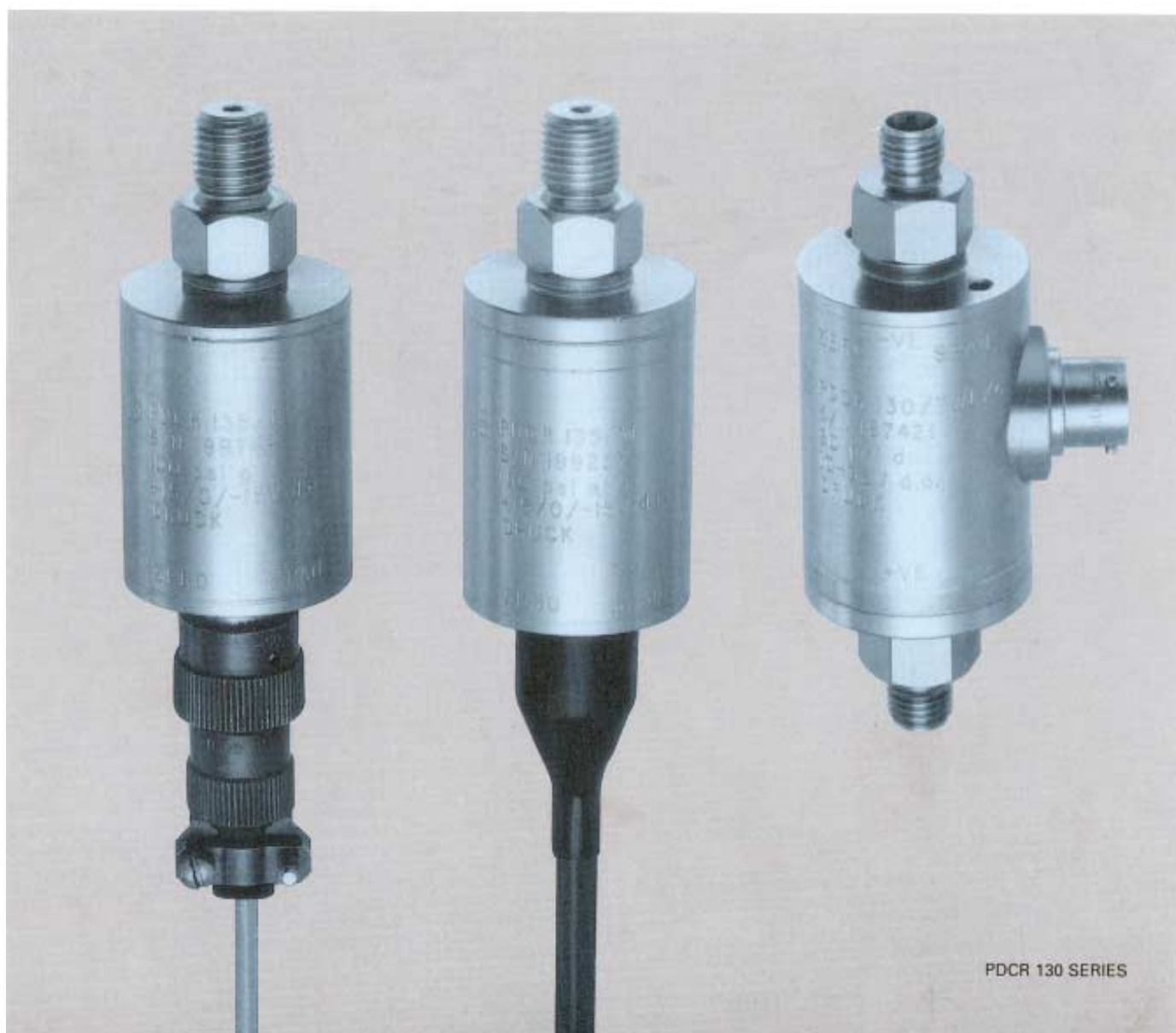


PDCR 130 SERIES

Amplified Output Pressure Transducers

- **Excellent linearity and hysteresis**
 $\pm 0.1\%$ B.S.L. for all ranges
- **Amplified output**
Up to 10V available
- **Good thermal stability**
 $\pm 1.5\%$ total error band -20° to $+80^{\circ}\text{C}$
- **Integral zero and span adjustments**



PDCR 130 SERIES

INTRODUCTION

The PDCR 130 series is a complete range of high level output pressure transducers, featuring the very latest in silicon strain gauge diaphragm, electronic thermal compensation and linearization technology.

