The DNX8033 Transmitter is designed to measure shaft axial position or thrust wear on critical rotating plant. The unit operates in conjunction with Sensonics XPR range of 8mm tip diameter proximity probes, offering a wide measurement range of ±1.0 mm.

Integrating the proximity probe driver functionality and signal processing to provide a the measurement offers a cost effective approach to shaft position monitoring. The 4-20mA loop powered transmitter affords easy integration with either the machine PLC or a plant wide DCS.

The DNX8033 proximity probe system is made up of a calibrated probe, extension cable and transmitter. 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 transmitter providing output current proportional to displacement.

The transmitter unit offers selectable system lengths of 5 m, 7 m or 9 m and a voltage proportional to the gap between the probe face and target can be monitored at the terminals to assists with commissioning the probe system.

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 with optional stainless steel convoluted armour.
<table>
<thead>
<tr>
<th><strong>System Performance</strong></th>
<th><strong>Transmitter</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement Range:</strong></td>
<td>Maximum loop resistance: 1000 Ohms at +35.0V 0.0 Ohms at +15.0V 50 x (V – 15) Ohms</td>
</tr>
<tr>
<td>Options</td>
<td>Input Voltage Range: +15.0 to +35.0 Vdc</td>
</tr>
<tr>
<td></td>
<td>Recommended Drive: 250 Ohms, +24.0 Vdc</td>
</tr>
<tr>
<td>Hi / Lo Output:</td>
<td>Signal Output Range: 2.0 V to 12.0 V 0.25mm (10 mils) to 2.25 mm (90 mils)</td>
</tr>
<tr>
<td></td>
<td>Signal Output Sensitivity: 4.0 V / mm ± 2% with 10 M Ohm Load</td>
</tr>
<tr>
<td>Linearity:</td>
<td>Signal Output Impedance: 10 K Ohm</td>
</tr>
<tr>
<td>± 1% (% of FS)</td>
<td>Signal Output Temperature: ±10% over range Sensitivity 0 °C to +50 °C</td>
</tr>
<tr>
<td>± 2%, 0 °C to +150 °C @ -10.0V</td>
<td>System Length Selection: Internal switch 5 m, 7 m or 9 m</td>
</tr>
<tr>
<td>Current Loop Sensitivity</td>
<td>Calibration: CAL – adjustment potentiometer for zero setting</td>
</tr>
<tr>
<td>Options</td>
<td>Sensitivity to: Negligible</td>
</tr>
<tr>
<td>125 um / mA ± 1 %</td>
<td>Power Supply</td>
</tr>
<tr>
<td>(-1.00 mm to +1.00 mm)</td>
<td>Sensitivity to: &lt; 1.0uA / um</td>
</tr>
<tr>
<td>75 um / mA ± 1 %</td>
<td>Gap Voltage</td>
</tr>
<tr>
<td>(-0.60 mm to +0.60 mm)</td>
<td>Transducer Failure: S/C or O/C, Loop Current &lt;3.8mA (out of range)</td>
</tr>
<tr>
<td>Resolution:</td>
<td>Sensor Connector type: Self Locking Miniature Male Coaxial</td>
</tr>
<tr>
<td>&lt;0.001 mm</td>
<td>Mounting: Din Rail or Plate</td>
</tr>
<tr>
<td>Interchangability:</td>
<td>Mass: 250 grams</td>
</tr>
<tr>
<td>Maximum interchangability error replacing either probe, extension cable or transmitter in calibrated system is ± 5 %.</td>
<td>Operating Temp Range: -40 °C to +80 °C</td>
</tr>
<tr>
<td>Available system lengths: 5 m, 7 m and 9 m</td>
<td>Storage Temp Range: -40 °C to +90 °C</td>
</tr>
<tr>
<td>Cable length tolerance</td>
<td><strong>Hazardous Area Approvals – ATEX / IECEx</strong></td>
</tr>
<tr>
<td>Probe (1 metre):</td>
<td><strong>Probe</strong></td>
</tr>
</tbody>
</table>
| 1.0 m to 1.5 m         | Ex II 1 GD  
|                        | Ex ia IIIC T4/T2 Ga  
|                        | Ex ia IIIC T135°C Da  
|                        | -40°C ≤ Ta ≤ +80°C  
|                       | **Transmitter** |
| Cable Extension (4 metre): | Ex II 1 GD  
| 4.0 m to 4.4 m         | Ex ia IIIC T4 Ga  
|                        | Ex ia IIIC T135°C/ T300°C Da  
|                        | -40°C ≤ Ta ≤ +80°C / +180°C  
| Cable Extension (6 metre): |  
| 6.0 m to 6.6 m         |  
| Cable Extension (8 metre): |  
| 8.0 m to 8.8 m         |  
| Frequency Response:    | 0 Hz to 1 kHz |
|                        | 0 Hz to 1 kHz |
| Probe Gap Linear Range: | 0.25 mm – 2.25 mm (10 mils – 90 mils) |
| Reference Target Material: | ANSI 4140 |
| **Probe**              |  
| Probe tip diameter:    | 8.0 mm |
| Probe tip material:     | PPS 40 % Glass Filled |
| Probe body material:    | 303 stainless steel |
| Available probe body lengths: 20 mm to 250 mm | 0.8 in to 9.6 in |
| Cable type:             | Triaxial 75Ohm Coaxial FEP outer jacket 3.2 mm outer diameter |
| Armoured option:        | Convoluted Stainless Steel 6.4 mm outer diameter |
| Probe Resistance:       | 3.1 Ohms ± 0.2 Ohm |
| Operating Temp Range:   | -30 °C to +180 °C |
| Storage Temp Range:     | -40 °C to +180 °C |
| Minimum target diameter:| 16 mm |
| Effect of target curvature: | +2 % for shaft diameter 150 mm +5 % for shaft diameter 25 mm |
| Magnetic field effect:  | <1 % at 110 mT |

