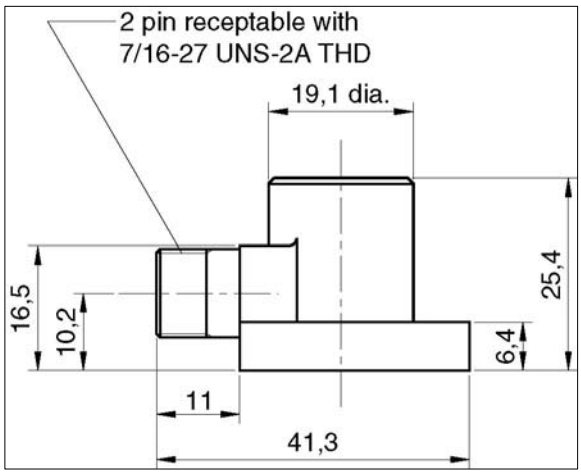
Brüel & Kjær Vibro

Accelerometer type 8324 data sheet

1. Application

Charge type accelerometer.



2. Usage

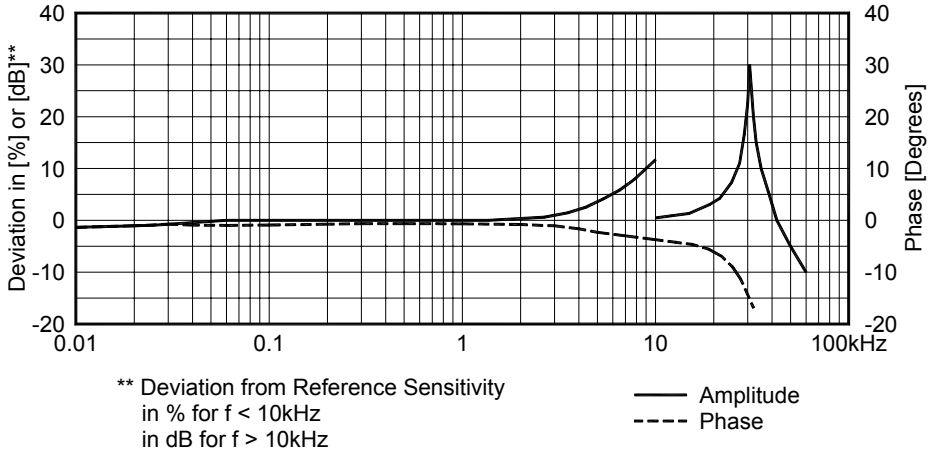
The 8324 is especially well suited for use in nuclear power plants and in areas with high temperatures. The accelerometer utilises a compression type element to provide excellent temperature stability and a wide operational bandwidth.

Type 8324 is well suited for use with permanently installed machine condition monitoring systems.

3. Technical Data

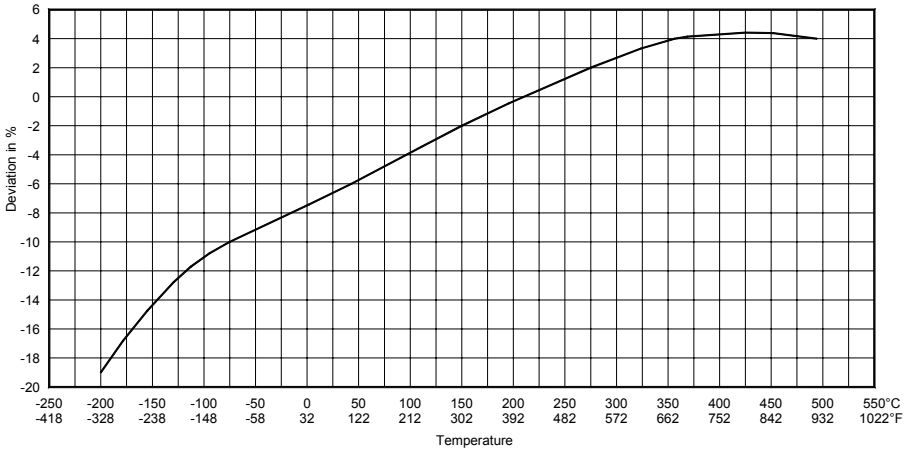
Dynamic:

Sensitivity (Axial): ..... 1.0 pC/ms^{-2}, ±5%
Measuring range (peak): ..... ±20,000 ms^{-2}
Resonant frequency, typical: ..... 30 kHz
Frequency response: .....±10%: 1 Hz to 10 kHz



