



Emerson EPRO PR6423/002-121 CON041

8 mm Eddy-Current Sensor and Signal Converter Pair

Product scope

- Measures close-clearance shaft motion without contacting the target.
- Provides an 8 V/mm nominal scale factor across a 2 mm linear range.
- Uses the exact M10 x 1 unarmored body and 45 mm sleeve execution.
- Requires preservation of the complete -121 cable identity and matched CON041 calibration.

Manufacturer source

Emerson PR6423 8 mm Eddy Current Sensor Specifications Sheet, December 2024.

The enclosed record and retained manufacturer pages identify the exact product and explain its function, operating principle, application and critical matching requirements.

Request a fast quote	Product reference	
Email: info@apterpower.com Phone: +86 18106909650 apter.com/inquiry.php	Emerson EPRO PR6423/002-121 CON041	

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Emerson EPRO PR6423/002-121 CON041

8 mm Eddy-Current Sensor and Signal Converter Pair

Manufacturer-source product record

This record consolidates exact-model facts from the manufacturer references listed below. It is included to identify the ordering configuration before the retained source pages.

Sensor	PR6423 8 mm eddy-current sensor
Base execution	PR6423/00: M10 x 1 case thread without armored cable
Sleeve code	2: 45 mm case length in the official order matrix
Suffix	-121 legacy cable/termination execution; preserve the complete code on replacement
Linear range	2 mm / 80 mil
Initial gap	0.5 mm / 20 mil
Incremental scale factor	8 V/mm, +/-5% from 0 to 45 deg C
Protection	IP66
Sensor operating temperature	-35 to 180 deg C including the first metre of cable
Minimum shaft diameter	25 mm

Official references

- Emerson PR6423 8 mm Eddy Current Sensor Specifications Sheet, December 2024.
- Emerson CON041 Eddy Current Signal Converter Specifications Sheet.
- Official source:
<https://www.emerson.com/is/content/emerson/en/systems-and-software/ams/forms-and-specs/documents/pr6423-8mm-sensor.pdf>

Only the exact configuration shown above is represented. Adjacent model variants, optional assemblies and system accessories are not treated as part of this ordering identity.

Function, operating principle and application

The notes below explain how this product is used and how its documented signal, power or control path operates. They remain limited to the manufacturer evidence for this model.

Measurement purpose

The compact probe monitors radial or axial shaft motion, position, eccentricity and speed on turbines, compressors, gearboxes, pumps and fans.

Working principle

An electromagnetic field at the probe tip induces eddy currents in the ferromagnetic target. Gap-dependent loading changes the converter response, producing a calibrated voltage related to shaft-to-probe distance.

Exact configuration

The /002 portion identifies the M10 x 1 unarmored PR6423/00 body with a 45 mm sleeve code. The legacy -121 cable and termination identity must be retained exactly from the supplied label and calibration record.

Application

The 8 mm probe and two-millimetre linear range support close-clearance measurements on shafts from 25 mm diameter in critical rotating equipment.

Installation caution

Match the CON041 converter and cable execution, target material and set gap before commissioning. Do not mix probes or converters from separately calibrated systems without completing the manufacturer calibration procedure.

PR6423

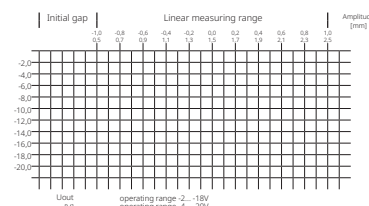
Specifications Sheet
December 2024

8mm Eddy Current Sensor

Non-contact sensor designed for critical turbomachinery applications such as steam, gas and hydro turbines, compressors, gearboxes, pumps and fans to measure radial and axial shaft dynamic displacement; position, eccentricity and speed.



