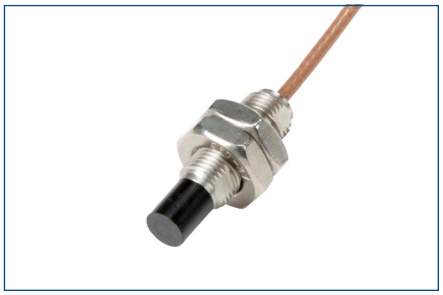
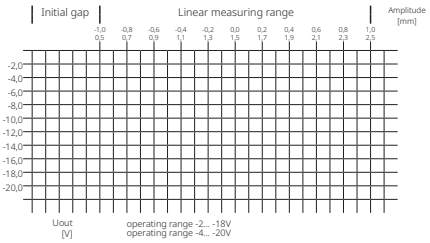
8mm Eddy Current Sensor



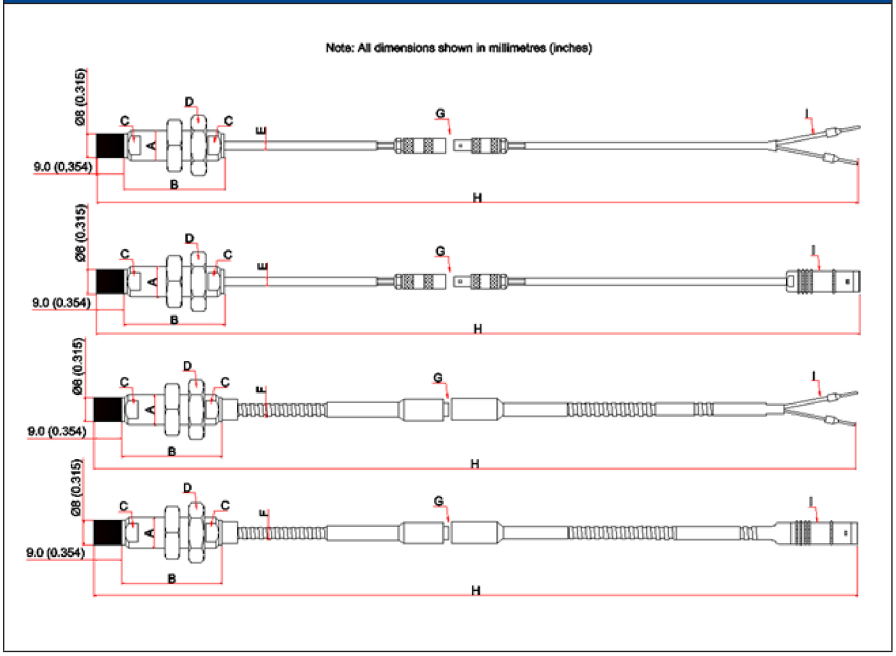
Non-contact sensor designed for critical turbomachinery applications such as steam, gas and hydro turbines, compressors, gearboxes, pumps and fans to measure radial and axial shaft dynamic displacement; position, eccentricity and speed.



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) ± 5% @ temperature range 0 to 45°C (+32 to +113°F)
Deviation from best fit straight line (DSL)	± 0.025 mm (± 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)

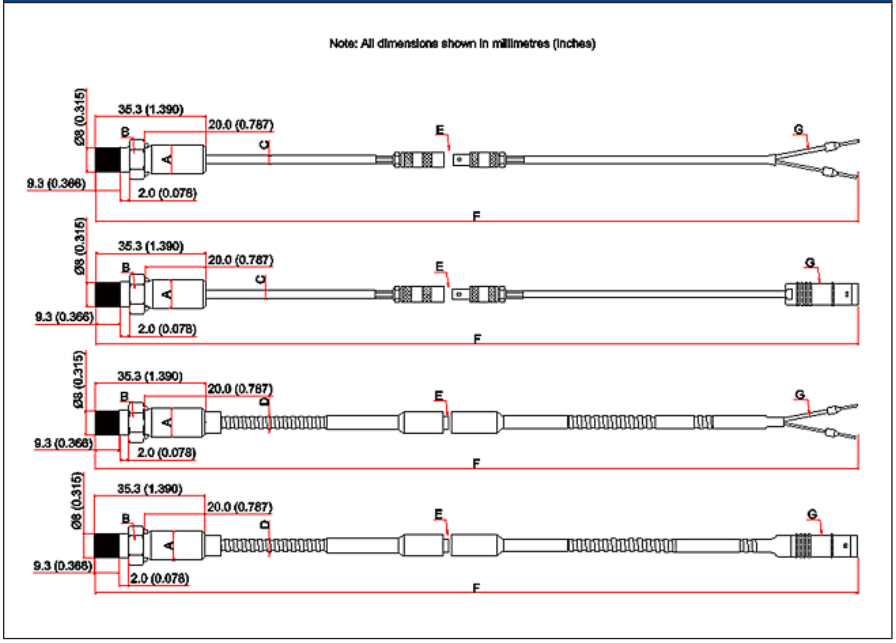
Dimensions

PR6423/xxx-xxx (Standard)