Typical frequency response

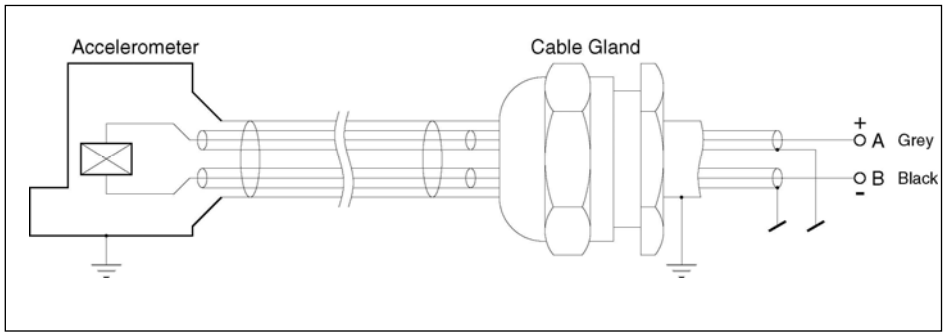
Transverse response:
Resonance frequency, typical: ..... 9.4 kHz
Maximum sensitivity:..... <3%
Amplitude linearity:.....>1% increase per 5,000 ms^{-2}
Temperature response, typical:.....±10% from -60°C to +482°C



Typical temperature response

Electrical:

Resistance, typical
Between signal pins (+25°C): .....>1 GOhm
Between signal pins (max temp.):.....>100 MOhm
Each signal pin to case (+25°C): .....>1 GOhm
Each signal pin to case (max temp.): .....>10 MOhm
Capacitance, typical
Between signal pins, excl cable: ..... 725 pF
Either signal lead to case:..... <30 pF
Base strain sensitivity, typical in base plain at 250με: ..... 0.02 $ms^{-2}/\mu\varepsilon$
Temperature transient sensitivity, typical:
with 1 Hz high pass filter:..... 10 $ms^{-2}/°C$
Isolation (500 VDC at -50°C to 125°C): .....>100 MOhm
Grounding: .....Signal wires isolated from case



Electrical layout

Environmental:

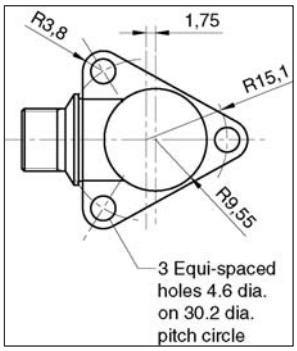
Maximum acceleration limits (peak)
Shock limit:..... 20,000 ms^{-2}
Sinusoidal vibration limit: ..... 10,000 ms^{-2}
Temperature range (accelerometer only):..... - 196°C to +480°C
Electromagnetic sensitivity, 50 Hz, 38 mT: typical:.....20 ms^{-2}/T
Radiation hardening
Integrated gamma dose:.....Up to 100 x 10^6 rad
Integrated neutron flux: ..... Up to 3 x 10^{18} Neutron/cm^2

Enclosure protection with cable integrated: ..... IP 67
Accelerometer hermetically sealed.

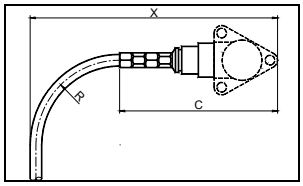
Physical:

Weight (cable not included):.....66 g
Case material: ..... Inconel
Polarity:.....Positive on left pin or gray signal wire
Acceleration directed from base into body
Design configuration:..... Compression element
Footprint: ..... ARINC
Mounting:.....3 x M4
Torque: .....1.6 Nm

ARINC Footprint:



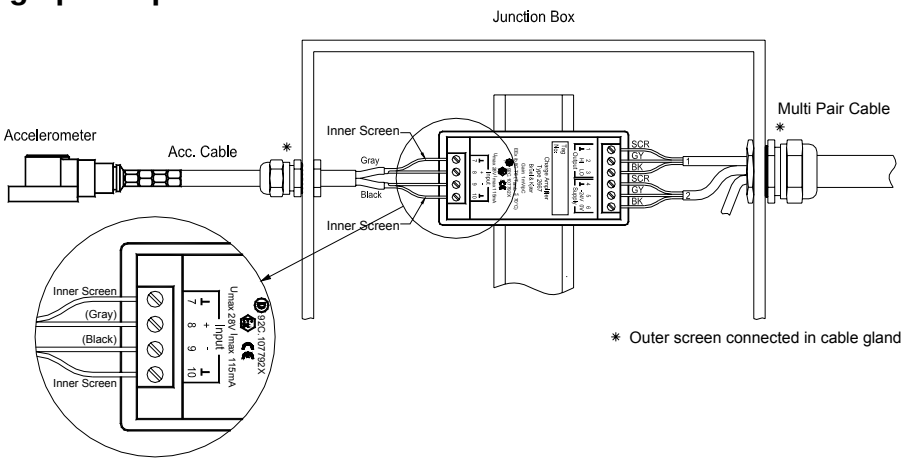
Mounting space:



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 8324 with integral connected cable.

Connection to charge preamplifier:



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