

Eddy Current Displacement Transducer Specifications

The PR 6422 is a non-contact eddy current transducer with a rugged construction and designed for extremely critical turbomachinery applications such as steam, gas, compressor and hydro turbomachinery, blowers and fans.

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.

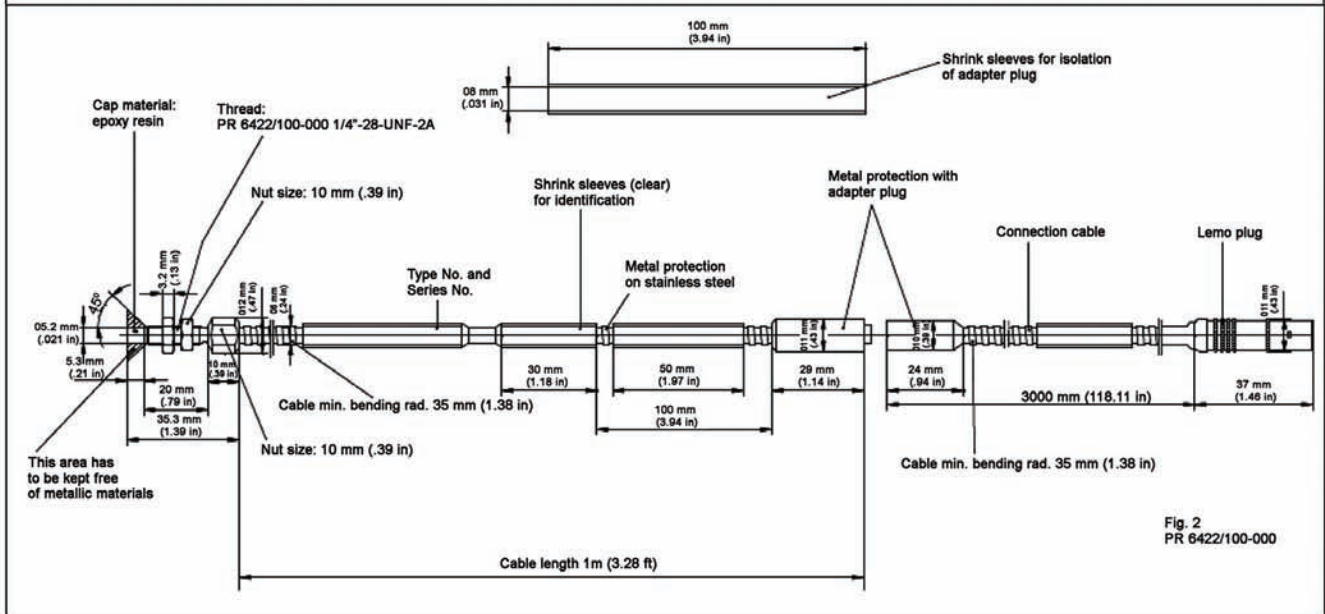
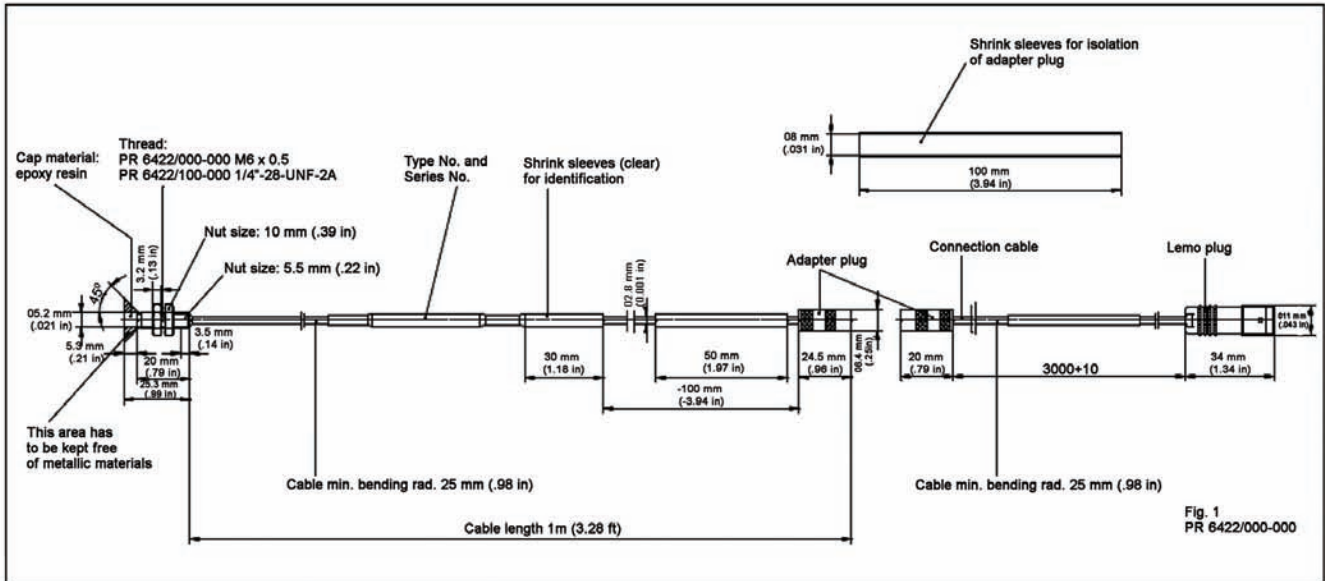
The PR 6422 is commonly used to measure vibration of machine shafts, eccentricity, thrust (axial displacement), differential expansion, valve position, and air gaps.



