Emerson PR9350-02-S2

01 Function and selected configuration

Product function

Emerson PR9350-02-S2 carries a displacement signal from a moving ferromagnetic core to remote measuring electronics through its fixed cable. The two winding impedances change in opposite directions around the mechanical centre position.

Selected configuration

The differential-coil construction contains two windings and a freely movable tracing pin. At the centre position the winding impedances are equal; movement increases one impedance and decreases the other. A carrier-frequency Wheatstone bridge converts this difference into a displacement-proportional voltage.

Functional path

Linear target motion	Differential windings	10 m fixed lead	Carrier bridge / monitor

Measuring interval	-25 to +25 mm
Selected connection	Fixed 10 m cable, open ends, oil-proof version
Excitation	5 Vrms at 3–5 kHz

The S2 version uses a fixed 10 m cable instead of the standard sensor socket arrangement. Brown, white and green conductors correspond to coil connections A, B and C. The black conductor is the cable shield and is not connected to the sensor housing. The tracing pin uses an M3 mechanical connection and the sensor has M4 fixing points.

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02 Technical operating envelope

Measuring interval	±25 mm
Fixed cable	10 m; open ends
Construction	Oil-proof version
Excitation voltage	5 Vrms
Excitation current	27–50 mA
Carrier frequency	3–5 kHz

Bridge sensitivity	270 mV/V
Full-range linearity	±3.5%
Linearity over 60% range	±0.5%
Coil A / B / C	Brown / white / green
Shield conductor	Black; not bonded to sensor housing
Operating temperature	-20 to +100 °C

Linearity values apply to the /02 range and stated fraction of travel. The temperature-influence test interval is not a wider permissible operating range.

Signal interpretation

The sensor requires an AC carrier bridge, not a direct 24 VDC transmitter supply. The bridge output per volt of excitation is a sensitivity relationship, not a standalone current-loop output.

Interface boundary

Identify A, B and C at the fixed cable ends before testing. The published coil-resistance bands describe the sensor; allow for the additional cable resistance when testing from the remote cable end.

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03 System integration and applications

Linear travel

The tracing pin follows the target through the ±25 mm interval while the differential coils produce the measurement signal.

Remote open-end wiring

The 10 m fixed lead reaches the receiving electronics without an intermediate standard sensor plug.

Carrier-bridge measurement

The two coil impedances form part of the external AC-excited bridge that generates a displacement voltage.

Converted mechanical quantities

An appropriate linkage can translate another physical quantity into linear movement within the sensor travel.

System and supply context

Connect the fixed cable to compatible carrier-frequency measuring electronics. The A6500-LC and A6500-UM provide the preferred processing path; neither is included automatically.

Application boundary

The transducer measures linear movement. Force, pressure or other quantities require a mechanical arrangement that first converts them into an appropriate displacement.

Is the black conductor of PR9350-02-S2 connected to its housing?

No. It is the cable shield and is not connected to the sensor housing. Terminate it according to the receiving system grounding arrangement.

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04 Engineering selection decisions

Which conductor is the centre coil connection on PR9350-02-S2?

White is coil connection B. Brown is A and green is C; identify the three conductors before connecting the bridge input.

What distinguishes PR9350-02-S2 from the standard PR9350/02 connection?

The S2 version is oil-proof and has a fixed 10 m cable with open ends. The standard connector arrangement must not be assumed for this version.

How does the specified linearity of PR9350-02-S2 vary with the used interval?

For the /02 design, linearity error is ±3.5% over the full range and ±0.5% over 60% of the measuring range. The smaller figure cannot be applied to full travel.

Can the core of PR9350-02-S2 measure pressure without a mechanical conversion?

No. The sensor measures linear displacement of its tracing pin. Pressure measurement requires suitable accessories that convert pressure into displacement within the selected range.

Check cable condition	Inspect the fixed lead for damage and preserve strain relief at the housing and termination.
Account for test leads	Distinguish winding resistance from the resistance of the 10 m cable and the instrument leads.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of PR9350-02-S2 is not confirmed. Product availability alone does not establish its lifecycle status.

Replacement assessment

Retain the /02-S2 fixed-cable version, ±25 mm interval and bridge configuration. Verify linkage travel and grounding before substituting another cable or measurement version.

Document roles

Use the original manufacturer excerpt for its preserved technical tables and drawings. This product brief explains selection and system context. The separate installation guide covers preparation, connection, tests and handover; it does not replace manufacturer instructions.

Technical basis

Emerson PR9350 / K20-315 Installation Guide, MHM-97864 Rev. 1.6.

Related product navigation

- Epro PR6423/015-040 CON021
- Epro PR6423/01K-010 CON021

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries