



## Proximity Transducer Systems



**Senturion X** Series from Sensonics...  
**Proximity Probes** for Rotating Machinery

## Senturion X PROXIMITY PROBES

### Designed for Reliability, Accuracy and Flexibility


"The Senturion X range of proximity probe systems consist of a calibrated probe, extension cable and driver. Utilising the eddy current principle, this combination forms a tuned circuit with the target material and variations in probe face to target distance are detected in this circuit by the driver, providing a linearised voltage output proportional to target gap. This measurement system provides highly accurate (resolution typically less than one micro-meter) vibration and relative positional measurements, for harsh environments up to 180 °C.

The driver unit offers selectable system lengths of 5 m, 7 m or 9 m, with a front panel green LED for indicating the selected option. A gap voltage monitoring socket is also provided. The cable system incorporates snap lock connectors which require no torquing and provide a shake proof solution important for heavy industrial applications.



The double screened cable offers robustness in combination with high immunity to interference and optional stainless steel convoluted armour is available for applications or environments where cable protection is paramount."

#### Key Features

- Switch selectable system cable lengths 5 m, 7 m and 9 m.
- LED indication of selected length.
- 3.5 mm socket for gap voltage monitoring.
- Double screened cable for high noise immunity.
- Snap lock and shake proof cable connection.
- Low profile driver for easy local integration to machine (Din rail mount opt).
- Excellent repeatability on replacement of probe, extension or driver.
- Compliant with standard API 670.
- Hazardous Area Approved. 

## STRAIGHT MOUNT PROBES

- Suitable for shaft vibration and shaft / thrust position measurements
- Robust stainless steel threaded case in various lengths and threads
- Encapsulated tip impervious to oil or water ingress
- Measurement ranges of 2.5 mm, 4.0 mm and 8.0 mm
- Supplied with free running locknut for forward or reverse mounting
- Intrinsically safe options available
- Choice of cable lengths with or without armouring connecting directly to driver unit or to extension cable
- Operating temperature range, -30 °C to +180 °C



## REVERSE MOUNT PROBES

- Suitable for shaft vibration and shaft / thrust position measurements
- Robust stainless steel threaded case with integral locknut
- Measurement ranges of 2.5 mm and 4.0 mm
- Suitable for reverse mounting in to a standard probe holder
- Encapsulated tip impervious to oil or water ingress
- Intrinsically safe options available
- Choice of cable lengths with or without armouring connecting directly to driver unit or to extension cable
- Operating temperature range, -30 °C to +180 °C



## DISC PROBES

- Suitable for a range of rotor expansion and shaft position measurements
- Robust stainless steel body with 2 or 3 mounting holes
- Measurement ranges of 2.5 mm, 4.0 mm, 8.0 mm, 12.0 mm, 18.0 mm, 25.0 mm and 30.0 mm
- Encapsulated tip impervious to oil or water ingress
- Range of adjustable bracketry available for standard and dual probe mounting for steam turbine differential expansion measurement applications
- Choice of cable lengths with or without armouring connecting directly to driver unit or to extension cable
- Operating temperature range, -30 °C to +180 °C



## EXTENSION CABLES

- Available in 'tuned' lengths of 4.0 m, 6.0m and 8.0 m. With or without stainless steel convoluted armouring
- Excellent system repeatability on replacement of extension cable
- Double screened cable with snap lock connectors



Ordering details appear on relevant probe data sheets

## DRIVER UNITS

- Universal driver for 5 m, 7 m and 9 m systems with LED indication
- Low profile for easy local integration, either baseplate or DIN rail mount
- 3.5 mm audio socket for gap voltage monitoring during set up
- -16.0 Vdc to -28.0 Vdc power supply range
- API 670 compliant interface
- Operating temperature range -30 °C to +90 °C



Ordering details appear on relevant probe data sheets

## PROBE HOLDER

- Enables the replacement of probes without re-calibration
- Available in an aluminium or stainless steel enclosure with various machine mounting threads
- Internal adjustment of probe insertion depth
- For use with 8mm diameter reverse mount probes
- Applications include shaft vibration and shaft axial position up to insertion depths of 300mm



