

ASQ[®]-D

- 9.807 to 49.03 m/s²
- Measurement of minute vibrations
- IP67

Servo Type Acceleration Transducer



**Highly sensitive measurement of minute vibration
Most suitable for vibration measurement of
vehicles, structures and the ground**

- Acceleration measurement in a range of DC to 100 Hz is possible. (If desired, a model covering a range of DC to 300 Hz is available.)
- Compact and lightweight while ensuring high accuracy and high output

Unlike conventional strain-gage acceleration transducers, the ASQ series acceleration transducers have a servomechanism that ensures accurate, stable and reliable measurement of minute vibration with high sensitivity. A dedicated VAQ signal conditioner is available as the mating instrument. Measuring targets include vibration generated by running vehicles, earthquake or wind in structures and the ground as well as general low-frequency vibration.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within ±0.03% RO
Hysteresis	Within ±0.05% RO
Rated Output	±5 V (10 V) ±5%

Environmental Characteristics

Compensated Temperature	-10 to 60°C
Safe Temperature	-20 to 80°C
Temperature Effect on Zero	Within ±0.05% RO/°C
Temperature Effect on Output	Within ±0.05% RO/°C

Electrical Characteristics

Power Supply	±11 to ±16 VDC, 40 mA or less (±12 V recommended) Supplied from dedicated signal conditioner VAQ-700A, if used.
Cable	N-41: 6-conductor (0.2 mm ²) vinyl shielded dedicated cable (For connection to VAQ-700A), 5.8 mm diameter by 50 m long (Option) N-45: 6-conductor (0.2 mm ²) vinyl-shielded 1-G cancel cable, 5.8 mm diameter by 40 cm long Applicable connector 272FCW-12P (Optional) (WITCO OF JUPITER DENTSU Co., Ltd.)

Mechanical Properties

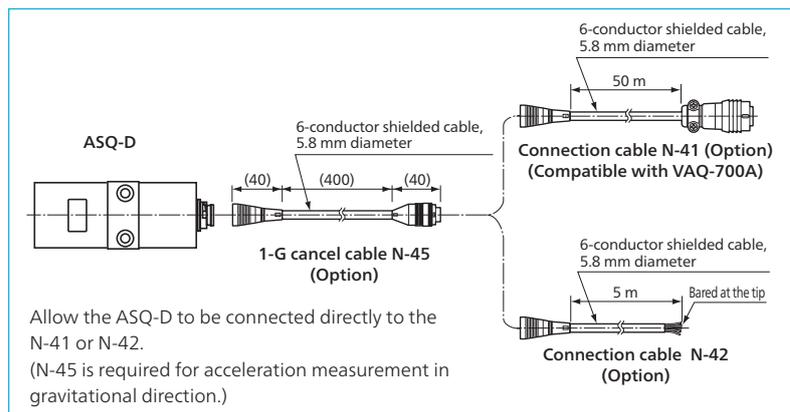
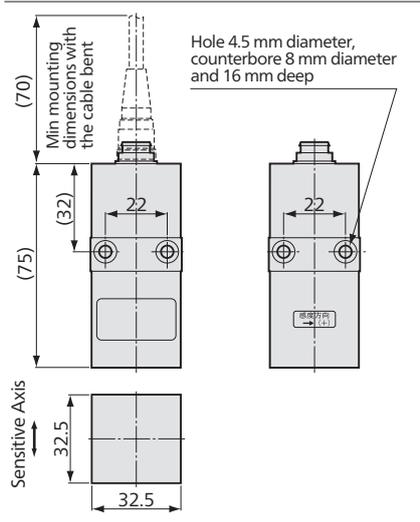
Frequency Response	DC to 100 Hz (Sensitivity deviation ±10%); DC to 300 Hz available on request
Transverse Sensitivity	0.3% RO or less
Degree of Protection	IP67 (IEC 60529)
Weight	Approx. 220 g (Excluding cable)

Standard Accessories Hexagon socket head bolts (2xM4 x 25)
Instruction Manual

Optional Accessories Connection cables N-41 50 m long & N-42 5 m long
1-G cancel cable N-45 40 cm long

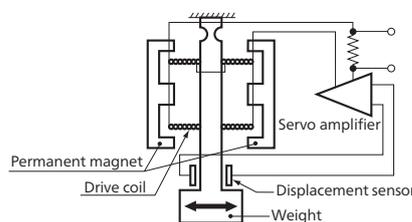
Models	Rated Capacity
ASQ-D-1	±9.807 m/s ² (±1 G)
ASQ-D-2	±19.61 m/s ² (±2 G)
ASQ-D-5	±49.03 m/s ² (±5 G)

Dimensions



Example of basic structure of servo type acceleration transducer

With the basic structure shown, an applied acceleration displaces the weight from the neutral position. The displacement sensor detects the displacement quantity and sends via the servo amplifier the signal to the drive coil that is fixed to the weight support. When the signal current flows to the drive coil placed in a magnetic field generated by the permanent magnet, the electromagnetic force returns the weight to the original position. Since the current is proportional to the applied acceleration, a proportional voltage to the acceleration is output from both ends of the resistor inserted in the current loop.



- Static measurement / Dynamic measurement

