

- Interfaces directly with PLC / SCADA
- 4-20mA loop powered measuring up to 50 mm/s vibration
- Shear mode piezoelectric velocity vibration sensor.
- Dual case for high noise immunity.
- Stainless steel hermetically sealed outer case.
- Top or side exit options.
- Connector or integrated cable options.
- Suitable for use up to 140 °C.
- Available with ATEX and IECEx approvals.

The PZDC series of vibration transducers are robust sealed instruments providing a process current output of 4-20mA proportional to RMS velocity vibration. The series are designed for applications requiring direct integration to SCADA systems (PLC/DCS) and provide an extremely cost effective solution for measuring overall vibration performance.

Available in either a top exit or a side exit hermetically sealed housing, the PZDC range is suitable for measuring cyclic vibration a wide range of critical rotating machinery, typically mounted on the bearing housing or casing to detect bearing wear and absolute vibration.

The piezo-electric shear mode sensor, amplifier and integrator are contained within an inner metal enclosure, which is electrically and thermally insulated from the outer stainless steel body. The arrangement prevents the opportunity for earth loops eliminating electrical interference, and in addition minimises thermal shocks and base strain effects. The inner enclosure is connected to the 0V of the two wire system and is therefore an effective electrical screen. External connections are available through a wide range of integral cable and connector options.



Measurement Performance

Measurement Range:	Up to 50 mm/s
Hi / Lo Output:	4.0 mA to 20.0 mA Loop Powered
Accuracy:	± 5% at 80 Hz
Current Loop Sensitivity:	0 – 15 mm/s, 0.94 mA / mm/s
Options	0 – 20 mm/s, 0.80 mA / mm/s 0 – 25 mm/s, 0.64 mA / mm/s 0 – 50 mm/s, 0.32 mA / mm/s
Temperature Response:	< 8% up to 120 °C
Frequency range:	10.0 Hz to 1.0 kHz 1.0 dB response
Transverse Sensitivity:	< 5 %
Electrical Noise	<0.1 mm/s rms broadband
Mounted Resonant Frequency:	>15 kHz

Electrical Interface

Maximum loop resistance:	500 Ohms at +35.0V 0.0 Ohms at +15.0V 25 x (V – 15) Ohms
Input Voltage Range:	+15.0 to +35.0 Vdc
Recommended Drive:	250 Ohms, +24.0 Vdc
Grounding:	Dual case arrangement with Cable screen not connected at accelerometer end, connect to instrument earth at monitor end.
Maximum Cable Length:	Limited according to loop resistance as above. Refer to ATEX/IECEX certs for Ex applications
Case Isolation:	>100 MOHM
Settling Time	< 20 sec

Environmental Performance

Operating Temperature Range:	-40 °C to +140 °C Permissible to 150 °C for short periods.
Vibration Limit	200 g peak at 120 Hz for 10 mins
Shock Limit:	5000 g
Sealing:	Fully welded construction with Hermetically sealed integral connector to IP68. Integral cable available to IP66/IP67 or IP68.
Base Strain Sensitivity	0.0002 mm/s / uStrain

General Information

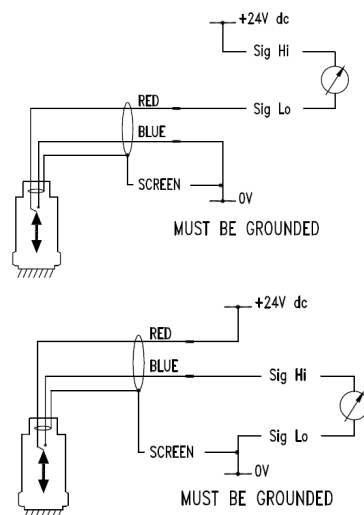
Sensing Element:	Piezoelectric Shear Mode PZ-27 lead zirconate titanate
Case Material:	Stainless Steel 303 S31 body (316, Inconel 600/625 options)
Mass	PZDC Straight 95 grams PZDC4 Side Exit 150 grams (excluding cable)
Mounting Options	M6 x 1.0, M8 x 1.25 & ¼”- 28UNF

