

# WKN-142 SERIES

# Two-wire TRANSDUCER



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# SIMPLE WIRING

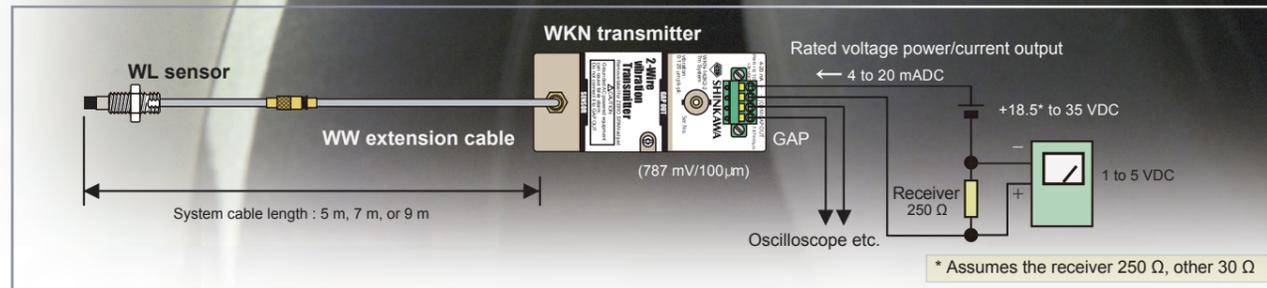
## TWO-WIRE TRANSDUCER

The WKN Series transmitter combines the signal conditioning circuit with the probe driver into one package for easy installation. The two wire current loop drives the transducer and transmits signals at the same time, saving wiring cost.

- Ideal for monitoring of general purpose rotating equipment and compressors.
- Compact, space-saving (50% smaller, 60% lighter than the conventional)
- Current output allows for long wiring distances.
- Direct connection to PLCs and DCS control systems. No external signal conditioner required.
- Phoenix terminal type allows for quick and efficient wiring
- RoHS and CE compliance



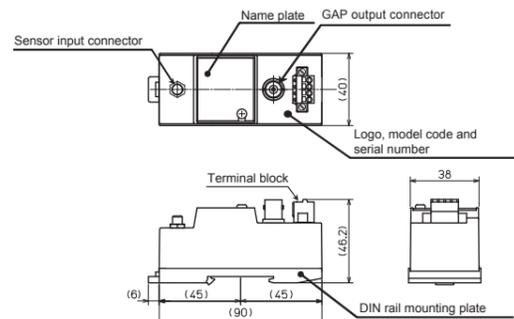
### System configuration



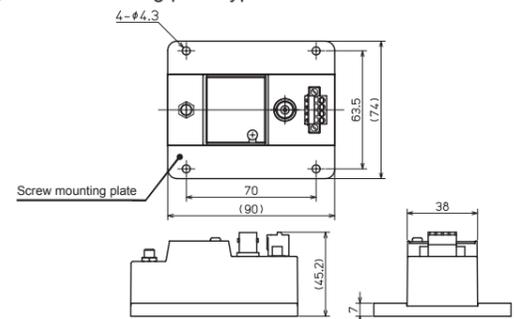
### Specification

#### Transmitter Outline Drawing (by mount type)

- 35 mm DIN rail mounting plate type



- Screw mounting plate type



For WK series users:  
Holes of screw mounting plates are the same as WK series.  
You can replace your WK series with WKN series without making new holes.

Specifications	WKN-142K	WKN-142T
<b>Current Output</b>		
4 to 20 mA Output Range	0 to 100 $\mu$ m pk-pk 0 to 125 $\mu$ m pk-pk 0 to 200 $\mu$ m pk-pk 0 to 250 $\mu$ m pk-pk 0 to 400 $\mu$ m pk-pk	-0.6 to 0 to +0.6 mm or -0.635 to 0 to +0.635 mm (-25 to 0 to +25 mils)
4 to 20 mA Conversion Accuracy	$\pm 1.5$ % of full scale range (Input to test pin and current output)	
Maxi. Load Resistance	43.5 $\times$ (Vps-12) $\Omega$ (Vps = power supply voltage)	
Calibration Target	JIS SCM440 flat surface	
Linear Range*	1.4 mm (Gap : 0.3 to 1.7 mm)	
Scale Factor*	7.87 mV/ $\mu$ m	
Scale Factor Error*	5 m, 7 m System: 7.87 mV/ $\mu$ m $\pm 6.5$ % typ. 9 m System: 7.87 mV/ $\mu$ m $\pm 10$ % typ. (Values include interchangeability errors) 200 $\mu$ m step, target diameter $\phi 30$ mm	
Output Impedance*	10 k $\Omega$ (calibrated at 10 M $\Omega$ load impedance)	
Frequency Response*	5 Hz to 6,000 Hz (+0 dB, -3 dB) at 900 $\mu$ m gap	
<b>System</b>		
Operation Temperature	Transmitter: Operation, 0 to 70 $^{\circ}$ C; Storage, -34 to +100 $^{\circ}$ C Sensor and cable: Operation -34 to +177 $^{\circ}$ C (Connector: Max.125 $^{\circ}$ C)	
Relative Humidity	30 to 95 % RH (non-condensing)	
Power Supply Voltage	12 to 35 VDC	
System Cable Length	5 m, 7 m, 9 m	

