

VK *series*

Non-contact

Displacement Vibration

TRANSDUCER



A HIGH GRADE TRANSDUCER FOR SAFE- ROTATING MACHINERY OPERATION

Complies with American Petroleum Institute (API) Standard 670

Non-contact rotor vibration measurement

Sensor durability

A variety of monitors ñ displacement, vibration, rotation, and zero speed

Many types of rotating machinery are utilized in the oil refining-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 allows for optimal counter plans. SHINKAWA vibration monitoring products are varied and flexible, adapting to any user's customized system.

LINE UP



VK-A Series / TRANSDUCER

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.



VK-P Series / TSI TRANSDUCER

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.

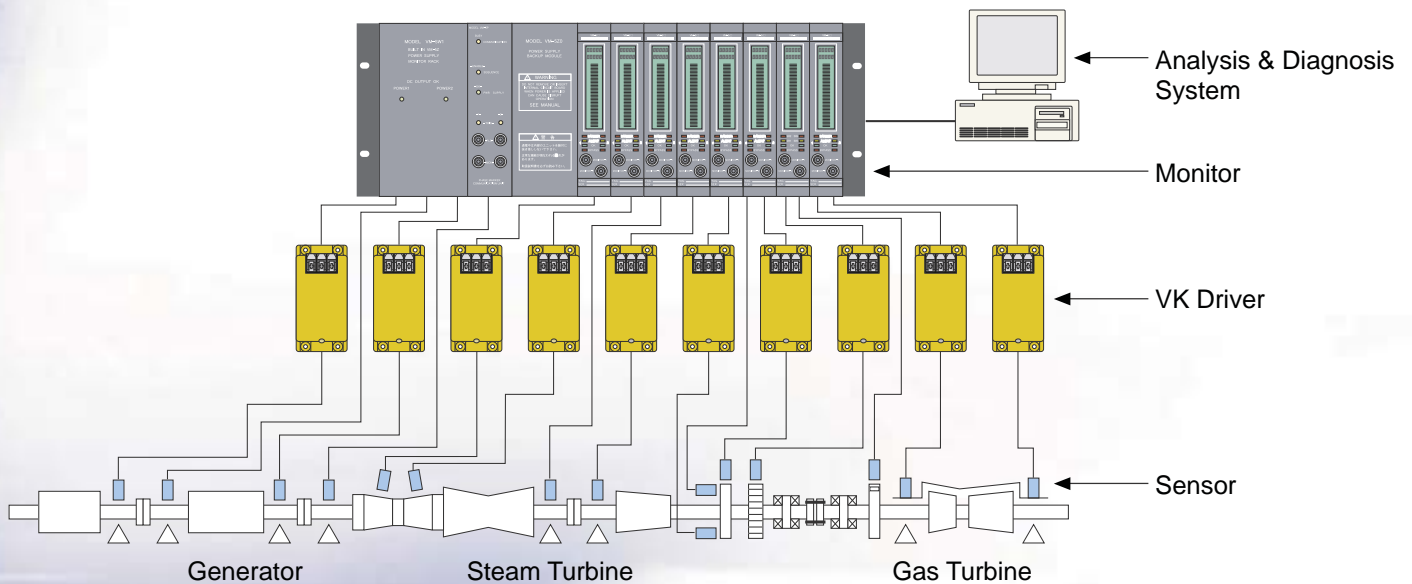
VK-R Series / Long cable TRANSDUCER

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.

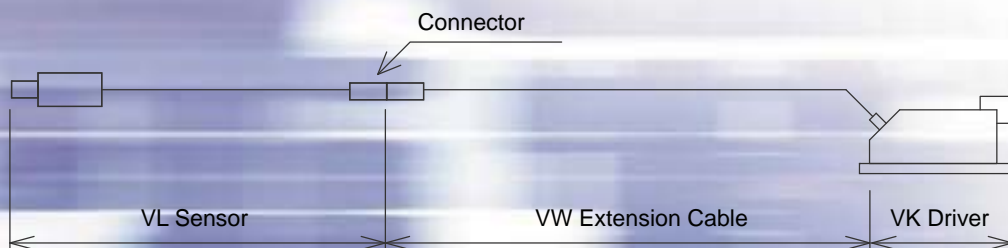
TRANSDUCER & MONITOR

MONITORING SYSTEM EXAMPLE

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.



