

5mm, 8mm, 11mm, 16mm, 18mm & 25mm Proximity Probe Systems

Introduction to proximity probe systems

Proximity probe transducers have been widely used in measuring the static and dynamic distance between the target and the probe. With its high quality, highly reliable, and long life cycle, Spectrum's **SE** series proximity probes have been used to measure shaft vibration, radial and axial shaft position and differential expansion between case and rotor. In addition, the proximity probe transducer can be used for diagnostic purposes, providing solutions to problems that may develop on rotating machinery, including early shaft crack detection, misalignment of the shaft within the machine casing, rotor imbalance, abnormal bearing wear. With no moving parts to wear out or degrade, a proximity probe system can last a very long time before requiring calibration or service. This allows installation of the proximity probe transducer during normal machine maintenance outages and connection of the transducers to monitoring and diagnostic equipment at a later date.

SE proximity probe system has been designed to meet API670 standards. The SE series proximity probe system consists of a probe, an extension cable (if needed) and a driver.

SE series proximity probes come with diameters of 5, 8, 11, 16, 18 and 25mm. The system can be used for all kinds of rotation machines. Primary types of measurements made on rotating machinery using the **SE** proximity probe include:

- ⌘ Radial vibration for indicating bearing condition and measuring such machine malfunctions as rotor imbalance, misalignment, and shaft crack.
- ⌘ Axial thrust position for determining thrust bearing wear or potential bearing failure..
- ⌘ Shaft average radial position for determining attitude angle, an indicator of rotor stability and shaft alignment.
- ⌘ Vibration amplitude and phase angle for diagnostic information in Polar and Bode formats or for vector monitoring.
- ⌘ Eccentricity to measure the amount of shaft bow during start-up of large turbine machinery.



Components of the SE proximity probe transducer

Probe

SE series proximity probes come with diameters of 5, 8, 11, 16, 18 and 25mm threads. The probe can be selected in English or Metric threads - you can request the reverse mount option. Each probe includes a user specified integral cable in length of 0.5m, 1.0m, 5m or 9m as standard.

Extension Cable

You can select various extension cable lengths based on the probe cable length. Extension cables of 4m, 4.5m, 8m or 8.5m can be attached to the probe to bring the total cable length to either 5m or 9m – which is the required cable length for optimum driver performance, accuracy and linearity.

Driver

Using the latest in electronic design and assembly, the driver of **SE** system has unmatched accuracy in industry today. The total length of cable between the probe and the driver should be either 5m or 9m. The distance between the driver and the monitor can be up to 300m (1000 ft)



Alt. Driver Style

Rev. 1.0

SPECIFICATION						
Model	SE-5	SE-8	SE-11	SE-16	SE-18	SE-25
Probe Diameter	5mm	8mm	11mm	16mm	18mm	25mm
Linearity Range (up to)	1mm	2mm	4mm	6mm	8mm	14.5mm
Sensitivity (v/mm)	16	8	4	2	2	1
Working Temperature	-40 to 120 Degree C					
Probe						
Extension Cable						
Driver	0-75 Deg C					
Linearity Error (% FS)	+/- <1.0					
Frequency Response	0 - 10 KHz					
Power Requirement	- 24VDC or +24VDC					
Driver Output	-2-18V (with -24Vdc power) or 1-5V/4-20ma (with +24Vdc power)					
Transducer Resistance	2 - 10 ohms (typically 3.06 ohms)					
Max Output Voltage	approximately -22VDC (when powered by -24VDC)					
Power Consumption	< 12ma					
Probe Thread	M8x1	M10x1	M14x1.5	M20x1.5	M22x1.5	M30x1.5 M22x1.5

NOTE: Parameters are at 25 Deg C, with -24VDC power supply and 45# steel target whose thickness is more than 5mm

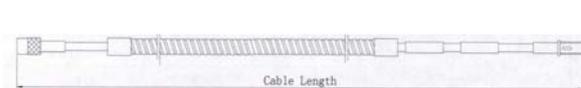
TO ORDER: please provide the following probe system information:

Probe (B): OD, unthreaded tip length, threaded length, integral cable length, non-armored or armored, std or reverse mount

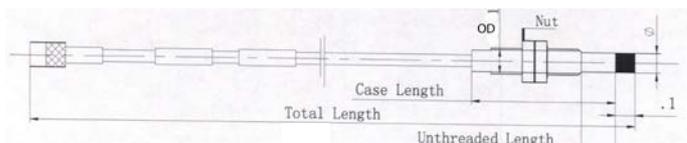
Extension Cable (A): length, armored or non-armored

Driver: flat or DIN mount, -24 VDC, for 5M or 9M cable system

Extension Cable (A)



Probe c/w Integral Cable (B)



NOTE: A plus B must equal either 5M or 9M ; A can = '0'M