The fully encapsulated solid state designs are particularly suitable for industrial, marine and aerospace applications where high vibration and a relatively hostile environment is present.

Pressure ranges from 70mbar to 700 bar are available in combinations of gauge, sealed gauge, absolute and differential modes whilst stainless steel wetted parts ensure wide range pressure media compatibility when required.

Input/output signal isolation, single and dual rail supply operation and integral zero and span potentiometers ensure system interchangeability and ease of calibration.

Type Number and Construction Format:-

Supply Voltage
10-32V d.c.

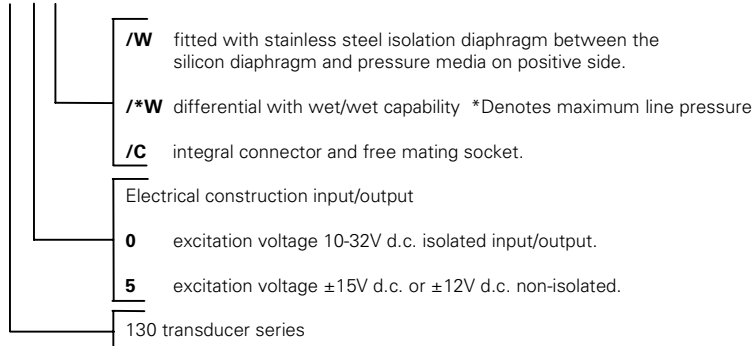
PDCR 130 -Integral vented cable and silicon diaphragm
PDCR 130/C -Integral connector and silicon diaphragm
PDCR 130/W -Integral vented cable and isolation diaphragm
PDCR 130/W/C -Integral connector and isolation diaphragm
PDCR 130/WL -Integral P.T.F.E. cable, wet/wet differential
PDCR 130/WL/C -Integral connector, wet/wet differential

Supply Voltage
±15V d.c. or ±12V d.c.

-PDCR 135
-PDCR 135/C
-PDCR 135/W
-PDCR 135/W/C
-PDCR 135/WL
-PDCR 135/WL/C

The Type Numbering System Denotes the Following Details:-

PDCR 13 X/X



Please refer to operating pressure ranges, pressure media, temperature effects, ordering information and installation drawings to fulfil your requirements

STANDARD SPECIFICATION

Operating Pressure Ranges PDCR 130 and PDCR 135

70mbar, 175mbar, 350mbar, 700mbar, 1, 1.5, 2, 3.5, 5, 7, 10, 15, 20, 35, 60, 70 and 135 bar gauge or sealed gauge.

Sealed gauge not available for ranges up to 10 bar.

PDCR 130/W and PDCR 135/W

350mbar, 700mbar, 1, 1.5, 2, 3.5, 5, 7, 10, 15, 20, 35, 60 and 70 bar gauge or absolute 175mbar gauge only.

135, 200, 350, 500 and 700 bar sealed gauge or absolute.

PDCR 130/WL and PDCR 135/WL

175mbar, 350mbar, 700mbar, 1, 1.5, 2, 3.5, 5, 7, 10, 15, 20 and 35 bar differential.

Other pressure units can be specified, e.g. psi, kPa, etc.

Intermediate pressure ranges, and depth amplified transducers are available, refer to depth/level data sheet.

Overpressure

The rated pressure can be exceeded by the following multiples causing negligible calibration change:-

PDCR 130 and PDCR 135

10x for 70 and 175mbar ranges

6x for 350mbar range

4x for 700mbar to 35 bar ranges

2x for 60 to 135 bar ranges.

PDCR 130/W and PDCR 135/W

10x for 175mbar range

6x for 350mbar range

4x for 700mbar to 20 bar ranges

100 bar for 35 to 70 bar ranges

2x for 135 bar range and above

Pressure containment >1400 bar for 135 to 700 bar ranges.

PDCR 130/W and PDCR 135/WL

Positive side:-

10x for 175mbar range

6x for 350mbar range

4x for 700mbar to 20 bar ranges

100 bar for 35 bar range.