VK SYSTEM CONFIGURATION



VK-A

TRANSDUCER

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

TIIS equivalent to IEC standard
Ex ia IIC T6
FM, ATEX

➤ Anti-corrosion

Extensive operating temperature range (-40 to +177deg.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.)

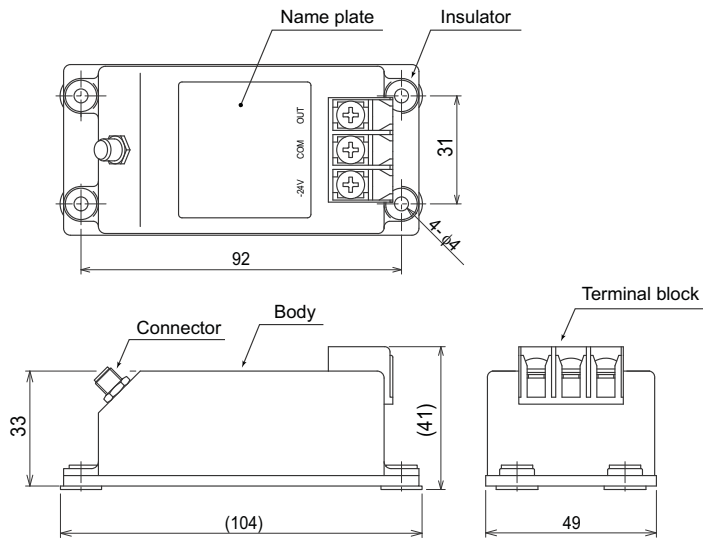
➤ API compliant

Satisfies API Standard 670 regarding scale factor error, interchangeability and sensor size.

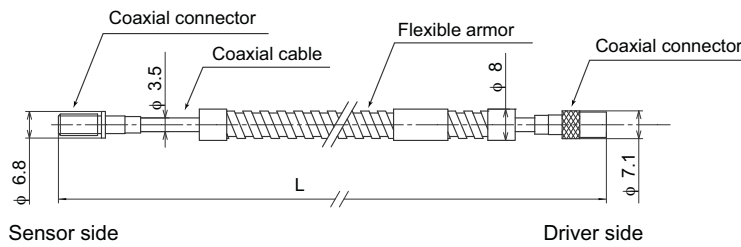
[Specifications]

		VK-202A	VK-452A
Calibrated Material		JIS SCM440 (AISI 4140 steel) flat surface	
Linear Range		More than 2,000 μm	More than 4,500 μm
Scale Factor		787 mV / 100 μm	394 mV / 100 μm
Operating Temperature Range	Sensor	-40 to +177 deg.C (Connector : MAX. 125 deg.C)	
	Ext. Cable	-40 to+177 deg.C	
	Driver	-38 to+80 deg.C	
Power Supply		-24 VDC +/-10 %	
System Cable Length		5 m +/- 10 % or 9 m +/- 10 %	

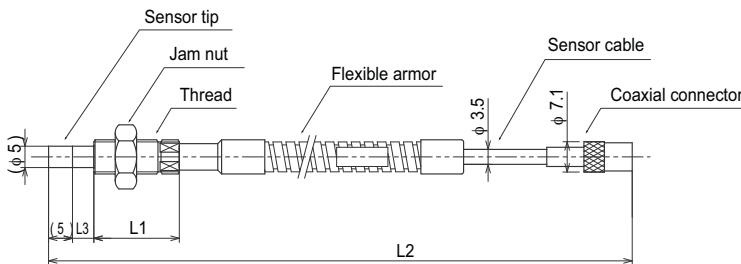
VK-202A DRIVER



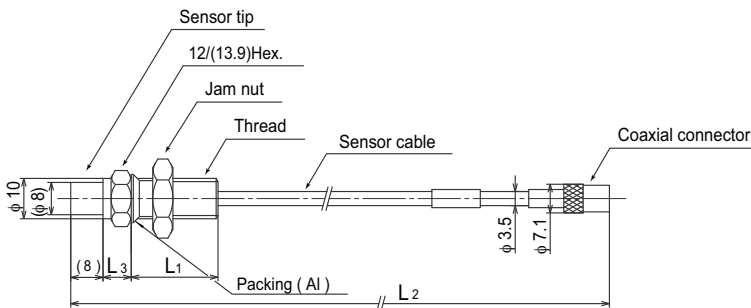
VW EXTENSION CABLE



VL-202A SENSOR



VL-202A REVERSE MOUNT TYPE SENSOR



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 driver. Available in lengths of 5m and 9m, the total distance between sensor and driver.

