

Eddy Current Displacement Transducer Specifications

The PR6423 003-0D1 is a radioactive radiation resistant non-contact eddy current transducer. The construction and design allows this sensor to be used in nuclear radiation zone 1 applications on turbomachinery, reactor coolant pumps and other motors, pumps, fans or blowers.

The purpose of a displacement probe is to measure position or shaft movement without contacting the measured surface – the rotor. In the case of sleeve bearing machines, the shaft is separated from the bearing material by a thin film of oil. The oil acts as a dampener and therefore the vibration and position of the shaft are not transmitted through

the bearing to the bearing case. The use of case vibration sensors is discouraged for monitoring sleeve bearing machines since the vibration produced by shaft motion or position is greatly attenuated through the bearing oil film. The ideal method of monitoring shaft position and motion is by mounting a non-contact eddy sensor through the bearing, or inside the bearing, measuring the shaft motion and position directly.

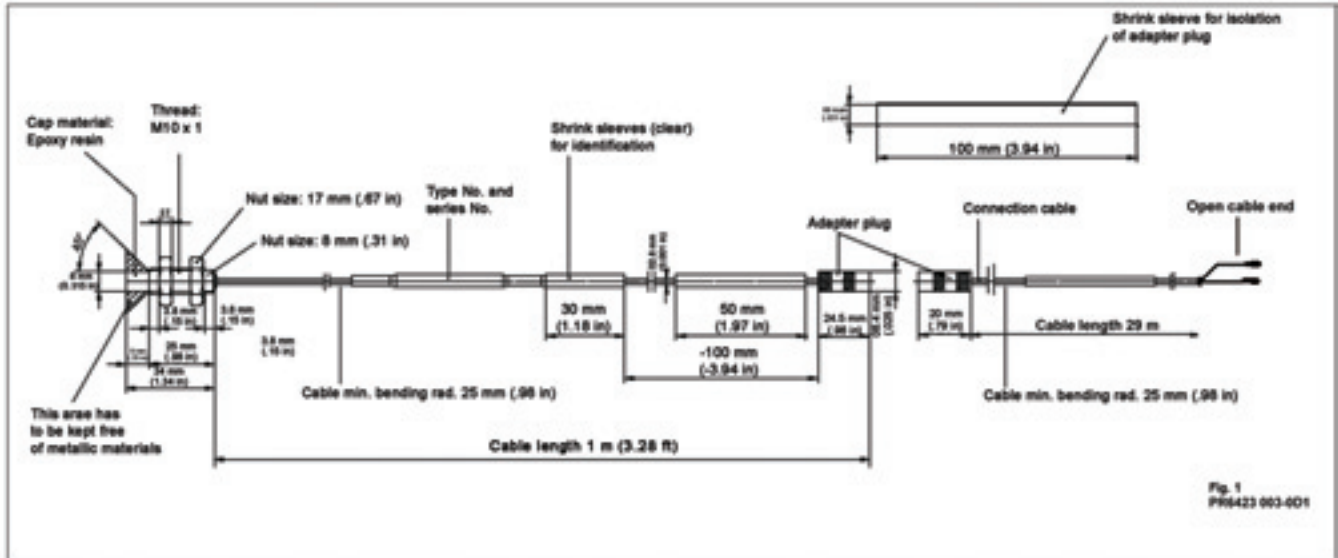
The PR 6423 is commonly used to measure vibration of machine shafts, eccentricity, thrust (axial displacement), differential expansion, valve position, and air gaps.



