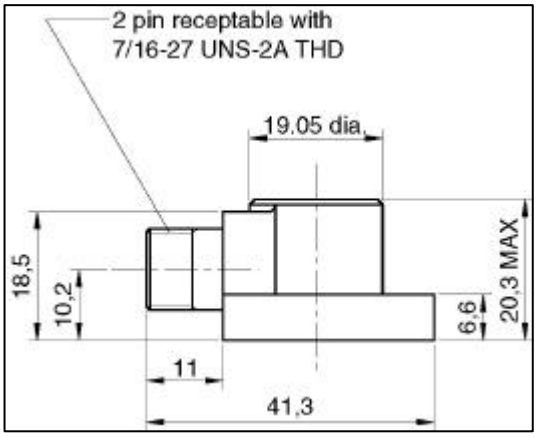
Brüel & Kjær Vibro

Accelerometer type 8315 data sheet



1. Application

Charge type accelerometer.

2. Usage

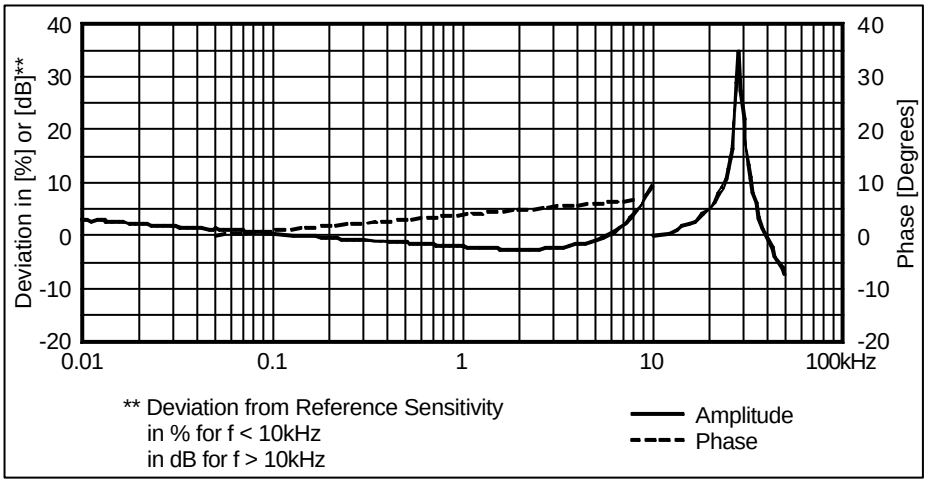
The 8315 Accelerometer is designed for permanent vibration monitoring installations in a wide variety of applications. It is intended as a general-purpose monitoring transducer. It may be used in areas where there is radiation.

The accelerometer utilises a "shear" construction that significantly reduces transient temperature and base strain outputs, while maintaining a high resonance when mounted and a high operating temperature.

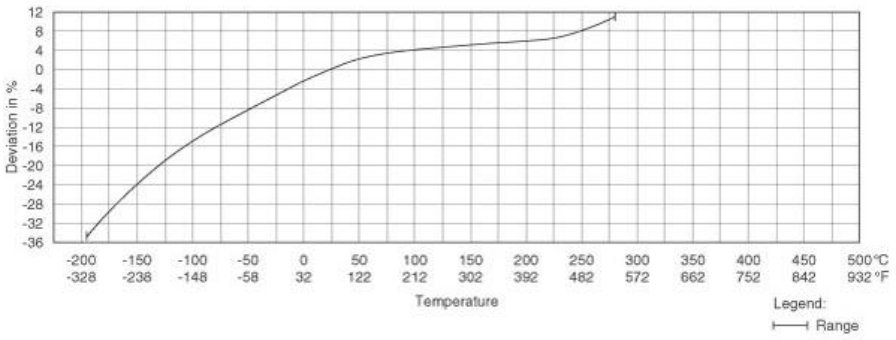
3. Technical Data

Dynamic:

Sensitivity (Axial): ..... 10 pC/ms^{-2}, ±5%
Measuring range (peak): .....±20,000 ms^{-2}
Resonant frequency, typical: ..... 28 kHz
Frequency response: ..... ±10%: 1 Hz to 10 kHz



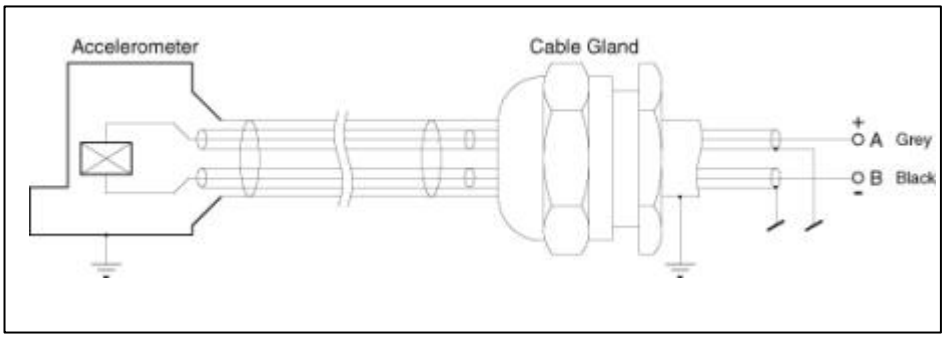
Transverse response:
Resonance frequency, typical:..... 9.4 kHz
Maximum sensitivity:.....<4%
Amplitude linearity:..... >1% increase per 2,000 ms^{-2}
Temperature response, typical: ..... ±10% from -53°C to +125°C