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**Probe Mechanical Configuration**

**Straight Mount**

![Diagram of Straight Mount Probe Mechanical Configuration]

**Reverse Mount**

![Diagram of Reverse Mount Probe Mechanical Configuration]

**Extension Cable Mechanical Drawing**

![Diagram of Extension Cable Mechanical Configuration]
Transmitter Mechanical Configuration

SNAPLOCK CONNECTOR
FOR E.C.PROBE INPUT

BLA4 CONNECTOR BLOCK

CAL ADJUST POTENTIOMETER

2x M4 SCREWS

MOUNTING OPTION 2
MOUNTING CLIP

119.2mm MOUNTING SCREW PITCH

129.4mm CLIP WIDTH
**Probe Ordering Information**

**Cable length**
- 0.5 - 0.5 m
- 1.0 - 1 m
- 5.0 - 5 m
- 7.0 - 7 m
- 9.0 - 9 m

**Cable protection**
- U - Unarmoured double screened (standard)
- C - Conduit (convoluted stainless steel)
- S - Heatshrink isolation over conduit
- G - M20 cable gland fitted to standard cable

**Body Format**
- S - Straight Mount (for bracket mounting)
- R - Reverse (fixed nut with O-ring for use with probe holder)
- A - Right angled cable exit

**Thread type**
- 0 - 3/8”UNF (standard imperial)
- 1 - M10 x 1.0 (standard metric)
- 2 - M16 x 1.5
- 3 - 3/8” - 24 UNC
- 4 - M18 x 1.5
- 5 - M14 x 1.0
- 6 - M14 x 1.5
- 7 - M12 x 1.25
- 8 - M10 x 1.5

**Range (sensitivity)**
- 0 - 2.5 mm (7.87 mV/μm) (API670)
- 1 - 4 mm (3.94 mV/μm)

**Hazardous Area Approvals**
- 0 - None
- 1 - ATEX / IECEx

**Unthreaded Length**
Can be ordered in metric or inches.
Not required for reverse mount (fixed nut) option (00)
See Note 1.

**Overall Case length**
Can be ordered in metric or inches.
See Note 2.

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**Note 1 - Unthreaded Length Option**
**Imperial Case**
Unthreaded length must be at least 0.8 inches less than the case length. Order in increments of 0.1 in.
Maximum unthreaded length: 8.8 in
Minimum unthreaded length: 0.0 in
Example: 04 = 0.4 in.

**Metric Case**
Unthreaded length must be at least 20 mm less than the case length. Order in increments of 10 mm.
Maximum unthreaded length: 230 mm
Minimum unthreaded length: 0 mm
Example: 06 = 60 mm.

**Note 2 - Overall Case Length Option**
**Imperial Case**
Order in increments of 0.1 in.
Maximum case length: 9.6 in
Minimum case length: 0.8 in
Example: 24 = 2.4 in

**Metric Case**
Order in increments of 10 mm.
Maximum length: 250 mm.
Minimum length: 20 mm.
Example: 06 = 60 mm.
Transmitter Ordering Information

System length
- 5 - 5m
- 7 - 7m
- 9 - 9m

Range (sensitivity)
- 0 = -1.0mm to +1.0mm (-40mil to +40mil) (125um/mA)
- 1 = -0.6mm to +0.6mm (-25mil to +25mil) (75um/mA)

Hazardous Area Approvals
- ATEX / IECEEx
- (Leave blank for None)

Extension Cable Ordering Information

Cable length
- 4.0 – 4m
- 4.5 – 4.5m
- 6.0 – 6m
- 6.5 – 6.5m
- 8.0 – 8m
- 8.5 – 8.5m

Cable protection
- U – Unarmoured double screened (standard)
- C – Conduit (Convoluted SS)

Hazardous Area Approvals
- 0 – None
- 1 – ATEX / IECEEx

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