Negative side:-

Must not exceed positive side by greater than:-

6x for 175mbar range

4x for 350mbar range

2x for 700mbar to 5 bar ranges

10 bar for 7 bar to 35 bar ranges.

For bi-directional use in the higher ranges refer to manufacturer.

Maximum Line Pressure (Case Pressure)

2 bar – PDCR 130/2WL & PDCR 135/WL

7 bar – PDCR 130/7WL & PDCR 135/7WL

35 bar – PDCR 130/35WL & PDCR 135/35WL

75 bar available on request.

Pressure Media

PDCR 130 and PDCR 135

Fluids compatible with silicon, titanium, pyrex and epoxy.

PDCR 130/W and PDCR 135/W

Fluids compatible with 316 stainless steel.

PDCR 130/WL and PDCR 135/WL

Positive side:

Fluids compatible with 316 stainless steel.

Negative side:

Fluids compatible with 316 stainless steel, silicon, pyrex and epoxy.

Conducting Pressure Media

When operating the PDCR 130 and PDCR 135 with a conducting pressure media use a fully floating system or earth the +Ve supply.

If this method is not practicable please refer to manufacturer

Transduction Principle

Integrated silicon strain gauge bridge.

PDCR 130 SERIES

Supply Voltage

PDCR 130, PDCR 130/W and PDCR 130/WL
10-32V d.c. @20A isolated from output.

PDCR 135, PDCR 135/W and PDCR 135/WL
+15, 0, -15Vd.c.

+15V (± 0.5 Volts) 1mA nominal

-15V (± 0.5 Volts) 6mA nominal.

+12, 0, -12V d.c. available.

Currents are quoted for zero output current.

Supply Sensitivity

PDCR 130, PDCR 130/W and PDCR 130/WL
0.005% F.S.O./Volt.

PDCR 135, PDCR 135/W and PDCR 135/WL
0.02% F.S.O./Volt.

Polarity reversal protected.

Output Voltage

1V for 70mbar range

2.5V for 175mbar range

5V for 350mbar range and above

Output is isolated on PDCR 130, PDCR 130/W and PDCR 130/WL.

10V maximum available for 350mbar range and above.

Bi-directional output available, please refer to manufacturer.

Output Current

PDCR 130, PDCR 130/W and PDCR 130/WL
2mA maximum.

PDCR 135, PDCR 135/W and PDCR 135/WL
5mA maximum.

Resolution

Infinite.

Combined Non-linearity, Hysteresis and Repeatability

$\pm 0.01\%$ B.S.L. for all ranges

Considered separately on each side for

PDCR 130/WL and PDCR 135/WL.

$\pm 0.05\%$ B.S.L. available for ranges up to 20 bar on request.

Please refer to manufacturer.

Zero Offset and Span Setting

Integral trim potentiometers giving total adjustment of nominally 10% F.S.O.

Operating Temperature Range

-40° to +80°C standard

-40° to +125°C for connector versions.

This temperature range can be extended.

Temperature Effects

PDCR 130 and PDCR 135

$\pm 0.5\%$ total error band

10° to 40°C for 70mbar range

$\pm 0.5\%$ total error band

0° to 50°C for 175mbar range and above

$\pm 1.5\%$ total error band

-20° to +80°C for 175mbar range and above.

PDCR 130/W and PDCR 135/W

$\pm 0.5\%$ total error band

10° to 40°C for 175mbar range

$\pm 0.5\%$ total error band

0° to 50°C for 350mbar range and above

$\pm 1.5\%$ total error band

-20 °C to +80 °C for 350mbar range and above.

PDCR 130/WL and PDCR 135/WL

$\pm 0.5\%$ total error band

10° to 40°C for 175mbar range

$\pm 0.5\%$ total error band

0° to 50°C for 350mbar range and above

$\pm 1.5\%$ total error band

-20 °C to +80 °C for 350mbar range and above.

For special applications it is possible to give improved temperature compensation over a wider temperature range.

Natural Frequency (Mechanical)

PDCR 130 and PDCR 135

28kHz for 350mbar range increasing to

360kHz for 35 bar range.

For more detailed information please refer to manufacturer .

PDCR 130/W and PDCR 135/W

PDCR 130/WL and PDCR 135/WL

10.5kHz for 350mbar range increasing to

210kHz for 35 bar range.

For more detailed information please refer to manufacturer.