Various type of measured ranges

The VK-P series transducer is offered in four measured ranges of 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 T6 (VK-302P)
FM, ATEX (excluding VK-263P)

Anti-corrosion

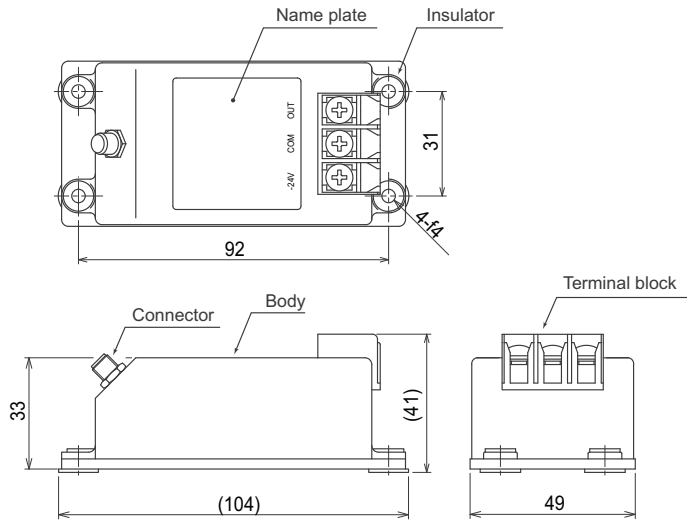
Extensive operating temperature range (-40 to +177deg. C).
Not affected by lubricating oil or dust (excluding connector).
Ammonia resistant and hydrogen sulfide models are also available. (For details, contact us.) (Outside installation inappropriate.)

[Specifications]

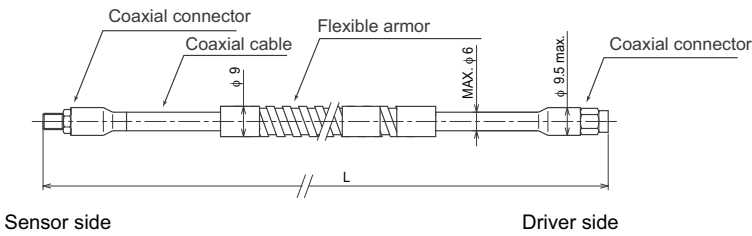
		VK-202P	VK-302P	VK-602P
Calibrated Material		JIS SCM440 (AISI 4140 Steel) Flat Surface		
Linear Range		More than 2 mm (begins at approx. 0.3 mm from sensor tip)	More than 3 mm (begins at approx. 0.3 mm from sensor tip)	More than 6 mm (begins at approx. 0.3 mm from sensor tip)
Sensitivity		787 mV / 100 μ m	5 V / mm	2.5 V / mm
Operating Temperature Range	Sensor	-40 to +125 deg.C		
	Ext. Cable	-40 to +125deg. C		
	Driver	-38 to +80 deg. C		
Power Supply		Within -24 VDC +/- 10 %		
System Cable Length		5 m +/- 10 % or 9m +/- 10%		

		VK-143P	VK-263P
Calibrated Material		JIS SCM440 (AISI 4140 Steel) Flat Surface	
Linear Range		More than 13.5 mm (begins at approx. 0.3 mm from sensor tip)	More than 26 mm (begins at approx. 0.3 mm from sensor tip)
Sensitivity		0.8 V / mm	0.4 V / mm
Operating Temperature Range	Sensor	-40 to +125 deg. C	
	Ext. Cable	-40 to +125 deg.C	
	Driver	-38 to +80 deg. C	
Power Supply		Within -24 VDC +/- 10%	
System Cable Length		5 m +/- 10% or 9 m +/- 10%	

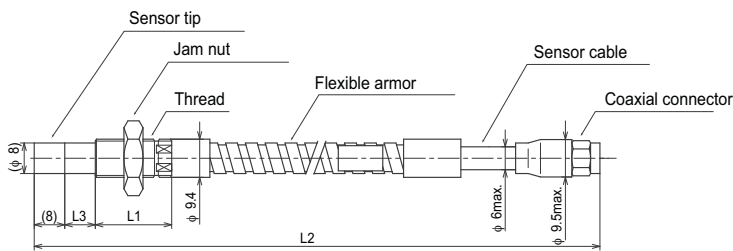
DRIVER



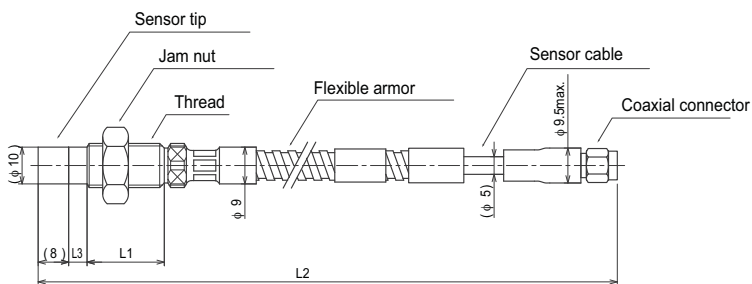
EXTENSION CABLE



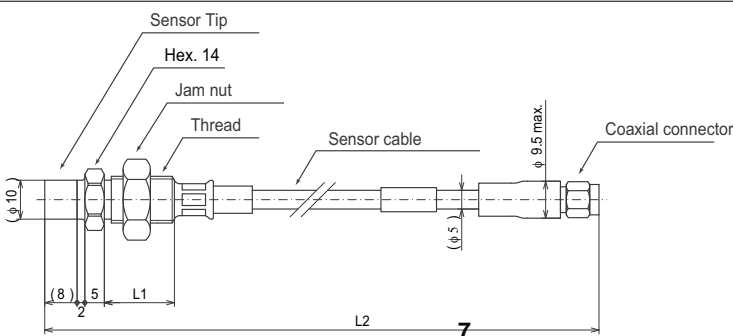
VL-202P SENSOR



VL-302P SENSOR



VL-302P REVERSE MOUNT TYPE SENSOR



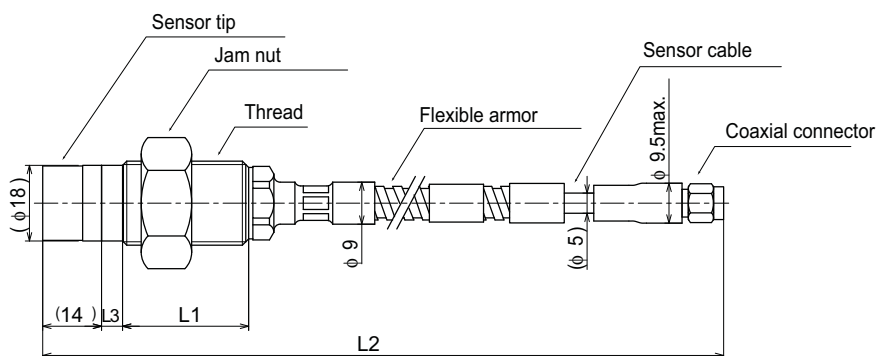
Dimensions : mm

VK SERIES

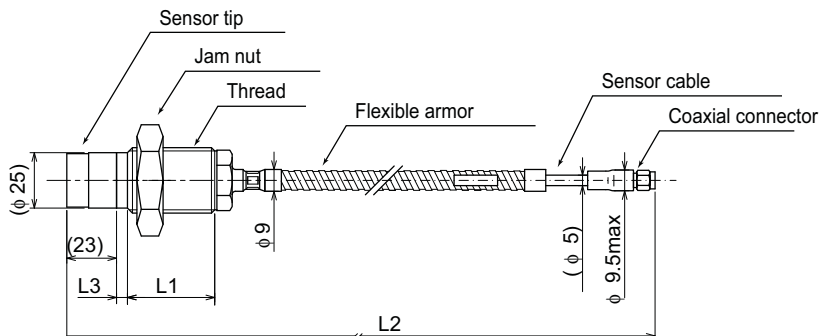
VK-P

TSI TRANSDUCER

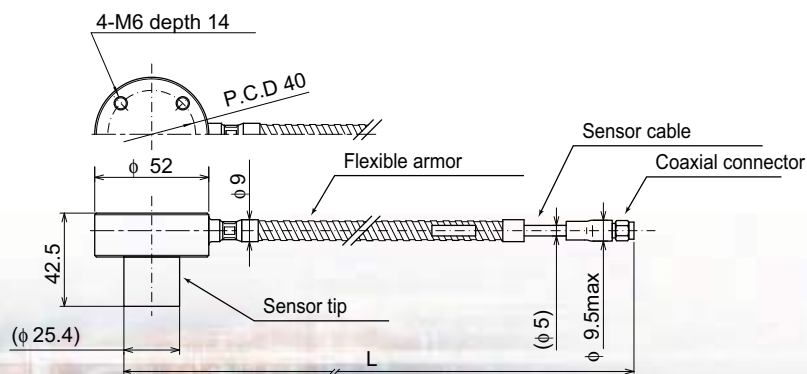
VL-602P SENSOR



