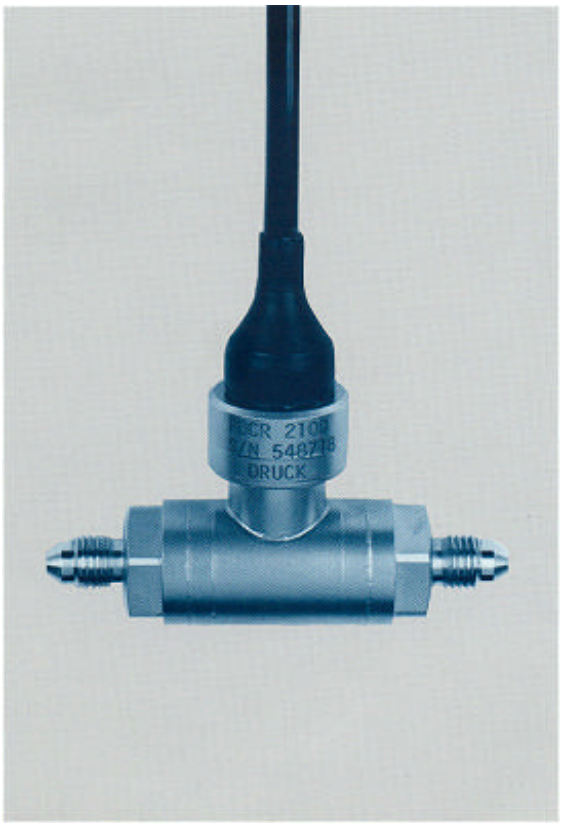
Druck

PDCR 2100 SERIES

Wet/Wet Differential Pressure Transducers

- **High accuracy**
  ±0.1% BSL for ranges to 900 psid
- **Excellent stability**
  ±0.1% FS per 12 months
- **Compatible with corrosive fluids**
  Stainless steel and Hastelloy wetted parts
- **All welded construction**
- **Choice of electrical and pressure connections**



The PDCR 2100 is a small, lightweight differential pressure transducer with standard ranges from 0 to 5 psid through 0 to 900 psid. The transducer is compatible with a wide range of fluids and gases. It combines high accuracy with good static pressure characteristics, and is available with a variety or pressure connections and electrical terminations.

The wetted parts of the positive and negative connections are manufactured from Hastelloy C276 and 316L stainless steel. This permits the transducer to be used with most types of corrosive media found in industrial, chemical and research facilities. The compact construction of the PDCR 2100 is ideal for aerospace applications where space may be limited. Electron beam welding is utilized for all pressure and media containment seals. This both enhances safety in operation and eliminates the need for periodic replacement of 'O' rings which is necessary with many competitive models.

The transducer incorporates a miniature, micromachined silicon piezoresistive pressure sensor which features excellent resistance to vibration, shock and acceleration. Exceptional thermal performance is achieved through the use of a proprietary temperature compensation process. Standard accuracy is better than ±0.1% FS, with the option of ±0.06% FS. Stability is better than ±0.1% FS per 12 months.

Druck manufactures a complimentary range of differential pressure transducers and transmitters for applications where either a high level voltage or current output is preferred. Gauge and absolute pressure transducers and transmitters, measuring from 0 to 1 psi through 0 to 10000 psi, are also available.

STANDARD SPECIFICATION

Unless otherwise stated, all specifications are established at reference conditions.

Operating Pressure Ranges
5, 10, 15, 20, 30, 50, 75, 100, 150, 200, 300, 500 and 900 psid (uni-directional).
For other pressure ranges and bi-directional calibrations, please contact factory.

Static Pressure
30, 100, 500 and 1000 psi.
Static pressure up to 2000 psi, with maximum 200 psi differential pressure range, is available.
Zero shift with static pressure is less than 0.0014% FS per psi.

Overpressure
The operating pressures range can be exceeded by the following multiples causing negligible calibration change:
Positive Connection:
6X for 5 psi range
4X for 10 psi range and above to 2000 psi maximum
Negative Connection:
4X for 5 psi range
2X for ranges 10 psi to 75 psi
150 psi maximum for higher pressure ranges

Pressure Containment

Positive Connection :	6X to 3000 maximum
Negative Connection :	4X to 150 psi maximum

Pressure Media
Positive and Negative Connections:
Fluids and gases compatible with Hastelloy C276 and 316L stainless steel.
Alternative materials are also available.

