

Emerson PR6423/010-110 CON021

Armoured Eddy Current Transducer System

Product scope

- Uses protective cable armour around the five-metre probe lead.
- Fits an M10 x 1 mounting thread with the standard 25 mm sensing body.
- Produces a CON021 output proportional to the shaft gap across the calibrated range.

Manufacturer source

Exact-model technical record

Verified model-specific overview, function, operating principle, applications and technical data.

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Emerson PR6423/010-110 CON021

Armoured Eddy Current Transducer System

Product overview

Emerson PR6423/010-110 CON021 is an M10 x 1 armoured 8 mm eddy current probe system with a 5 m LEMO cable and CON021 converter. It delivers a linearized two-millimetre shaft-displacement measurement for rotating machinery protection.

PR6423/010-110 CON021 uses the standard 25 mm sensing-body length with M10 x 1 thread and protective cable armour. The option code defines a five-metre cable without an adapter plug, terminated for the CON021 converter.

High-frequency excitation at the probe creates an eddy-current field in the shaft surface. Shaft approach changes the coil response, and the converter translates that response into the voltage used for vibration and position channels.

Armour protects the cable mechanically but does not remove bend-radius or temperature restrictions. Thread engagement, cable routing, steel target properties and the complete five-metre electrical length must remain within the calibrated installation.

Technical specifications

Probe tip diameter	8 mm
Nominal range	2 mm
Static gap setting	0.5 mm
Scale factor	8 V/mm $\pm 5\%$ from 0 to 45 °C
Linearity deviation	± 0.025 mm
Dynamic response	0 to 20 kHz
Probe thread	M10 x 1
Cable armour	Provided
Sensing-body length	25 mm
Overall probe-body length	34 mm
Adapter plug	Not fitted
System cable length	5 m
Termination	LEMO
Minimum target diameter	25 mm
Calibration steel	42CrMo4 / AISI 4140
Ingress protection	IP66
Hot-end temperature range	-35 to 180 °C
Converter and cable temperature range	-35 to 150 °C
Signal converter	CON021
Converter output span	-2 to -18 V
Converter linearity error	1% maximum

PR6423/010-110 CON021 function and operating principle

Ordered configuration

This option is the straight M10 probe with cable armour, standard body length and no adapter plug.

System role

It supplies the primary radial-vibration or axial-position signal required by a machinery-monitoring channel.

Selection and installation

Mounting stiffness and undisturbed cable routing are critical because mechanical movement outside the shaft gap becomes measurement error.

Functional path

- Uses protective cable armour around the five-metre probe lead.
- Fits an M10 x 1 mounting thread with the standard 25 mm sensing body.
- Produces a CON021 output proportional to the shaft gap across the calibrated range.

Application scenarios

- Turbine bearing brackets use the armoured cable where the route passes near metalwork that could abrade an unprotected lead.
- Gearboxes can measure shaft relative vibration before it reaches damaging levels.
- Condition-monitoring systems record the converter output to correlate rotor movement with speed and load changes.

PR6423/010-110 CON021 engineering checks

Performance

- The calibrated scale factor is 8 V/mm with the stated tolerance from 0 to 45 °C.
- The transducer follows shaft motion from static displacement through 20 kHz dynamic content.
- Differential sensitivity linearity is held within the documented ± 0.025 mm deviation.

Integration

- The LEMO cable end mates to the CON021 converter used for signal conditioning.
- Protection systems must accept the standard negative-voltage output of the converter.
- A five-metre total electrical length is part of the calibration and must be preserved.

Safety & Compliance

- Cable armour provides mechanical protection but must remain free of crushing and sharp bends.
- The probe bracket should prevent the tip from contacting the shaft throughout expected movement.
- Installation work requires the monitored machine to be secured against rotation before gap adjustment.

Critical technical note

Protect the armour and connector on PR6423/010-110 CON021 during installation; kinks or cable-length changes invalidate the matched measurement path.

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