

Fiberoptic Sensor - *Reflectance Compensated**

Model RC171

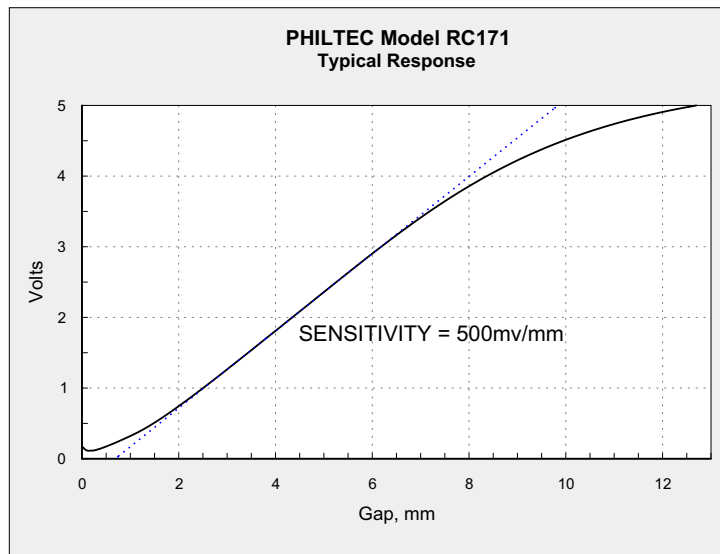
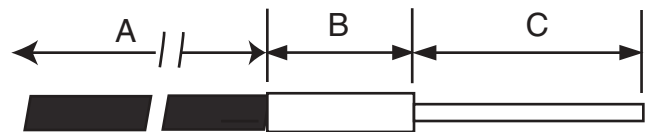
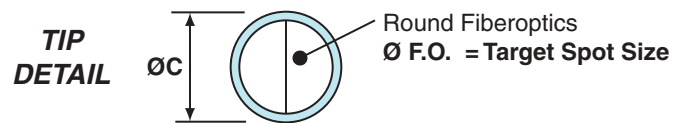
Fiberoptic Cable & Sensor Tip - Actual Size



For The Measurement of Distance, Displacement and Vibration

Features

- Reflectance Compensated Output
- 4.34 mm Diameter Spot Size (0.171 inch)
- 12.7 mm Operating Range (0.500 inch)
- 500 mv/mm Sensitivity (14 mv/mil)
- 5 mm Standoff Distance (0.200 inch)



FEATURE	mm	inch
Tip Outer Diameter, Ø C	4.75	0.187
Fiberoptic Diameter	4.34	0.171
Tip Length, C	38.1	1.5
Collar Length, B	12.7	0.5
Collar Diameter, Ø B	7.92	0.312
Cable Length, A	915	36
Cable Diameter, Ø A	6.86	0.270
Cable Min. Bend Radius	29	1.125

*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

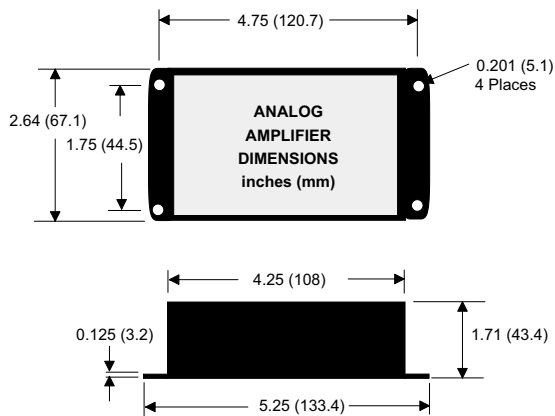


Analog sensors are fast responding units ideal for relative motion measurements in dynamic applications:

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

Standard analog units include:

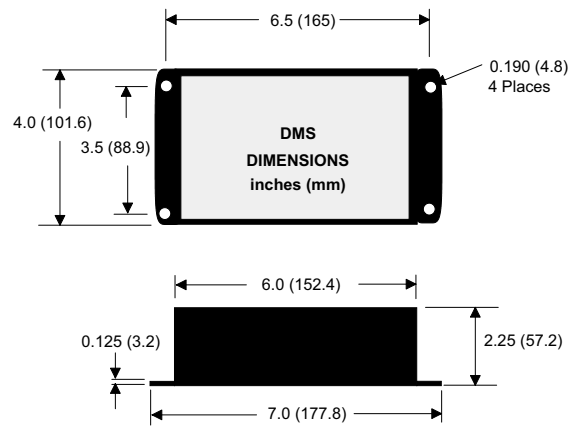
- Electronics with 0 to +5 VDC output
- 3 foot long fiberoptic cable



Displacement 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 - RC171

Electronics		Fiberoptics		Outputs					
	Analog	DMS	Light Beam spread	25°	Analog Voltage			DMS RS232**	
Light Source	LED, 850 nm		Cable Sheathing	PVC over Steel Monocoil	Total Range	0.500 in.	12.7 mm	Total Range	12.7 mm
Input Voltage	+12 to +24 VDC	+12 VDC	Tip Material	300 Series SS	Linear Range	0.160 in.	4.1 mm	Distance	16 bit resolution (8 µinch; 0.2 µm)
Input Current	125 ma max	500 ma max	Tip Epoxy Outgas	0.3% @ 200°C 2.4% @ 300°C	Nominal Standoff	0.175 in.	4.4 mm	Reflectance	8 bit resolution
Bandwidth	DC-20 KHz 3 db down	5 KHz max	Tip Operating Pressure	35 bar	Sensitivity	14 mv/mil	500 mv/mm	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	1000 µin	25 µm	Noise Pk-Pk Units/Second at Mid Range using 50% Signal Power	ADC AVG = 1 pk-pk = 1.7 µm ADC AVG = 16 pk-pk = 0.6 µm ADC AVG = 256 pk-pk = 0.12 µm ADC AVG = 4096 pk-pk = 50 nm
					Noise DC - 20 KHz	300 µin	7.6 µm		
					Noise DC - 100 Hz	15 µin	0.4 µm		

** 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.