VL-143P SENSOR

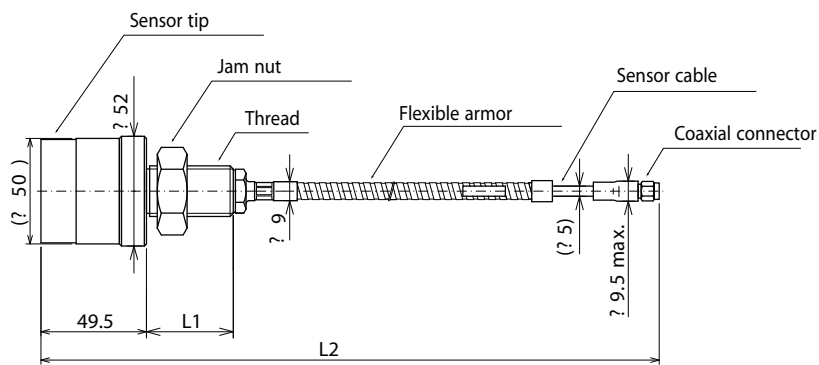


VL-143P SIDE EXIT TYPE SENSOR

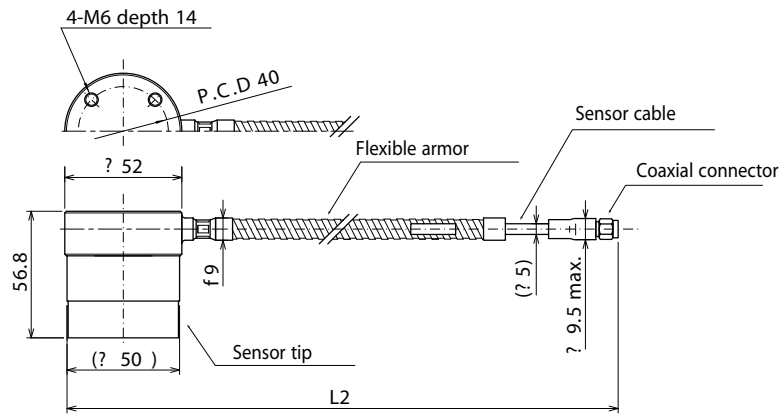




VL-263P SENSOR



VL-263P SIDE EXIT TYPE SENSOR



Dimensions : mm

VK SERIES

WK SERIES

Monitors or signal converters are unnecessary. Electric Current output makes long wiring possible. Direct connection to control instruments. The ideal system for monitoring small compressors.