\* The specifications above apply to a system of WL-142K sensor, WW-142K extension cable and WKN-142 transmitter under the following conditions: calibration target, SCM440 flat surface; 24VDC power supply voltage; ambient temperature, 25 $^{\circ}$ C.

### Model code

#### Transmitter (for vibration)

WKN-142K  -  -  / NB1

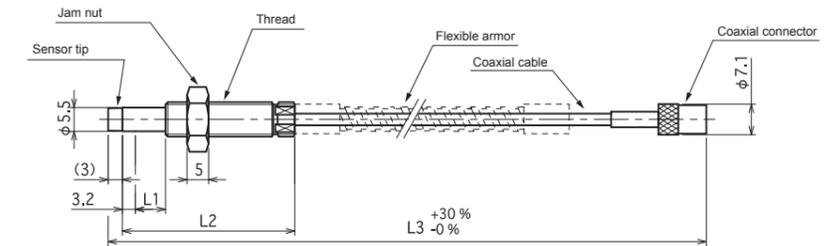
System Cable Length	Output Range	Mounting Plate	Non-incendive
1 5 m	1 0 to 100 $\mu$ m pk-pk	1 35 mm DIN Rail Mounting Plate	1 CSA: Class I Div.2 Gr.A,B,C,D ATEX: Ex nA II T4 Gc
2 7 m	2 0 to 125 $\mu$ m pk-pk	2 Screw Mounting Plate	
5 9 m	3 0 to 200 $\mu$ m pk-pk		
	4 0 to 250 $\mu$ m pk-pk		
	5 0 to 400 $\mu$ m pk-pk		

#### Transmitter (for thrust)

WKN-142T  -  -  / NB1

System Cable Length	Output Range	Mounting Plate	Non-incendive	
1 5 m	1 -0.6 to 0 to +0.6 mm	1 35 mm DIN Rail mounting plate	1 CSA: Class I Div.2 Gr.A,B,C,D ATEX: Ex nA II T4 Gc	
2 7 m	2 -0.635 to 0 to +0.635 mm	2 Screw mounting plate		
5 9 m				

#### Sensor

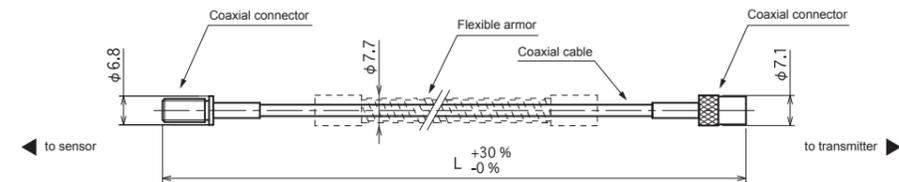


WL-142K05  -  -  -  -  -  -  / NB1

Armor	Thread Size	Unthreaded Length* (L1)	Case Length* (L2)	Cable Length** (L3)	Non-incendive
A (Without Fluoro resin coating)	M1	M8 X 1	10 mm step, 0 to 230 mm e.g.) 06=60 mm, L1 $\leq$ L2-20 mm	10 mm step, 20 to 250 mm e.g.) 25=250 mm	1 CSA: Class I Div.2 Gr.A,B,C,D ATEX: Ex nA II T4 Gc
	M2	M10 X 1			
	U1	1/4-28 UNF-2A	0.1 in step, 0 to 9.2 in e.g.) 04=0.4 in, L1 $\leq$ L2-0.7 in	0.1in step, 0.8 to 9.9 in e.g.) 35=3.5 in	
T (With Fluoro resin coating)	U2	3/8-24 UNF-2A			
L (Without)					

\* Specify length in mm for M thread, in inch for UNF-2A thread  
\*\* For sensors of cable length 5.0, 7.0, 9.0 meters, extension cable cannot be used. Connect the sensor cable directly to the transmitter.

#### Extension Cable



WW-142K  -  / NB1

Armor	Cable Length (L)	Non-incendive
A With (Without Fluoro resin coating)	1 4.0 m	1 CSA: Class I Div.2 Gr.A,B,C,D ATEX: Ex nA II T4 Gc
T With (With Fluoro resin coating)	2 4.5 m	
L Without	3 6.0 m	
	4 6.5 m	
	5 8.0 m	
	6 8.5 m	