Performance	
Linear Measurement Range	2 mm (80 mils)
Initial Air Gap	0.5 mm (20 mils)
Incremental Scale Factor (ISF)	ISO: 8 V/mm (203.2 mV/mil) $\pm$ 5% @ temperature range 0 to 45°C (+32 to +113°F)
Deviation from best fit straight line (DSL)	$\pm$ 0.025 mm ($\pm$ 1 mil) @ temperature range 0 to 45°C (+32 to +113°F)
Measuring Target	
Minimum Shaft Diameter	25 mm (0.79")
Target Material (Ferromagnetic Steel)	42CrMo4 (AISI/SAE 4140) Standard Other (On Request)
Environmental, General	
Protection Class	IP66, IEC 60529
Operating Temperature Range	Sensor incl. 1m Cable: -35 to +180°C (-31 to 356°F) Cable & Connector: -35 to +150°C (-31 to 302°F)
Material	Sensor Tip (PEEK Polyether Ether Ketone), Case (Stainless Steel) Cable (PTFE Polytetrafluoroethylene), Connector (Brass, nickel-plated)
Weight (Sensor with 1m Cable)	Approx. 100 grams (3.53 oz)



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8mm Eddy Current Sensor

December 2024

Compliance and Certifications	
CE	2014/30/EU (EN 61326-1) 2014/34/EU 2011/65/EU
ATEX	EN 60079-0 EN 60079-11
IEC-Ex	IEC 60079-0 IEC 60079-11 IEC 60079-26
CSA	CAN/CSA-C22.2 NO. 0-M91 CAN/CSA-C22.2 NO. 157-92 CAN/CSA-C22.2 NO. 213-M1987 CAN/CSA-E60079-15-02 (R2006) CAN/CSA-C22.2 NO. 25-1966 CAN/CSA-C22.2 NO. 61010-1-04 ANSI/UL Standard 913-2004 ANSI/UL Standard 1604-1995 UL 60079-15 2002 UL 61010-1

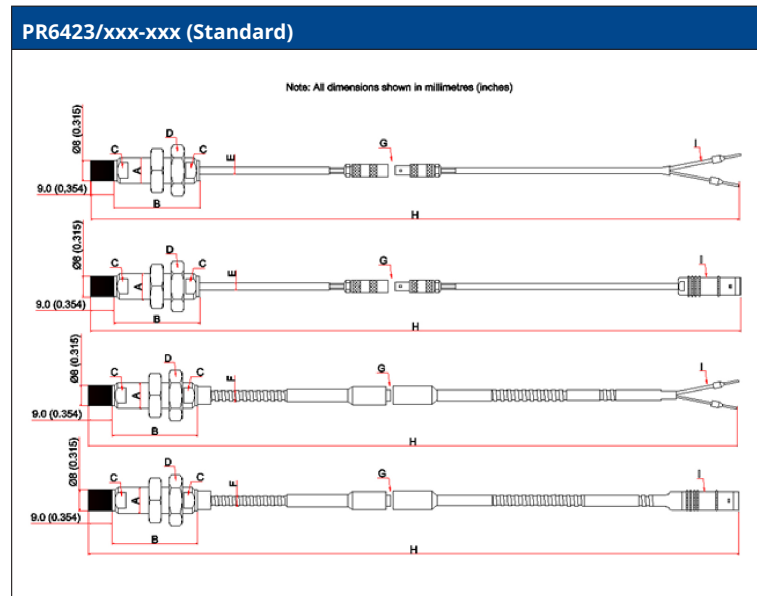
Hazardous Area Approvals

Intrinsic Safety (ia)	
ATEX / IEC-Ex / CSA	Area classification depends on converter; see converter documentation for details. Sensor temperature classification: T6: Ta ≤ 64°C T4: Ta ≤ 114°C T3: Ta ≤ 160°C
Non-sparking (nA)	
ATEX / IEC-Ex / CSA	Area classification depends on converter; see converter documentation for details. Sensor temperature classification: T6: Ta ≤ 64°C T4: Ta ≤ 114°C T3: Ta ≤ 160°C

8mm Eddy Current Sensor

December 2024

Dimensions



- A. Case thread, M10x1 or 3/8-24UNF
- B. SW 11 mm for M10 threads, SW 7/9-16 in for 3/8-24UNF threads
- C. Standard cable diameter 2.8 mm (0.110 in), minimum bending radius 25 mm (0.984 in)
- D. Armored cable diameter 6 mm (0.236 in), minimum bending radius 35 mm (1.378 in)
- E. Optional Adapter Plug after 1m cable from Sensor
- F. Cable Length (Tolerances 0... +10%)
- G. Lemo connector (male), 11.0 mm (0.433 in) diameter or open cable end

8mm Eddy Current Sensor

December 2024

Ordering Information

Tip Diameter	Case Threads	Armored Cable	Model No.
8mm	M10x1	No	PR6423/00
		Yes	PR6423/01
			PR6423/03*
	3/8"-24 UNF	No	PR6423/10
		Yes	PR6423/11
			PR6423/13*

*Armored cable option for Reverse Mount, if Adapter Plug is chosen.

