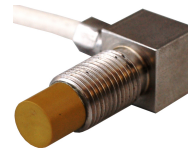


## DATA SHEET

# vibro-meter®

## TQ442, EA402 and IQS450 proximity measurement system



TQ442



IQS450



### KEY FEATURES AND BENEFITS

- From the vibro-meter® product line
- Non-contact measurement system based on eddy-current principle
- Ex certified versions for use in hazardous areas (potentially explosive atmospheres)
- Right-angle (90°) mount sensor
- 1, 5 and 10 m systems
- Temperature-compensated design
- Voltage or current output with protection against short circuits
- Frequency response: DC to 20 kHz (-3 dB)
- Measurement range: 2 or 4 mm
- Temperature range: -40 to +180 °C

### APPLICATIONS

- Shaft relative vibration and gap/position measurement chains for machinery protection and/or condition monitoring
- Ideal for use with VM600<sup>Mk2</sup>/VM600 and VibroSmart® machinery monitoring systems
- For applications in confined spaces / difficult-to-access areas

### DESCRIPTION

The TQ442, EA402 and IQS450 form a proximity measurement system from, Meggitt's vibro-meter® product line. This proximity measurement system allows contactless measurement of the relative displacement of moving machine elements.

TQ4xx-based proximity measurement systems are particularly suitable for measuring the relative vibration and axial position of rotating machine shafts, such as those found in steam, gas and hydraulic turbines, as well as in alternators, turbo-compressors and pumps.



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## SPECIFICATIONS *(continued)*

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### Approvals

Conformity	: CE marking, European Union (EU) declaration of conformity. EAC marking, Eurasian Customs Union (EACU) certificate/ declaration of conformity.
Electromagnetic compatibility	: EN 61000-6-2:2005. EN 61000-6-4:2007 + A1:2011. TR CU 020/2011.
Electrical safety	: EN 61010-1:2010
Environmental management	: RoHS compliant (2011/65/EU)
Hazardous areas	: Ex approved versions (see <b>Potentially explosive atmospheres on page 3</b> )
Russian federal agency for technical regulation and metrology (Rosstandart)	: Pattern approval certificate No 60859-15

### System calibration

Calibration temperature	: +23°C ±5°C
Target material	: VCL 140 steel (1.7225)

Note: If special calibration is required, please define the alloy precisely or supply a sample of alloy (minimum: Ø50 mm / 1 cm thick) according to Meggitt SA drawing number PZ 7009/1.

### Total system length

The total system length (TSL) is the sum of the length of the TQ4xx transducer's integral cable and the length of the EA40x extension cable. The supported TSLs can be obtained from different combinations of cables.

Total system lengths

• 1 m	: 1.0 m integral cable with no extension cable
• 5 m	: 0.5 m integral cable + 4.5 m extension cable. 1.0 m integral cable + 4.0 m extension cable. 1.5 m integral cable + 3.5 m extension cable. 2.0 m integral cable + 3.0 m extension cable. 5.0 m integral cable with no extension cable.
• 10 m	: 0.5 m integral cable + 9.5 m extension cable. 1.0 m integral cable + 9.0 m extension cable. 1.5 m integral cable + 8.5 m extension cable. 2.0 m integral cable + 8.0 m extension cable. 5.0 m integral cable + 5.0 m extension cable. 10.0 m integral cable with no extension cable.

Note: The combination of cables selected for a particular total system length depends on the application. For example, to obtain the optimum location for the separation between the integral and extension cables or to eliminate the requirement for an extension cable.

### Total system length trimming

Due to the characteristics of the coaxial cable, an "electrical trimming" of the nominal length of extension cables is necessary to optimize the system performance and the transducer interchangeability.

TSL for a 1 m measurement chain	: 0.9 m minimum
TSL for a 5 m measurement chain	: 4.4 m minimum
TSL for a 10 m measurement chain	: 8.8 m minimum