

Fiberoptic Sensor - *Reflectance Compensated**

Model RC190

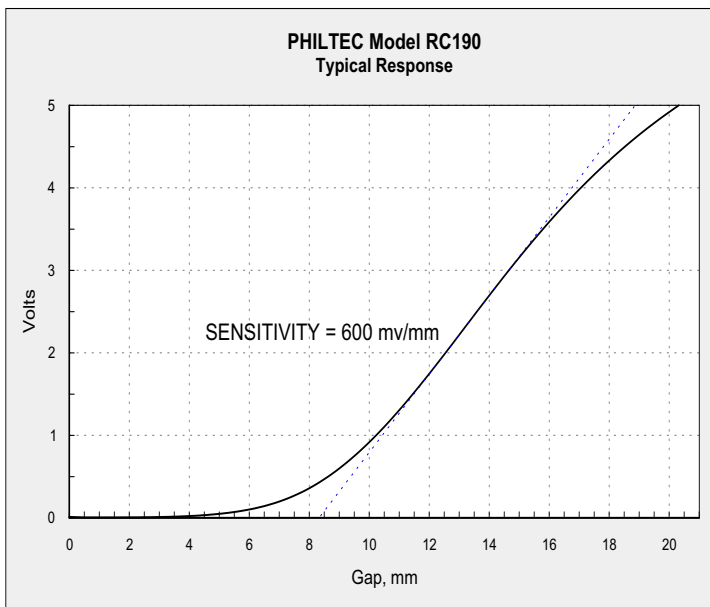
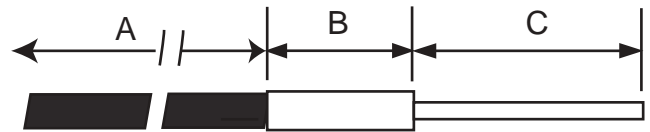
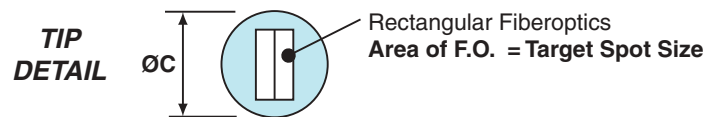
Fiberoptic Cable & Sensor Tip - Actual Size



For The Measurement of Distance, Displacement and Vibration

Features

- Reflectance Compensated Output
- Largest Standoff in the RC Series
- 14 mm Operating Range (0.550 inch)
- 600 mv/mm Sensitivity (16 mv/mil)
- 10 mm Standoff Distance (0.400 inch)



| FEATURE | mm | inch |
|-------------------------|-------------|--------------|
| Tip Outer Diameter, Ø C | 7.925 | 0.312 |
| Fiberoptic Area | 2.29 x 4.75 | 0.09 x 0.187 |
| Tip Length, C | 25.4 | 1 |
| Collar Length, B | 12.7 | 0.5 |
| Collar Diameter, Ø B | 7.925 | 0.312 |
| Cable Length, A | 915 | 36 |
| Cable Diameter, Ø A | 6.86 | 0.270 |
| Cable Min. Bend Radius | 25.4 | 1 |

*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

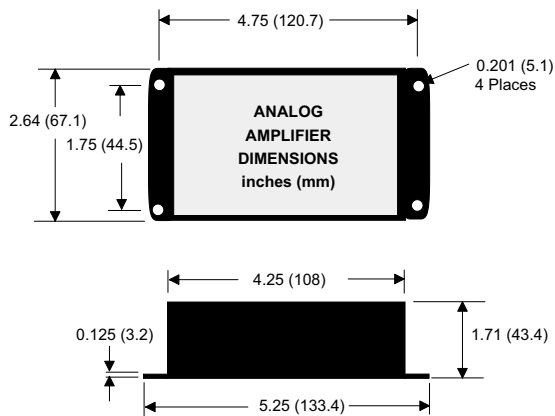


Analog sensors are fast responding units ideal for relative motion measurements in dynamic applications:

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

Standard analog units include:

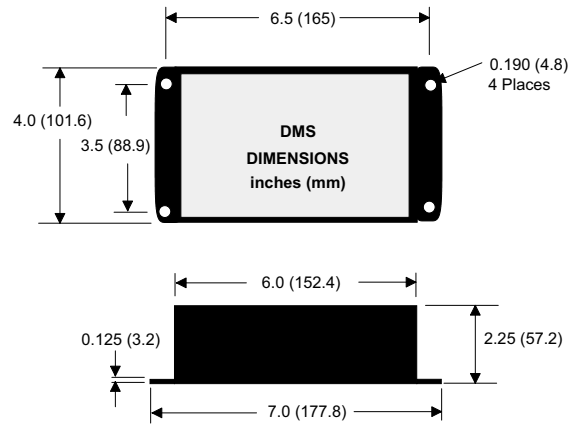
- Electronics with 0 to +5 VDC output
- 3 foot long fiberoptic cable



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 - RC190

| Electronics | | Fiberoptics | | Outputs | | | | | |
|-------------------|------------------------|-------------|---------------------------|---|------------------|---|-------------------------------|--|---|
| | Analog | DMS | Light Beam spread | 25° | Analog Voltage | | | DMS RS232** | |
| Light Source | LED, 880 nm | | Cable Sheathing | PVC over Steel Monocoil | Total Range | 0.550 in. | 14 mm | Total Range | 14 mm |
| Input Voltage | +12 to +24 VDC | +12 VDC | Tip Material | 300 Series SS | Linear Range | 0.110 in. | 2.8 mm | Distance | 16 bit resolution (0.8 µinch; 20 nm) |
| Input Current | 125 ma max | 500 ma max | Tip Epoxy Outgas | 0.3% @ 200°C 2.4% @ 300°C | Nominal Standoff | 0.400 in. | 10 mm | Reflectance | 8 bit resolution |
| Bandwidth | DC-20 KHz 3 db down | 5 KHz max | Tip Operating Pressure | 35 bar | Sensitivity | 16 mv/mil | 600 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 DC - 20 KHz DC - 100 Hz | 1200 µin 280 µin 28 µin | Noise Pk-Pk Units/Second at Mid Range using 50% Signal Power | ADC AVG = 1 pk-pk = 1.6 µm ADC AVG = 16 pk-pk = 0.8 µm ADC AVG = 256 pk-pk = 0.2 µm ADC AVG = 4096 pk-pk = 40 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.