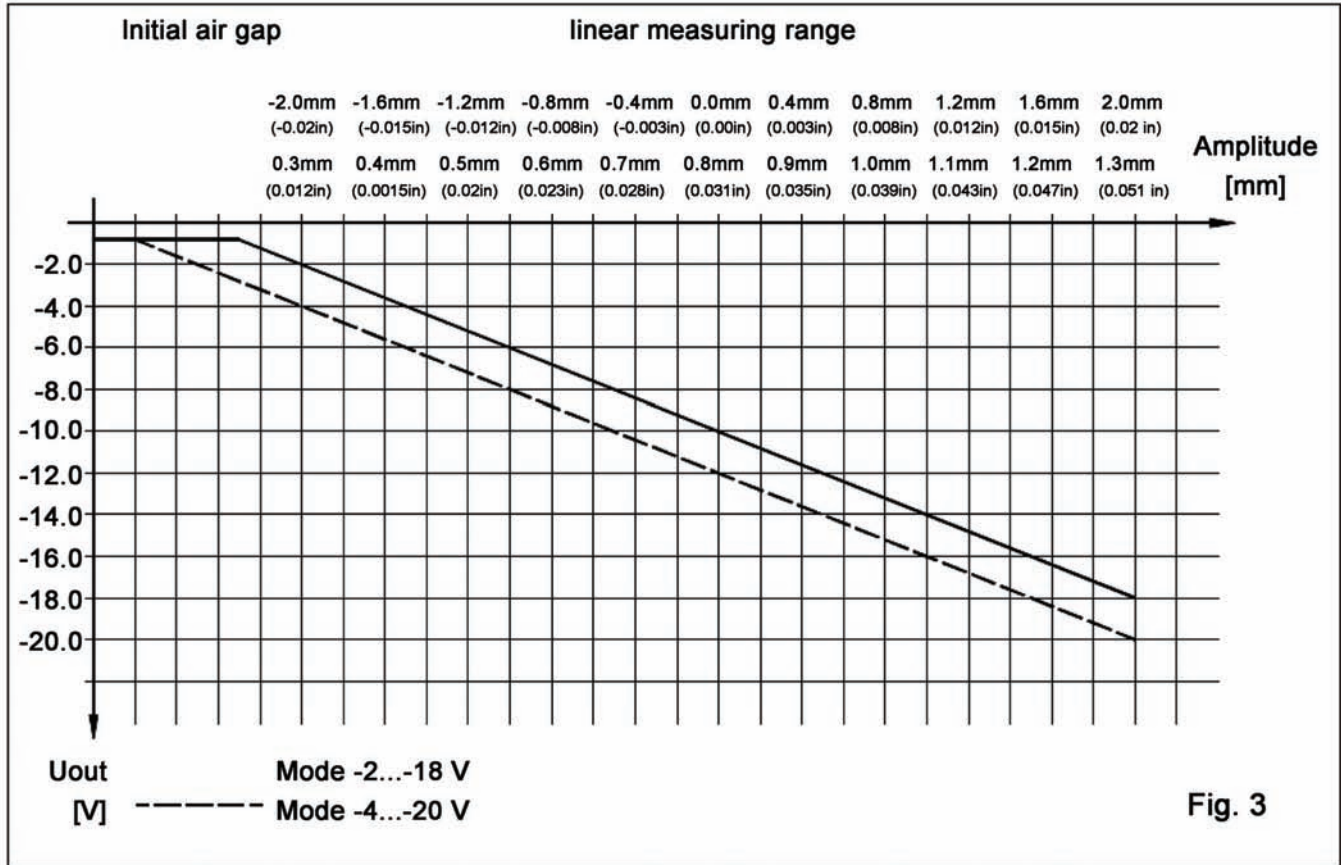
- Non-contact measurement of static and dynamic shaft displacement
 - Axial and radial shaft displacement (position)
 - Shaft eccentricity
 - Shaft vibration (motion)
- Meets international standards, DIN 45670, ISO 10817-1 and API 670
- Rated for explosive area, Eex ib IIC T6/T4
- Other displacement sensor selections include PR 6422, PR 6423, PR 6424 and PR 6425
- Select converter for sensor such as CON 011/91, 021/91, 041/91, and cable for complete transducer system

