

Emerson PR6423/10R-010 CON021

Reverse-Mount Eddy Current Transducer System

Product scope

- Measures non-contact shaft displacement with an 8 mm eddy current probe and two-millimetre range.
- Uses a reverse-mount 3/8-24 UNF body where rear access is required.
- Pairs a five-metre LEMO cable configuration with the CON021 linearizing converter.

Manufacturer source

Exact-model technical record

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

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Emerson PR6423/10R-010 CON021

Reverse-Mount Eddy Current Transducer System

Product overview

Emerson PR6423/10R-010 CON021 is a reverse-mount 8 mm eddy current transducer system with a 3/8-24 UNF probe, 5 m total cable and CON021 signal converter. It measures radial shaft displacement and vibration over a 2 mm range.

PR6423/10R-010 CON021 combines a reverse-mounted, non-armoured probe with the converter used for the standard two-millimetre measuring range. Its adapter-plug and five-metre LEMO-terminated cable configuration is defined by the complete option code.

The converter excites the probe coil and linearizes the change in impedance produced by conductive shaft motion. A proportional negative-voltage output is then available to turbine supervisory or machinery-protection electronics.

Probe thread, reverse-mount clearance, total cable length, target material and initial gap all influence calibration. The probe and converter should therefore be treated as a matched system rather than substituting a visually similar PR6423 variant.

Technical specifications

Probe tip diameter	8 mm
Measuring range	2 mm
Initial air gap	0.5 mm
Sensitivity	8 V/mm $\pm 5\%$ from 0 to 45 °C
Differential sensitivity linearity	± 0.025 mm
Frequency range	0 to 20 kHz
Probe thread	3/8-24 UNF
Mounting orientation	Reverse mount
Probe cable armour	Without armour
Adapter plug	Included by option code 0
Total cable length	5 m
Cable end	LEMO connector
Minimum shaft diameter	25 mm
Reference target material	42CrMo4 / AISI 4140 steel
Probe protection	IP66
Probe and 1 m cable temperature	-35 to 180 °C
Connector and remaining cable temperature	-35 to 150 °C
Converter	CON021
Converter linearity	1% maximum
Standard converter output	-2 to -18 V
Oscillator frequency	Approximately 1.25 MHz

PR6423/10R-010 CON021 function and operating principle

Ordered configuration

The full option code specifies reverse mounting, inch thread, cable construction and adapter arrangement.

System role

It converts the changing probe-to-shaft gap into a dynamic voltage for vibration or position monitoring.

Selection and installation

Mechanical fit and electrical calibration must be checked together because probe cable and converter are part of the measuring system.

Functional path

- Measures non-contact shaft displacement with an 8 mm eddy current probe and two-millimetre range.
- Uses a reverse-mount 3/8-24 UNF body where rear access is required.
- Pairs a five-metre LEMO cable configuration with the CON021 linearizing converter.

Application scenarios

- Steam-turbine bearing housings use the reverse-mount probe where the approach to the shaft is from inside the machine structure.
- Compressors monitor radial vibration by resolving rapid shaft motion without physical contact.
- Machinery-protection racks use the converter signal for alarms, trips and trend analysis of rotor behaviour.

PR6423/10R-010 CON021 engineering checks

Installation

- The reverse-mount 3/8-24 UNF body requires rear access and a suitable threaded bracket.
- A static initial gap of about 0.5 mm places the shaft within the calibrated two-millimetre range.
- The supplied five-metre cable path should not be shortened, extended or tightly coiled outside installation guidance.

Environmental Ratings

- The probe assembly carries an IP66 protection rating when installed with the specified connections.
- The probe and first metre of cable are rated from -35 to 180 °C.
- Connector and remaining cable sections must remain within their lower -35 to 150 °C temperature limit.

Compatibility & Interoperability

- CON021 provides the linearized output expected by compatible EPRO machinery-protection electronics.
- Calibration is referenced to a 42CrMo4 or AISI 4140 steel target and changes with other materials.
- Probe option code, total cable length and converter range must match as one transducer system.

Critical technical note

Set the mechanical gap for PR6423/10R-010 CON021 with the intended shaft material and matched five-metre cable; cable changes alter calibration.

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