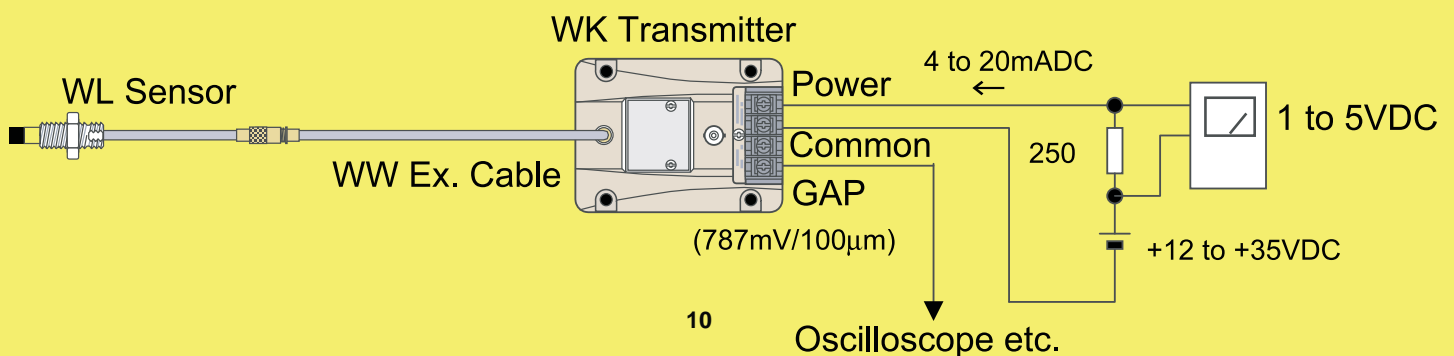
SIMPLE WIRING -

2-WIRE TRANSMITTER

The WK series 2-wire Transmitter system incorporates part of the vibration or thrust monitor into the conventional eddy current transducer, and can supply the power and transmit the signal with 2-wire current loop. There are two kinds of transmitters, the WK-142K is for shaft vibration and the WK-142-T is for thrust position.

Monitors or vibration converters are unnecessary.
Electric current output makes long wiring possible.
Direct connection to control instruments.
The ideal system for monitoring small compressor s.

Example of SYSTEM CONFIGURATION



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 5m and 9m, the total distance between sensor and driver.

Intrinsic safety explosion-proof construction

TIIS equivalent to IEC standard, Ex ia IIC T6

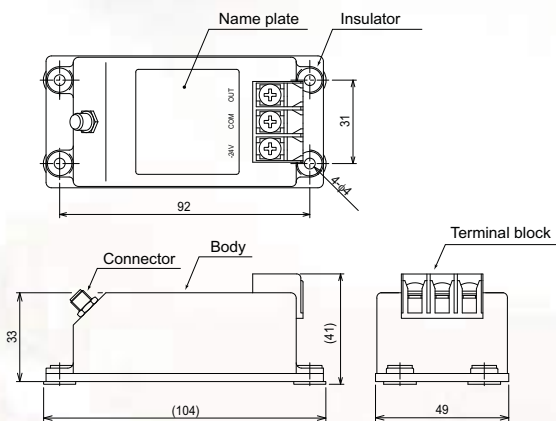
Anti-corrosion

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

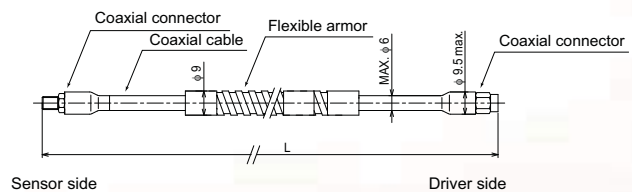
[Specifications]

		VK-152R
Calibration Material		JIS SCM440 (AISI 4140 Steel) Flat Surface
Linear Range		More than 1,500 μm
Sensitivity		787 mV / 100 μm
Operation Temperature Range	Sensor	-40 to +177deg. C (connector : MAX. 125 deg. C)
	Ext. cable	-40 to +177 deg.C
	Driver	-38 to +80 deg.C
Power Supply		-24 VDC (-18 to -26 VDC)
System Cable Length		15 m +/- 10% or 20 m +/- 10%

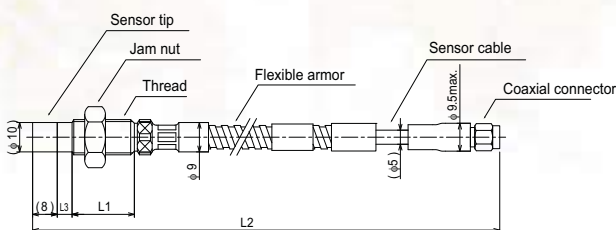
DRIVER



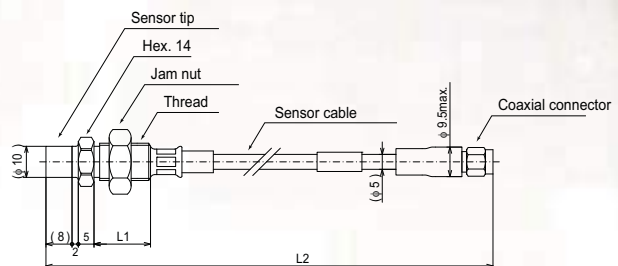
EXTENSION CABLE



SENSOR



REVERSE MOUNT TYPE SENSOR



Dimensions : mm



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