VK-R
LONG CABLE TRANSDUCER

The VK-R series vibration transducer is an eddy-current transducer designed to measure the shaft vibration without contact, and complies with API Standard 670. With its long cable extension feature, this transducer is most suitable for many types of rotating machinery, such as power generating gas turbines whose large size also requires a vibration transducer with a long cable length. The VK-R transducer can also be used in an explosive gas atmosphere due to its intrinsically safe construction.

- **System composition**
  - Consists of sensor, extension cable and driver. Available in lengths of 15m and 20m, the total distance between sensor and driver.

- **Intrinsic safety explosion-proof construction**
  - TIS equivalent to IEC standard, Ex ia IIC T6

- **Anti-corrosion**
  - Extensive operating temperature range (-40 to +177 deg.C).
  - Not affected by lubricating oil or dust (excluding connector).

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**[Specifications]**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>VK-152R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration Material</td>
<td>JIS SCM440 (AISI 4140 Steel) Flat Surface</td>
</tr>
<tr>
<td>Linear Range</td>
<td>More than 1,500 µm</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>727 mV / 100 µm</td>
</tr>
<tr>
<td>Operation</td>
<td>Sensor: -40 to +177 deg. C; Ext. cable: -40 to +177 deg. C; Driver: -36 to +80 deg. C</td>
</tr>
<tr>
<td>Power Supply</td>
<td>-24 VDC</td>
</tr>
<tr>
<td>System Cable Length</td>
<td>15 m +/- 10% or 20 m +/- 10%</td>
</tr>
</tbody>
</table>

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**Dimension**

- **Sensor**
  - Dimensions: mm
  - 31 x 33 x 92

- **Driver**
  - Dimensions: mm
  - 164 x 114 x 70

- **Extension Cable**
  - Dimensions: mm
  - 15 x 11 x 60

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**Current and detail information are refer to Web site (http://www.sst-shinkawa.co.jp)**
**VK-602P SENSOR**

- Sensor tip
- Jam nut
- Thread
- Flexible armor
- Sensor cable
- Coaxial connector

Dimensions: mm

**VK-143P SENSOR**

- Sensor tip
- Jam nut
- Thread
- Flexible armor
- Sensor cable
- Coaxial connector

Dimensions: mm

**VK-143P SIDE EXIT TYPE SENSOR**

- Sensor tip
- Jam nut
- Thread
- Flexible armor
- Sensor cable
- Coaxial connector

Dimensions: mm

**VK-263P SENSOR**

- Sensor tip
- Jam nut
- Thread
- Flexible armor
- Sensor cable
- Coaxial connector

Dimensions: mm

**VK-263P SIDE EXIT TYPE SENSOR**

- Sensor tip
- Jam nut
- Thread
- Flexible armor
- Sensor cable
- Coaxial connector

Dimensions: mm
VK-P
TSI TRANSDUCER

The VK-P series TSI transducer is a high-grade, eddy-current type, non-contacting transducer for bearing position and differential expansion measurement required for TSI. It offers the necessary low temperature drift and stability for displacement measurement, and can also be used in an explosive gas atmosphere due to its intrinsically safe construction.

**System composition**
Consists of sensor, extension cable and drive. Available in lengths of 5m and 9m, the total distance between sensor and drive.

**Various type of measured ranges**
The VK-P series transducer is offered in five measured ranges of 2mm, 3mm, 6mm, 13.5mm and 26mm. Suitable for long-range measurement as required for TSI.

**Intrinsic safety explosion-proof construction**
TIIS equivalent to IEC standard Ex ia IIC T5, CSA, FM, ATEX

**Anti-corrosion**
Extensive operating temperature range (-40 to +125 deg. C). Not affected by lubricating oil or dust (excluding connector). Ammonia resistant and hydrogen sulfide models are also available. (For details, contact us.) (Outside installation inappropriate.)