Multi-Agency Approval

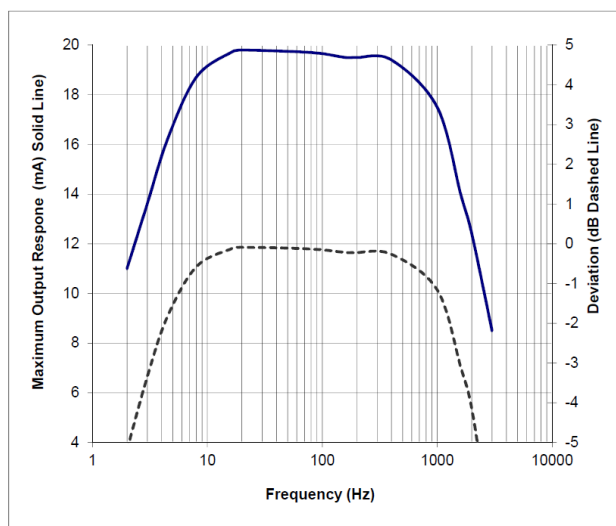
ATEX / IECEX	Ex II 1 GD / Ex I M1 Ex ia IIC T4 Ga Ex ia IIIC T130°C Da Ex ia I Ma (-40°C ≤ Ta ≤ +120°C)
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Connections

Connector Options	2 pin MIL-C-5015, M12
Cable Options	Integral Teflon type, SWA and conduit options. PU for IP68 applications