Amplifier Bandwidth

-3dB at 2kHz nominal.

Acceleration Sensitivity

PDCR 130 and PDCR 135

0.006% F.S./g for 350mbar range decreasing

to 0.0002% F.S./g for 35 bar range.

PDCR 130/W and PDCR 135/W,

PDCR 130/WL and PDCR 135/WL

0.044% F.S. /g for 350mbar range decreasing

to 0.0005% F.S./g for 35 bar range.

Mechanical Shock

1000g 1ms half sine pulse in each of 3 mutually perpendicular axis will not effect calibration.

Vibration

Response less than 0.05% F.S./g at 30g peak

10Hz-2kHz, limited by 12 mm double

amplitude (MIL-STD 810C Proc 514.2-2 Curve L).

Weight

PDCR 130, PDCR 135, PDCR 130/W and PDCR 135/W

250 grams nominal.

PDCR 130/WL and PDCR 135/WL

300 grams nominal.

Electrical Connection

PDCR 130, PDCR 135, PDCR 130/W and PDCR 135/W

1 metre integral shielded/vented cable supplied.

PDCR 130/WL and PDCR 135/WL

1 metre p.t.f.e. shielded cable supplied.

Longer lengths available on request.

Connector Versions

PDCR 130/C, PDCR 135/C,

PDCR 130/W/C, PDCR 135/W/C,

PDCR 130/WL/C and PDCR 135/WL/C

6 pin bayonet fixed plug to MIL-C 26482 or

DEF 5325 shell size 10 and mating socket

Amphenol type 62GB-16F10-6S supplied as standard.

Pressure Connections

$G^{1/4}B$ } flat end

$1/4"$ N.P.T. }

$G^{1/4}B$ 60° internal cone

$7/16"$ U.N.F. as MS.33656-4

M12 x 1.5 Ermeto

M14 x 1.5mm DIN 3863-8

Others available on request.

PDCR 130/W and PDCR 135/W

For 135 bar range and above

$G^{1/4}B$ } flat end

$1/4"$ N.P.T. }

OPTIONS

Internal "R" calibration facility

An extra electrical connection is provided on the transducer and if the voltage applied (reference to the signal 0 Volt) is less than 0.8V (or open-circuit) the R-cal will not operate, and if greater than 2.4V the output will change in a positive direction by a percentage specified during manufacture (up to the maximum output available).

Depth/level version (see relevant data sheet).

ORDERING INFORMATION

Please state the following:-

- (1) Type number.
- (2) Pressure range
- (3) Gauge, sealed gauge, absolute or differential.
- (4) Maximum line pressure for/*WL versions
- (5) Temperature range
- (6) Pressure connection
- (7) Pressure media
- (8) Supply voltage
- (9) Output voltage

For non-standard requirements, please specify in detail.

Continuing development sometimes necessitates specification changes without notice.

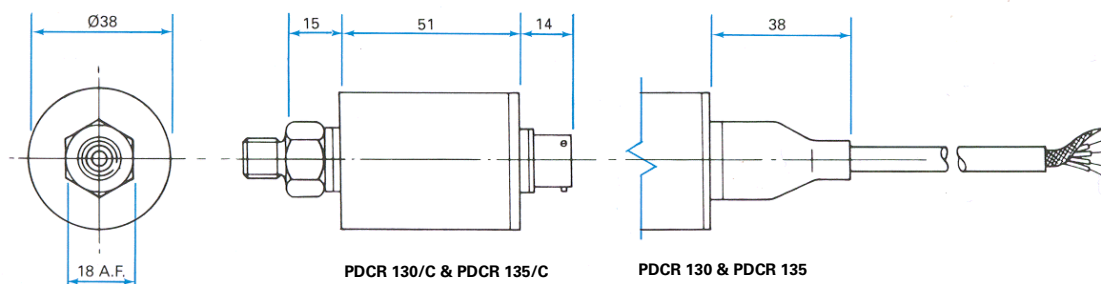
SPECIFIC REQUIREMENTS

In addition to the standard specification detailed in this data sheet the PDCR 130 series can be manufactured to comply with specific requirements where system compatibility dictates that certain critical parameters be maintained.