**Specifications**

<table>
<thead>
<tr>
<th>Calibrated Material</th>
<th>Linear Range</th>
<th>Sensitivity</th>
<th>Operating Temperature Range</th>
<th>Power Supply</th>
<th>System Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK-202P</td>
<td>More than 2 mm (begins at approx. 0.3 mm from sensor tip)</td>
<td>787 mV / 100 µm</td>
<td>-20 to +125 deg. C</td>
<td>Within -24 VDC +/-10%</td>
<td>5 m ± 10% or 9m ± 10%</td>
</tr>
<tr>
<td>VK-302P</td>
<td>More than 3 mm (begins at approx. 0.3 mm from sensor tip)</td>
<td>5 V / mm</td>
<td>-20 to +125 deg. C</td>
<td>Within -24 VDC +/-10%</td>
<td>5 m ± 10% or 9m ± 10%</td>
</tr>
<tr>
<td>VK-602P</td>
<td>More than 6 mm (begins at approx. 0.3 mm from sensor tip)</td>
<td>2.5 V / mm</td>
<td>-20 to +125 deg. C</td>
<td>Within -24 VDC +/-10%</td>
<td>5 m ± 10% or 9m ± 10%</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Calibrated Material</th>
<th>Linear Range</th>
<th>Sensitivity</th>
<th>Operating Temperature Range</th>
<th>Power Supply</th>
<th>System Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK-263P</td>
<td>More than 13.5 mm (begins at approx. 0.3 mm from sensor tip)</td>
<td>0.8 V / mm</td>
<td>-20 to +125 deg. C</td>
<td>Within -24 VDC +/-10%</td>
<td>5 m ± 10% or 9m ± 10%</td>
</tr>
<tr>
<td>VK-263P</td>
<td>More than 26 mm (begins at approx. 0.3 mm from sensor tip)</td>
<td>0.4 V / mm</td>
<td>-20 to +125 deg. C</td>
<td>Within -24 VDC +/-10%</td>
<td>5 m ± 10% or 9m ± 10%</td>
</tr>
</tbody>
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<tr>
<th>Calibrated Material</th>
<th>Linear Range</th>
<th>Sensitivity</th>
<th>Operating Temperature Range</th>
<th>Power Supply</th>
<th>System Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK-263P</td>
<td>More than 26 mm (begins at approx. 0.3 mm from sensor tip)</td>
<td>0.4 V / mm</td>
<td>-20 to +125 deg. C</td>
<td>Within -24 VDC +/-10%</td>
<td>5 m ± 10% or 9m ± 10%</td>
</tr>
</tbody>
</table>
The VK-A series vibration transducer is an eddy-current transducer that measures the shaft vibration without contact, and complies with API Standard 670. This is the most appropriate sensor to measure shaft vibration supported by plain bearings, and is frequently used to monitor the vibration of turbine generators and compressors. It can also be used in an explosive gas atmosphere due to its intrinsic safety construction.

**System composition**
- Consists of sensor, extension cable and driver. Available in lengths of 5m and 9m, total distance between sensor and driver.
- **Intrinsic safety explosion-proof construction**
  - TIS equivalent to IEC standard
  - Ex ia IIC T5 (VK-452A), Ex ia IIC T6 (VK-202A)
  - CSA, FM, ATEX
- **Anti-corrosion**
  - Extensive operating temperature range (-40 to +177 deg.C).
  - Not affected by lubricating oil or dust (excluding connector).
  - Ammonia resistant and hydrogen sulfide models are also available. For details, contact us. (Inappropriate for outside installation, where sensors may be exposed to rain.)
- **API compliant**
  - Satisfies API Standard 670 regarding scale factor error, interchangeability and sensor size.

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>VK-202A</th>
<th>VK-452A</th>
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</thead>
<tbody>
<tr>
<td>Calibrated Material</td>
<td>JIS SCM440 (AISI 4140 steel) flat surface</td>
<td></td>
</tr>
<tr>
<td>Linear Range</td>
<td>More than 2,000 µm</td>
<td>More than 4,500 µm</td>
</tr>
<tr>
<td>Scale Factor</td>
<td>787 mV/100 µm</td>
<td>394 mV/100 µm</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40 to +177 deg.C (Connector - MAX. 125 deg.C)</td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>24 VDC ±10 %</td>
<td></td>
</tr>
<tr>
<td>System Cable Length</td>
<td>5 m ± / -10 % or 9 m ± / -10 %</td>
<td></td>
</tr>
</tbody>
</table>
The VK-A Series vibration transducer is an eddy-current transducer designed to measure the shaft vibration, and satisfies the American Petroleum Institute (API) Standard 670. The VK-P Series TSI transducer is exclusively designed for bearing position and differential expansion measurement. This high-grade, eddy-current type, non-contacting transducer offers lower temperature drift and stable displacement measurement.

With a long cable extension feature, this transducer is most suitable for power generation gas turbines and other types whose large size requires a vibration transducer with a long cable length.

Many types of rotating machinery are utilized in the oil refining-centered energy industry. To ensure safe operation of the machinery, consistent monitoring is essential. In many cases, machinery failures result in vibration value increases. Therefore, constant vibration value monitoring promotes early irregularity detection and considers optimal counter plans. SHINKAWA vibration monitoring products are varied and flexible, adapting to any user's customized system.

Complies with American Petroleum Institute (API) Standard 670
Non-contact rotor vibration measurement
Sensor durability
A variety of monitors—displacement, vibration, rotation, and zero speed

A HIGH GRADE TRANSDUCER FOR SAFE-ROTATING MACHINERY OPERATION

This vibration monitoring system consists of various transducers and monitors for signal management. Numerous kinds of monitoring systems that suit any rotating machinery can be configured.