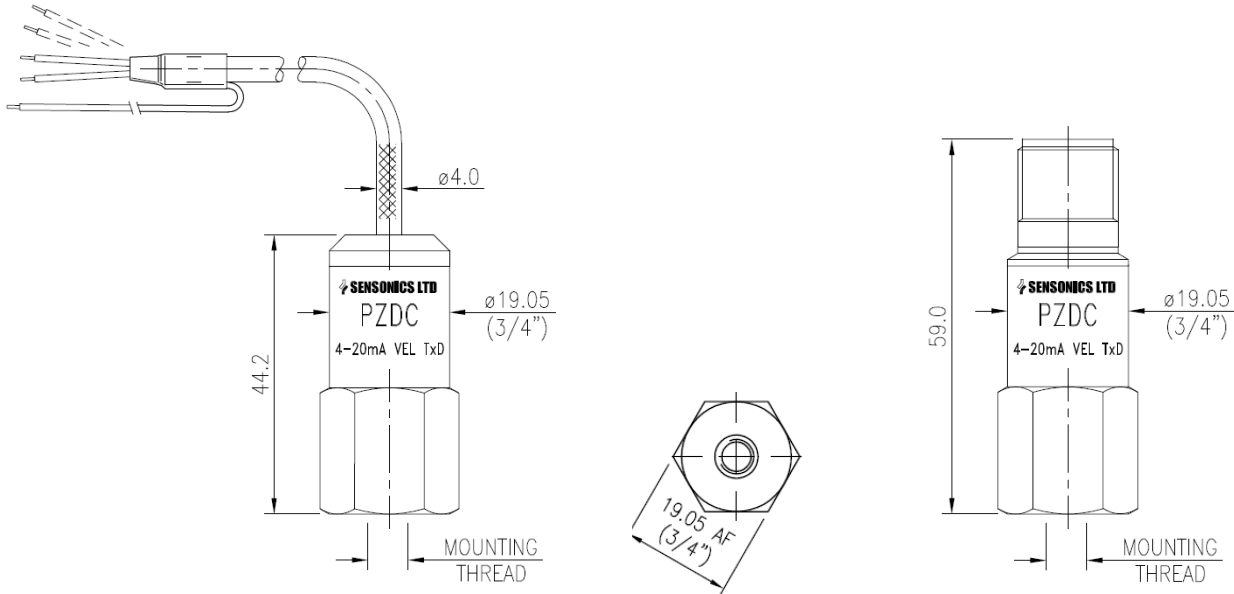
Connection Schemes



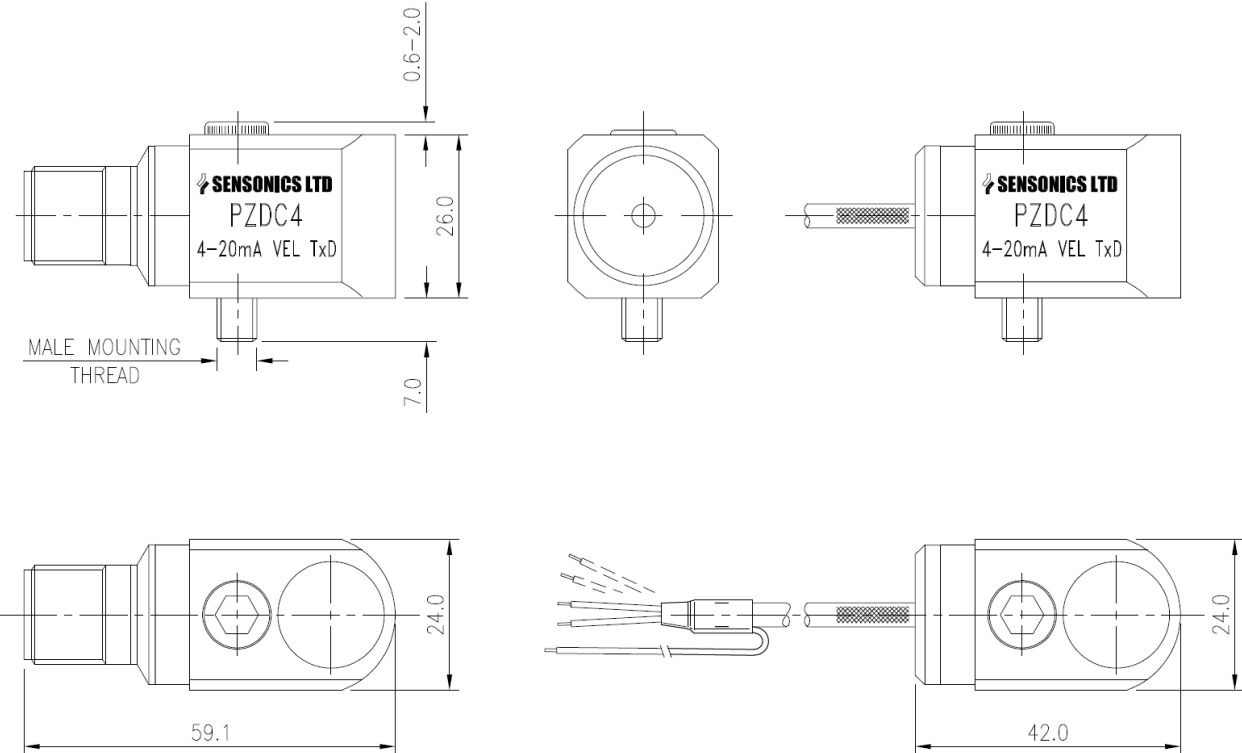
Typical Frequency Response

PZDC Mechanical Configurations

PZDC top exit



PZDC4 Side Exit



Velocity Sensor Ordering Information

PZDC **A** - **B** **C C** **D D** **E** **F** **G**

Mechanical Configuration

PZDC - Top Exit
 PZDC4 - Side Exit

Electrical Configuration

5 – 2 wire 4-20mA loop power

Connector Method

6A – Integral PVC Cable Unarmoured 80°C
 6B – Integral PVC Cable SWA Armour 80°C
 6C – Integral Teflon Cable Unarmoured 140°C
 6D – Integral Teflon Cable SWA Armour 140°C
 7G - Integral PU Cable, Submersible IP68, 10 Bar
8E - Integral Connection, 2-pin MIL-C-5015
 8F - Integral Connector, BNC
 8H - Integral Connector, 3-pin MIL-C-5015
 8K - Integral Connector, 5-pin M12
 9C - Integral Teflon with Convoluted Conduit
 PTFE Braided Conduit available for PZDC4 - consult sales

Cable Length

05 - Specify in metres (e.g 5m)
5m and **10m** are standard

Output

1 – 0 - 15 mm/s
 2 – 0 - 20 mm/s
3 – 0 - 25 mm/s
 4 – 0 - 50 mm/s

Thread type

1 – M8 x 1.25
 2 – ¼”-28UNF
 4 – M6 x 1.0
 9 – M8 Hex Hd Bolt (PZDC4 only)
 Note:- PZDC - Female thread, PZDC4 - Bolt

Multi-Agency Approval

0 - None
 1 - ATEX/ IECEx

Note

1. Standard options on shorter lead time are highlighted in bold
2. CERT - CAL1 spot frequency (issued as standard)
3. CERT - CAL2 frequency sweep, fixed amplitude (please specify)



Sensonics Ltd
 Northbridge Road
 Berkhamsted
 Herts, HP4 1EF
 United Kingdom
 Tel: +44 (0)1442 876833
 Fax: +44 (0)1442 876477
www.sensonics.co.uk