

Fiberoptic Sensor - *Reflectance Compensated\**

## Model RC60

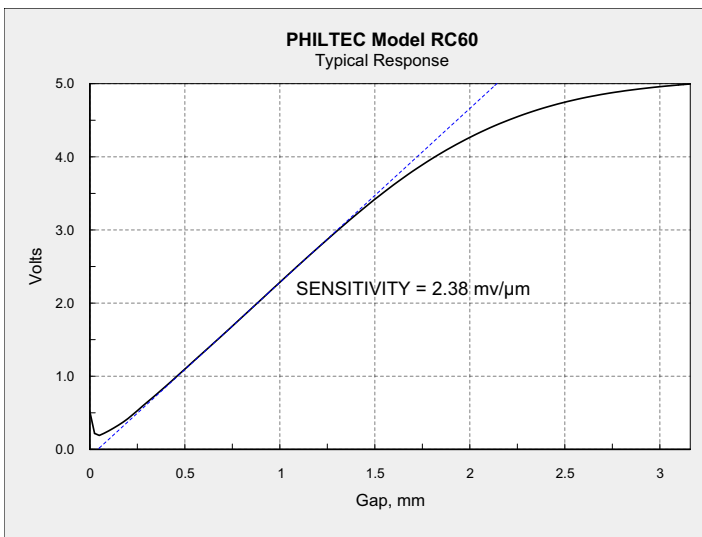
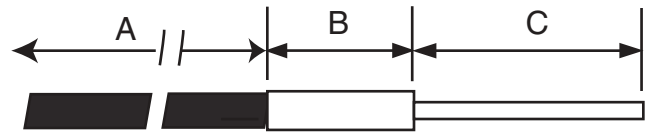
Fiberoptic Cable &amp; Sensor Tip - Actual Size



For The Measurement of Distance, Displacement and Vibration

## Features

- Reflectance Compensated Output
- 1.5 mm Diameter Spot Size (0.060 inch)
- 3.2 mm Operating Range (0.125 inch)
- 2.4 mv/ $\mu\text{m}$  Sensitivity (60 mv/mil)



FEATURE	mm	inch
Tip Outer Diameter, $\text{Ø C}$	2.1	0.083
Fiberoptic Diameter	1.52	0.060
Tip Length, C	38.1	1.5
Collar Length, B	12.7	0.5
Collar Diameter, $\text{Ø B}$	6.35	0.25
Cable Length, A	91	36
Cable Diameter, $\text{Ø A}$	5.2	0.205
Cable Min. Bend Radius	12.7	0.5

\*These are reflective type transducers based upon detecting the intensity of reflected light. RC Model sensors have a pair of adjacent fiberoptic detectors in the sensor tip. Light reflected off the target follows two separate paths back to the electronics where a ratiometric calculation provides the distance measurement which is independent of varying surface reflectance; i.e., *reflectance compensated*.

**PHILTEC**

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Precision Dynamic Measurements



## Two Instrument Packages To Choose From

This sensor can be provided as an analog or as a digital instrument.  
For available options and how to order go to [www.philtec.com](http://www.philtec.com)

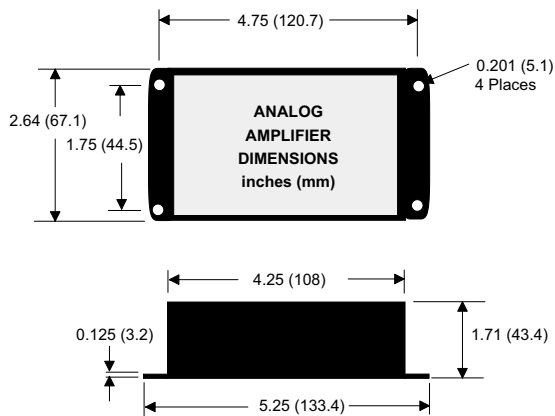


**A**nalog sensors are fast responding units ideal for relative motion measurements in dynamic applications:

- DC-20 KHz is standard
- DC-200 KHz or higher is optional

Standard analog units include:

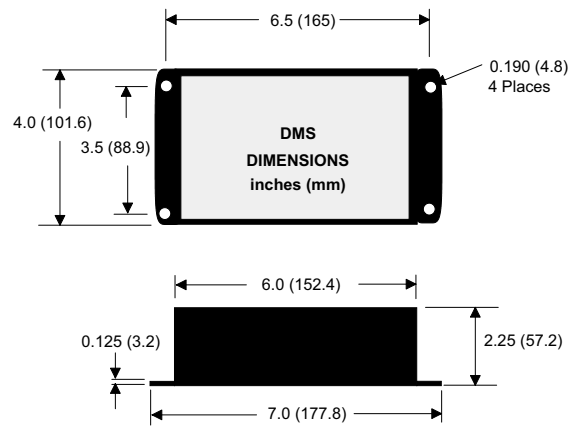
- Electronics with 0 to +5 VDC output
- 3 foot long fiberoptic cable



**D**isplacement Measurement Systems (DMS) are the best choice for absolute distance measurements, multiplexing and process control applications, with data rates up to 5,000 readings/second.

Standard DMS units include:

- Electronics with RS-232 communication
- Keypad/LCD for local operation
- Temperature Stabilized Electronics



DMS dimensions shown are for single and for dual channel systems

### Standard Specifications - RC60

Electronics		Fiberoptics		Outputs					
	Analog	DMS	Light Beam spread	30°	Analog Voltage			DMS RS232**	
Light Source	LED, 880 nm		Cable Sheathing	PVC over Steel Monocoil	Total Range	0.1250 in.	3.18 mm	Total Range	3.18 mm
Input Voltage	+12 to +24 VDC	+12 VDC	Tip Material	300 Series SS	Linear Range	0.045 in.	1.1 mm	Distance	16 bit resolution (1.8 µinch; 43 nm)
Input Current	125 ma max	500 ma max	Tip Epoxy Outgas	0.3% @ 200°C 2.4% @ 300°C	Nominal Standoff	0.040 in.	1.0 mm	Reflectance	8 bit resolution
Bandwidth	DC-20 KHz 3 db down	5 KHz max	Tip Operating Pressure	35 bar	Sensitivity	60 mv/mil	2.4 mv/µm	Amplifier Temperature	12 bit resolution
Iso-thermal Drift	0.5%	0.05%	Tip Operating Temperature	-55 to 175°C continuous; to 350°C intermittent 1-2 hours	Noise	DC - 200KHz DC - 20 KHz DC - 100 Hz	50 µin 15 µin 3 µin	Noise Pk-Pk Units/Second at Mid Range using 50% Signal Power	ADC AVG = 1 pk-pk = 0.5 µm ADC AVG = 16 pk-pk = 0.1 µm ADC AVG = 256 pk-pk = 30 nm ADC AVG = 4096 pk-pk = 15 nm

\*\* DMS are microprocessor based systems with gap calibrations stored on-board. They provide direct output of distance, reflectance and amplifier temperature via RS-232 protocol. 31 calibrations for various conditions can be stored per channel. Functions include tare, calibration scaling, and pk-pk readings.