Standard features of

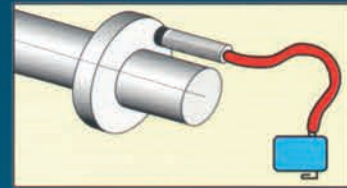
## Senturion X Proximity Probes

- Rugged Industrial Design
- Conforms to API standard 670
- Universal driver for 5 m, 7 m and 9 m systems with LED indication of selected length.
- Integral 3.5 mm audio socket for gap voltage monitoring
- Wide power supply tolerance -16.0 VDC to -28.0 VDC
- Linearity better than  $\pm 1\%$
- Frequency of operation DC – 10 kHz
- Interchangeability error of  $< 5\%$
- Radiation resistant and high pressure options available
- Double screened cable for high noise immunity
- Probes sealed to IP67
- DIN rail mounted driver
- Stainless steel convoluted armour option
- Probe operating temperature range  $-30\text{ }^{\circ}\text{C}$  to  $+180\text{ }^{\circ}\text{C}$
- Driver operating temperature range  $-30\text{ }^{\circ}\text{C}$  to  $+90\text{ }^{\circ}\text{C}$

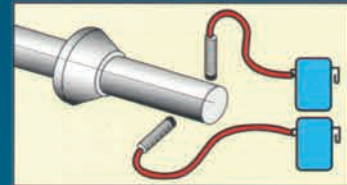
### Applications

- Steam Turbines
- Industrial Gas Turbines
- Hydro Electric Machines
- Electric Motors and Generators
- Centrifugal Pumps and Compressors
- Axial and Reciprocating Compressors
- Horizontal and Vertical Pumps
- Turbo Expanders
- Fans and Blowers
- Centrifuges

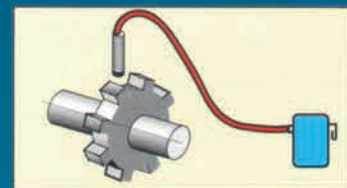
Shaft axial position measurement, thrust wear, differential expansion



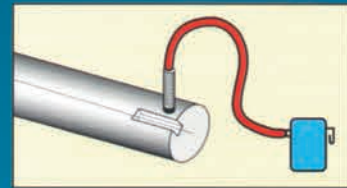
Shaft radial vibration, eccentricity, relative vibration, X&Y monitoring



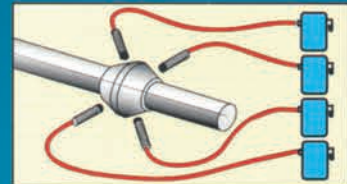
Speed, zero speed



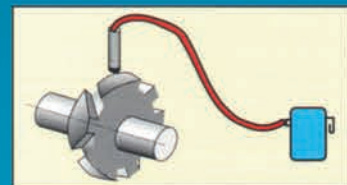
Phase reference angle, reverse rotation



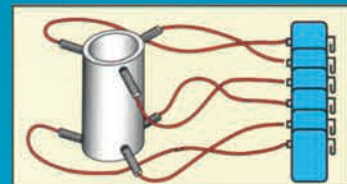
Tapered shaft axial position, (4, 2 & single probe systems)



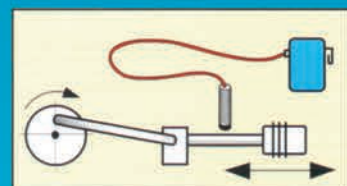
Shaft axial position using triangulation patterns



Alignment



Reciprocating compressor Rod Drop monitoring





Continuous protection and monitoring is an essential requirement for critical rotating plant across industry. Whether you are generating power, pumping essential fluid or driving process equipment – it is vital to monitor machinery dynamic behaviour and protect your process from equipment downtime.

For over 40 years Sensonics has been at the forefront in developing smart conditioning monitoring systems which help industry to monitor and protect critical rotating plant.

The Senturion **X** proximity probe system has evolved from our established Senturion range, now offering a universal driver concept in addition to various other features and enhancements.

## Other products in the Sensonics range

- Accelerometers, Velocity Sensors, LVDT's, RVDT's and Seismometers.
- DN80 series of proximity probe systems offering relative shaft vibration, shaft axial position and rotational speed measurements with direct processed 4-20mA outputs.
- Sentry G3 and DN26 G3 machinery protection systems offering a universal platform for all vibration, position, temperature and speed monitoring requirements.



Tel:+44 (0)1442 876833 Fax:+44 (0)1442 876477  
 Email: sales@sensonics.co.uk www.sensonics.co.uk  
 Northbridge Road, Berkhamsted, Herts, HP4 1EF, UK

Designed & produced by: www.harveycomms.co.uk



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