Model No.	Case Thread X	Adapter Plug X	Cable Length X	Cable End X
PR6423/00	0 25mm	0 With	0 4.0m	0 Lemo*
PR6423/01	1 35mm	1 Without	1 5.0m	1 Open
PR6423/10	2 45mm		3 8.0m	
PR6423/11	3 55mm		F 9.0m	
	4 65mm		4 10.0m	
	5 75mm			
	6 85mm			
	7 95mm			
	8 105mm			
	9 115mm			
	E 155mm			
	H 195mm			
	R Reverse Mount			

*Not available, if Reverse Mount without Adapter Plug is chosen.

Example: PR6423/000-000

ECS 8mm, M10X1, NO ARMOR, 25MM SLEEVE, 1+3M CABLE, LEMO

CON041

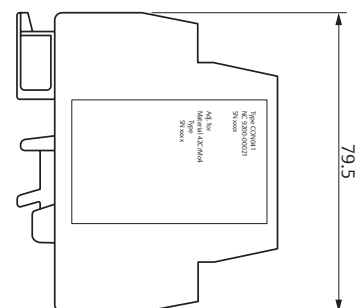
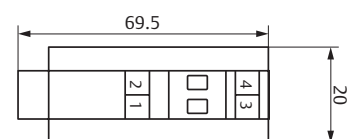
Specifications Sheet

June 2017

Eddy Current Signal Converter

Sensor Signal Converter designed for critical turbo machinery applications such as steam, gas and hydro turbines, compressors, pumps and fans to measure radial and axial shaft displacement, position, eccentricity and speed/key.

Dynamic Performance	
Frequency Range (-3 dB)	0 to 20,000 Hz
Rise Time	<15µs
NOTE: Designed for PR6422, PR6423, PR6424, PR6425, PR6426 For Extended Range Use: CON041/91x-xxx PR6425 Requires Extended Range Converter	
Environmental	
Operating Temperature Range	-30 to 100°C (-22 to 212°F)
Shock and Vibration	5g @ 60Hz @ 25°C (77°F)
Protection Class	IP20
Power & Electrical	
Supply Voltage Range	-23V to -32V (Output Range -4V to -20V)
	-21V to -32V (Output Range -2V to -18V)
Physical	
Housing Material / Weight	PA 6.6 / ~60 grams (2.12 oz)
Mounting	Din Rail
Connections	Screw Terminal (Max. 1.5mm ² , Wire-end Sleeves)



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June 2017

Compliance and Certifications	
CE	2014/30/EU 2014/34/EU 2011/65/EU EN61326-1 DIN EN 50581
ATEX	EN 60079-0:2009 EN 60079-11:2012
IEC-Ex	IEC 60079-0:2007-10; Edition 5 IEC 60079-11:2011; Edition: 6.0 IEC 60079-26:2006; Edition: 2
CSA	CAN/CSA-C22.2 NO. 0-M91 CAN/CSA-C22.2 NO. 157-92 CAN/CSA-C22.2 NO. 213-M1987 CAN/CSA-E60079-15-02 (R2006) CAN/CSA-C22.2 NO. 25-1966 CAN/CSA-C22.2 NO. 61010-1-04 ANSI/UL Standard 913-2004 ANSI/UL Standard 1604-1995 UL 60079-15 2002 UL 61010-1

Hazardous Area Approvals

Intrinsic Safety (iA)	
ATEX	II 2 G Ex ia IIC T4 Gb, -20°C ≤ Ta ≤ 80°C (Use with current limiting, e.g.: safety barrier)
IEC-Ex	Ex ia IIC T4 Gb, -20°C ≤ Ta ≤ 80°C (Use with current limiting, e.g.: safety barrier)
CSA	Class I Division 1, Groups A, B, C, D, T4 T4: -25°C ≤ Ta ≤ 80°C (Use with current limiting, e.g.: safety barrier)
Non-sparking (nA)	
CSA	Class I Division 2, Groups A, B, C, D Ex nA II T3..T4 AEx nA II T3..T4 T4: -25°C ≤ Ta ≤ 80°C



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