Technical Data	
Measuring range	Static: ±0.5 mm (.019 in) Dynamic: 0 to 250µm (0 to 10 mil) Best Suited for 25 to 250µm (1 to 10 mil)
Sensitivity	16 V/mm
Target	Electrically conducting steel Cylindrical shaft <ul style="list-style-type: none"> ■ On measuring collars, if target surface is less than 20 mm (.79 in) diameter, then error may be 1% or greater. ■ Error negligible when target surface is greater than 20 mm (.79 in) in diameter. Peripheral speed of shaft: 0 to 2500 m/s (0 to 8202 ft/s) Shaft diameter > 25 mm (.98 in) Nominal gap (center of measuring range): 0.8 mm (.031 in)
Measuring error after calibration	< ±1.5% 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 356° 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	M6 x 0.5 or 1/4" – 28 – UNF – 2A
Sensor material	Stainless steel
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	PR 6422/000-000 PR 6422/100-000 PR 6422/010-000 1m (3.28 ft) at transducer 3m (9.84 ft) at extension cable
Maximum cable temperature	+200° C (392° F)
Connection of transducer to converters	CON 011 and CON 021, Lemo plug CON 041, blunt cut cable 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:



Order Matrix, PR 6422

	PR 6422	x	x	x	-	x	x	x
Sleeve Thread: M6 x 0.5 1/4" – 28 –UNF – 2A	0 1				-			
Armored cable: Without With			0 1		-			
Sleeve length (+5.3 mm = total length): 20 mm (.79 in) 30 mm (1.18 in) 40 mm (1.57 in) 50 mm (2.0 in) (max. length)				0 1 2 3	-			
Adapter plug at 1 m: 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 6422				-			

Optional Accessories

Mounting brackets, armored cable, cable exist seals and safety barriers for hazardous or intrinsically-safe areas

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