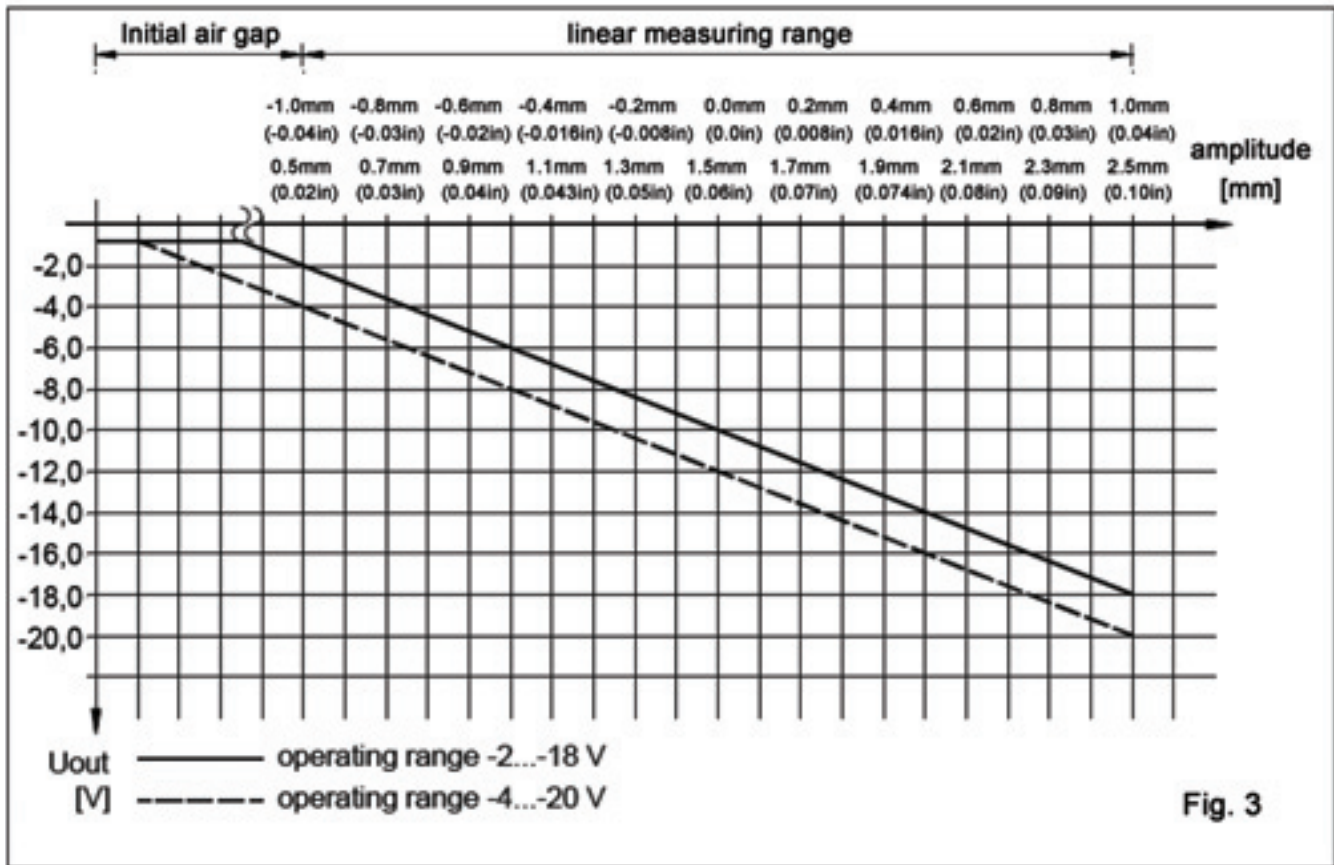
- Radioactive radiation resistant, zone 1
- Non-contact measurement of static and dynamic shaft displacement
 - Axial and radial shaft displacement (position)
 - Shaft eccentricity
 - Shaft vibration (motion)
- Meets international standards, DIN 45670, ISO 10817-1 and API 670
- Select converter for sensor such as CON 011/91, 021/91, 041/91, and cable for complete transducer system

Technical Data	
Measuring range	Static: ±1.0 mm (.04 in) Dynamic: 0 to 500µm (0 to 20 mil) Best suited for 50 to 500µm (2 to 20 mil)
Sensitivity	8 V/mm
Target	Electrically conducting steel Cylindrical shaft <ul style="list-style-type: none"> ■ On measuring collars, if target surface is less than 25 mm (.98 in) diameter, then error may be 1% or greater. ■ Error negligible when target surface is greater than 25 mm (.98 in) diameter Peripheral speed of shaft: 0 to 2500 m/s Shaft diameter > 25 mm (.98 in) Nominal gap (center of measuring range): 1.5 mm (.06 in)
Measuring error after calibration	< ±1% linearity error
Temperature error	Zero point: 200 mV / 100° K Sensitivity: < 2% / 100° K
Long term drift	0.3% max.
Influence of supply voltage	< 20 mV/V
Operating temperature range	-35 to +180° C (-31 to 365° F) (short term, up to 5 hours, up to +200° C / 392° F)
Temperature range for storage	-40 to +70° C (-40 to 158° F)
Thread of sensor	M10 x 1 or 3/8" – 24 – UNF – 2A Available only in M10 x 1 threads (off the shelf).
Sensor material	Stainless steel with special EPDM o-ring sealing and cable isolation with PVC The non-electrical part of the adapter plug is constructed with PEEK.
Pressure resistance to sensor head	10,000 hPa
Pressure and differential pressure resistance at cable outlet	on request
Vibration and shock nominal values at 25° C (77° F)	5 g at 60 Hz
Cable length	1m at the transducer plus 29m extension cable
Maximum cable temperature	+80° C (+176° F)
Connection of transducer to converters	Blunt cut cable ends for screw terminals
Cable protection	Severe and high performance insulation, PTFE
Net weight without armored cable	0.1 kg (.22 lbs)
Net weight with armored cable	0.3 kg (.66 lbs)
Gross weight without armored cable	0.2 kg (.44 lbs)
Gross weight with armored cable	0.5 kg (1.1 lbs)

Dimensions:



Static Output Characteristics:



Ordering Information, PR 6423

PR6423 Sleeve thread M10 x 1, sleeve length 55mm, adapter plug at 1 m, total cable length 30 m, open end cable

	PR 6423	X	X	X	-	X	X	X
Sleeve Thread: M10 x 1 3/8" – 24 –UNF – 2A		0 1						
Armored cable: Without With			0 1		-			
Sleeve length (+9.0 mm (.35 in) = total length): 25 mm (.98 in) 35 mm (1.38 in) 45 mm (1.77 in) 55 mm (2.17 in) 65 mm (2.56 in) 75 mm (2.95 in) 85 mm (3.35 in) 95 mm (3.74 in) 105 mm (4.13 in) 115 mm (4.53 in) (max. length)				0 1 2 3 4 5 6 7 8 9				
Adapter plug at 1 m (3.28 ft): With Without						0 1		
Total cable length: 4 m (13.1 ft) 5 m (16.4 ft) 6 m (19.7 ft) 8 m (26.2 ft) 10 m (32.8 ft)							0 1 2 3 4	
Cable end: Lemo connector for converter Blunt cut cable end for converter								0 1
	PR 6423				-			

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