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

PR6423/xxR-xxx (Reverse Mount)



A. Case thread, M10x1 or 3/8-24UNF
B. SW 11 mm for M10 threads, SW 7/16 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

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 PR6423/01 PR6423/10 PR6423/11	**0** 25mm **1** 35mm **2** 45mm **3** 55mm **4** 65mm **5** 75mm **6** 85mm **7** 95mm **8** 105mm **9** 115mm **E** 155mm **H** 195mm **R** Reverse Mount	**0** With **1** Without	**0** 4.0m **1** 5.0m **3** 8.0m **F** 9.0m **4** 10.0m	**0** Lemo* **1** Open

**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

Special Version PR6423/xxx-xxx-RAD

Technical Data differing from Standard	
Material	Sensor Tip (Epoxy Resin) Case (Stainless Steel with EPDM O-Ring Sealing) Cable (Polyolefine)
Operating Temperature Range	-35 to +80°C (-31 to 176°F)
Radiation Resistance	Sensor & 1m Cable: up to 80Mrad Extension Cable & Converter: up to 0.1Mrad
Calculated Lifetime @ radiation of 0.5Sv/h:	With neutron radiation: 18.26 years With beta or gamma radiation: 183 years
Certifications	No hazardous area certification available!

Product Accessories

Model Number	Product Description
EZ 1600	Probe Holder
MPT 064	Metal Protection Tube

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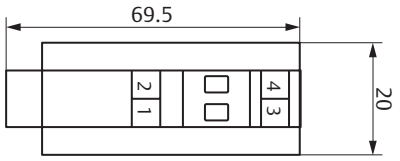
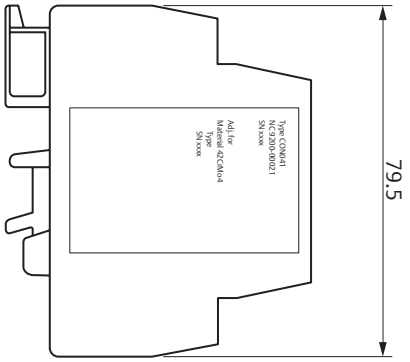
Eddy Current Signal Converter

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. 1.5mm2, Wire-end Sleeves)







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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

Ordering Information

Model Number	Sensor Type	Measuring Range	Linearity Error
CON041	PR6422 PR6423 PR6424 PR6426	1.0mm (Standard Range) 2.0mm (Standard Range) 4.0mm (Standard Range) 8.0mm (Standard Range)	≤ 1.5% ≤ 1.0% ≤ 1.5% ≤ 1.5%
CON041/912-015	PR6422	1.5mm (Extended Range)	≤ 2.0%
CON041/913-030	PR6423	3.0mm (Extended Range)	≤ 1.5%
CON041/913-040	PR6423	4.0mm (Extended Range)	≤ 2.0%
CON041/914-060	PR6424	6.0mm (Extended Range)	≤ 1.0%
CON041/914-080	PR6424	8.0mm (Extended Range)	≤ 1.5%
CON041/914-100	PR6424	10.0mm (Extended Range)	≤ 2.0%
CON041/915-040	PR6425	4.0mm (Standard Range)	≤ 1.5%
CON041/915-060	PR6425	6.0mm (Extended Range)	≤ 2.0%
CON041/915-080	PR6425	8.0mm (Extended Range)	≤ 3.0%
CON041/915-100	PR6425	10.0mm (Extended Range)	≤ 4.0%
CON041/916-120	PR6426	12.0mm (Extended Range)	≤ 1.5%
CON041/916-160	PR6426	16.0mm (Extended Range)	≤ 2.0%
CON041/916-200	PR6426	20.0mm (Extended Range)	≤ 2.5%
CON041/916-240	PR6426	24.0mm (Extended Range)	≤ 3.5%

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