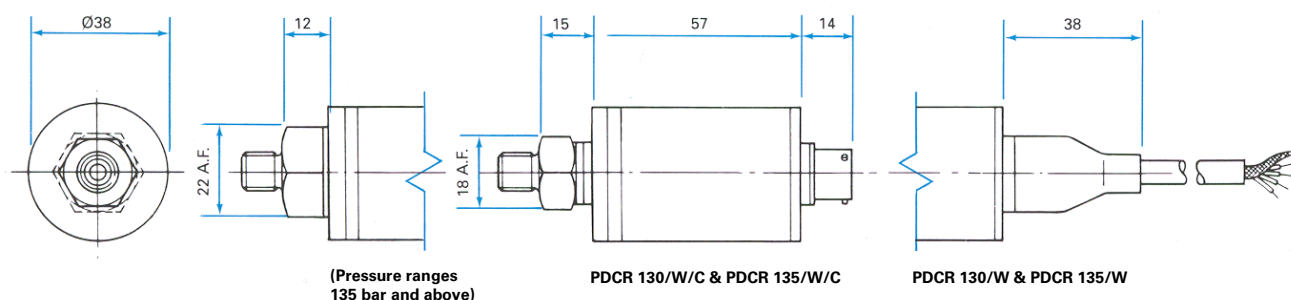
Whether it is an improved temperature performance over a wider temperature range, reduced non-linearity error or a revised mechanical configuration Druck have the engineering experience and capability, and would be pleased to consider your requirements.

Please contact our Sale Office for further information.

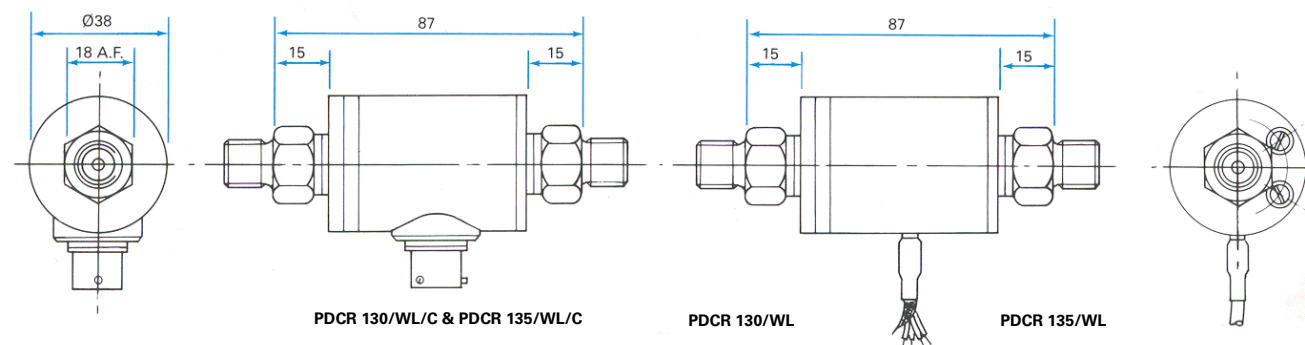
INSTALLATION DRAWINGS Dimensions: mm



PDCR 130, PDCR 135



PDCR 130/W, PDCR 135/W



PDCR 130/WL, PDCR 135/WL

Electrical Connection	Connector Versions		Cable Versions	Function	Function
PDCR 130/C	PDCR 130	PDCR 130	PDCR 130/WL*	PDCR 130	PDCR 135
PDCR 135/C	PDCR 135	PDCR 135	PDCR 135/WL*	PDCR 130/C	PDCR 135/C
PDCR 130/W/C	PDCR 130/W	PDCR 130/W		PDCR 130/W	PDCR 135/W
PDCR 135/W/C	PDCR 135/W	PDCR 135/W		PDCR 130/W/C	PDCR 135/W/C
PDCR 130/WL/C				PDCR 130/WL	PDCR 135/WL
PDCR 135/WL/C				PDCR 130/WL/C	PDCR 135/WL/C
Pin	Cable Colour				
A	Red	Red	Supply positive	Supply positive	
D	White	Blue	Supply 0V	Supply negative	
B	Yellow	Yellow	Output positive	Output positive	
C	Blue	Green	Output negative	0V common	
F connected to C	---	---	R-cal when spec.	R-cal when spec.	
E	Orange	---	R-cal when spec.	R-cal when spec.	

*R-cal not available and screen is connected to body

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