Typical temperature response

Electrical:

Resistance, typical
Between signal pins (+25°C):.....>10 GO
Between signal pins (max temp.):.....>50 MO
Each signal pin to case (+25°C): .....>10 GO
Each signal pin to case (max temp.): .....>50 MO
Capacitance, typical
Between signal pins, excl cable: ..... 12,2 nF
Either signal lead to case:..... <30 pF
Unbalance between pins: .....<2 pF
Base strain sensitivity, typical in base plain at 250µe: ..... 0.008 ms^{-2}/µe
Temperature transient sensitivity, typical:
with 3 Hz high pass filter:.....0.05 ms^{-2}/°C
Isolation (500 VDC at -50°C to 125°C): .....>100 MO
Grounding: .....Signal wires isolated from case



Electrical layout

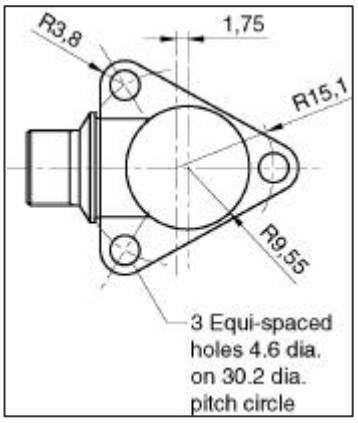
Environmental:

Maximum acceleration limits (peak)
Shock limit:..... 10,000 ms^{-2}
Sinusoidal vibration limit: ..... 5,000 ms^{-2}
Temperature range (accelerometer only): ..... -196°C to +260°C
Electromagnetic sensitivity, 50 Hz, 38 mT: typical:..... 25 ms^{-2}/T
Enclosure protection with cable integrated:.....IP 67
Accelerometer hermetically sealed.

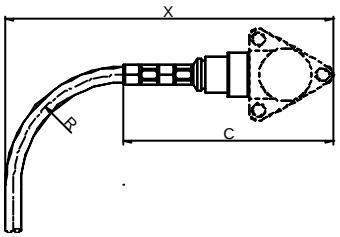
Physical:

Weight (cable not included): ..... 62 g
Case material: ..... Stainless steel, 316L
Polarity: ..... Positive on left pin or gray signal wire
Acceleration directed from base into body
Piezoelectric element construction: ..... Shear, Piezite P-8®
Footprint: ..... ARINC
Mounting: ..... 3 x M4
Torque: ..... 2.9 Nm

ARINC Footprint:



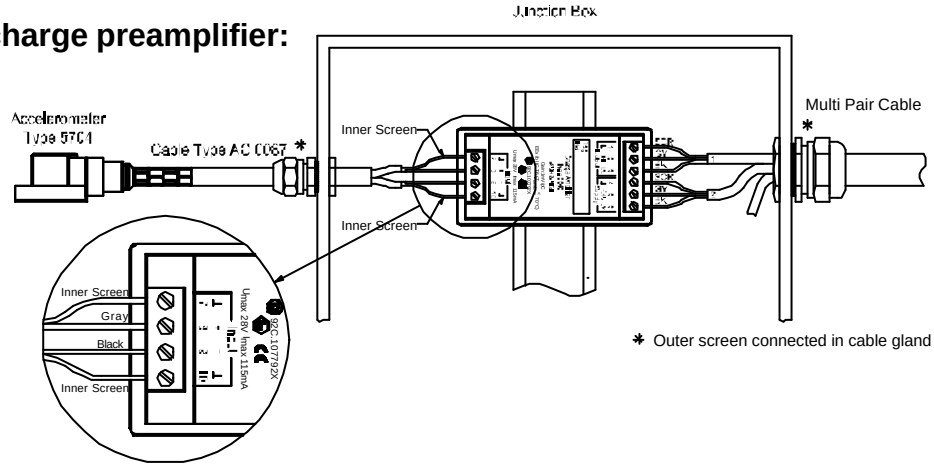
Mounting space:



Minimum bending radius (R): 39 mm
Accelerometer height w. integrated cable(C): 70 mm
The mounting space can be calculated as $X_{min} = C + R$

The figure shows the dimension for the Type 8315 with connected cable.

Connection to charge preamplifier:



Further information can be found in the Accelerometer Catalogue, BPD0040.

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