Temperature measurement

Probe type: PT1000 to DIN EN60751 class B

Output: 2 wire resistance

Physical specifications

Pressure connection

M8 x 1 Male

Electrical connection

1 m (4.92 ft) of 5 core 26 AWG Raychem 55M cable RW-200-E jacket

Weight

<35 grams (not including cable)

Installation torque

10 Nm will produce negligible zero offset

Environmental specifications

Vibration

50 to 2500 Hz @ 40g, 8 hours per axis, logarithmic sweep at a rate of 0.32 octaves/minute with no effect on calibration

Shock

1000 g, 1 mS half sine pulse in all three axes with no effect on calibration

EMC

Tested to BS EN 61326-2

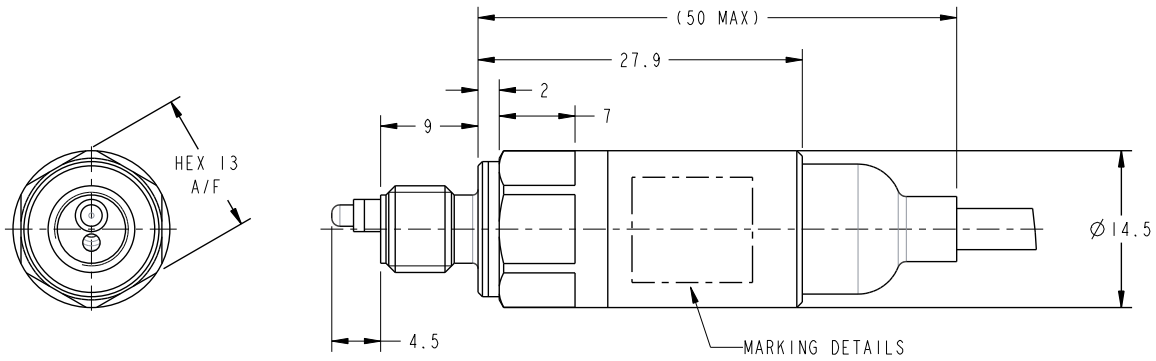
Operating temperature range

-20° to 185°C

Certification

CE marked.

Drawings and dimensions



Wiring Connection Details	
Color	**Function**
Red	+ve supply
Black	0V/common
White	+ve output
Yellow	+ve temp
Blue	-ve temp

Calibration standards

Transducers manufactured by Druck are calibrated against precision pressure calibration equipment, which is traceable to international standards

4400 series ordering information

1) Specify the model number

PMP44 1 1 T - PT - TE - V2 - P14

Model
PMP44 ... PMP44 Amplified

Electrical connection
1 ... 1: Raychem cable

Material of construction
1 ... 1: Inconel 625/SS 316L

Sensor type
T ... T: Pressure/temperature

Probe type
PT ... PT: PT1000 temperature probe

Compensated temperature range
TE ... TE: 0 to 170°C

Output voltage
V2 ... V2: 0.2 to 4.7 volts

Pressure connection
P14 ... P14: M8 x 1 male

2) State the pressure range and units

Example: PMP4411T-PT-TE-V2-P14 0 to 50 bar

Per avere più informazioni
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