Fill Fluid
Silicone oil

Transduction Principle
Micromachined silicon, ion implanted strain gauge bridge.

Excitation Voltage
10V at 5 mA nominal

Output Voltage
50 mV for 5 psi range
100 mV for 10 psi range and above
These outputs are for 10V excitation and are ratiometric to the excitation voltage.
For high level voltage and current outputs, please contact factory.

Common Mode Voltage
Typically +1 to +6.5V with respect to the -Ve supply at 10V excitation.

Output Impedance
2000 ohnms nominal

Load Impedance
Greater than 100K ohms for quoted performance.

Resolution
Infinite.

Combined Non-linearity, Hysteresis and Repeatability
±0.1% BSL for all ranges
±0.06% BSL available on request

Stability
±0.1% FS per 12 months

Zero Offset
±3 mV maximum

Span Setting
±10 mV maximum. Units of the same range are matched to closer than ±3 mV.

Operating Temperature Range
-5° to +175°F (-20° to +80°C) standard
Extended operating temperature ranges from -65° to +250°F (-54° to +120°C) are available.

Temperature Effects
PDCR 21X0: ±0.5% FS total error band from 32° to 122°F (0° to 50°C)
PDCR 21X1 : ±1.5% FS total error band from -5° to +175°F (-20° to +80°C)
For special applications, it is possible to provide improved temperature compensation over a wider temperature range.

Vibration
Response less than 0.05% FS/g at 30g peak
10 Hz - 2 kHz, limited by 0.5 inch double amplitude (MIL-STD-810C PROC.514.2-2 Curve L).

Weight
7.7 oz. nominal
Weight varies according to selected pressure connections and electrical termination.

Pressure Connections
1/4" NPT Flat end (male)
1/4" NPT (female)
7/16" UNF (1/4 A.N.) as MS33656-4
For other pressure connections, please contact factory.

Electrical Connection
PDCR 211X : Integral six core shielded cable. Rated NEMA 12.
PDCR 213X : Submersible six core shielded cable. Raged NEMA 6.
PDCR 216X : MIL C26482 6-pin bayonet.
PDCR 217X : DIN 43650 plug/socket connector. Rated NEMA 12
For other electrical connections, please contact factory.

ORDERING INFORMATION

Please state the following:
(1) Type number
PDCR 21XX

Compensated temperature range
- 0 32° to 122°F
- 1 -5° to +175°F

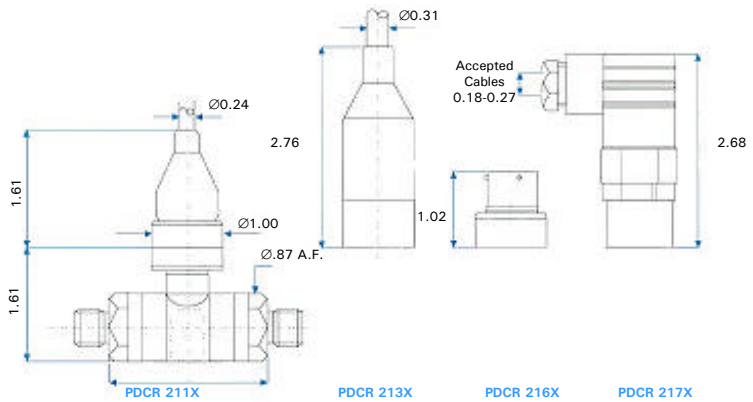
Electrical connection
- 1 Integral cable
- 3 Submersible cable
- 6 MIL C26482 6-pin bayonet
- 7 DIN 43650

(2) Differential pressure range
(3) Static pressure
(4) Pressure connections

Continuing development sometimes necessitates specification changes without notice.

INSTALLATION DRAWINGS

Dimensions: inches



Electrical Connection	
6-pin Bayonet	**PDCR 216X**
Pin A	Supply positive
Pin B	Output positive
Pin C	Output negative
Pin D	Supply negative

Electrical Connection		
6 Core shielded cable	**PDCR 211X**	**PDCT 213X**
Red	Supply positive	Supply positive
White	Supply negative	Supply negative
Yellow	Output positive	Output negative
Blue	Output negative	Output negative
Orange		Monitor supply positive
Black		Monitor supply negative
Shield	N/C to transducer body	Connected to transducer body

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