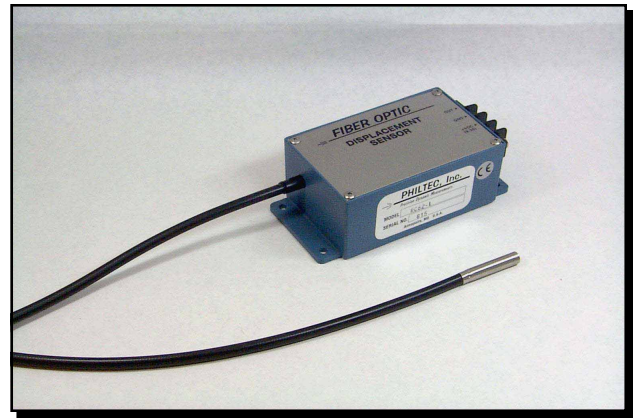
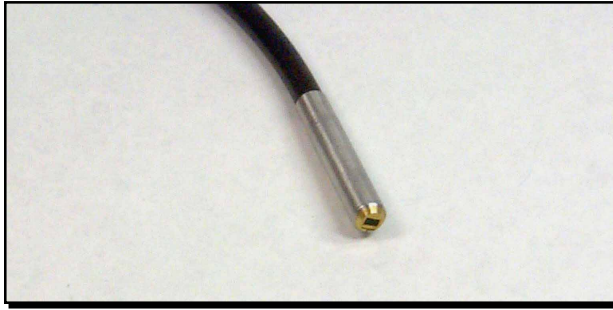


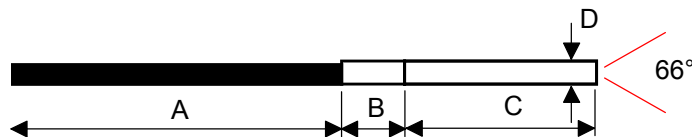
# Model RC62



## Non-Contact Fiberoptic Displacement Sensor

### Features

- Reflectance Compensated Output
- 2 mm Operating Range (0.08")
- 1.6 x 3.2 mm Fiberoptic Bundle



| FEATURE                             | DIMENSION | INCH             | MM               |
|-------------------------------------|-----------|------------------|------------------|
| Fiber Bundle Area<br>Width x Length |           | 0.062<br>x 0.125 | 1.575<br>x 3.175 |
| Tip Outer Diameter                  | D         | 0.281            | 7.137            |
| Tip Length                          | C         | 1.0              | 25.4             |
| Collar Length                       | B         | 0.5              | 12.7             |
| Collar Diameter                     | B Dia.    | 0.281            | 7.137            |
| Cable Length                        | A         | 36               | 91.44            |
| Cable Diameter                      | A Dia.    | 0.235            | 5.969            |
| Cable Minimum<br>Bend Radius        |           | 0.875            | 22.2             |

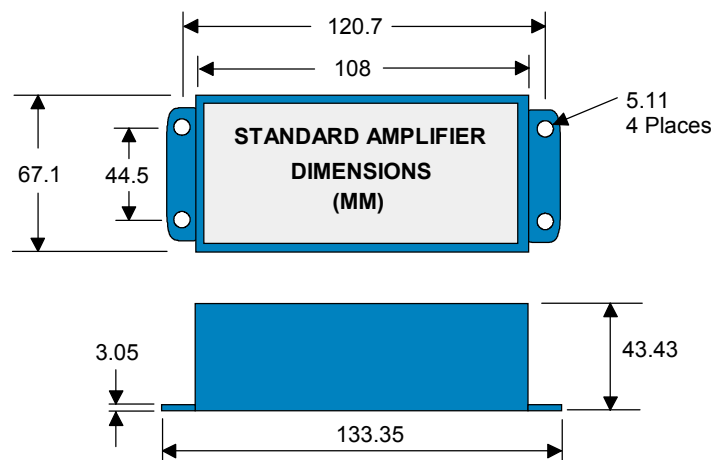
Standard off-the-shelf hardware is provided with dimensioning shown.

*Custom hardware is encouraged to suit an application's requirements. Many variations are possible.*

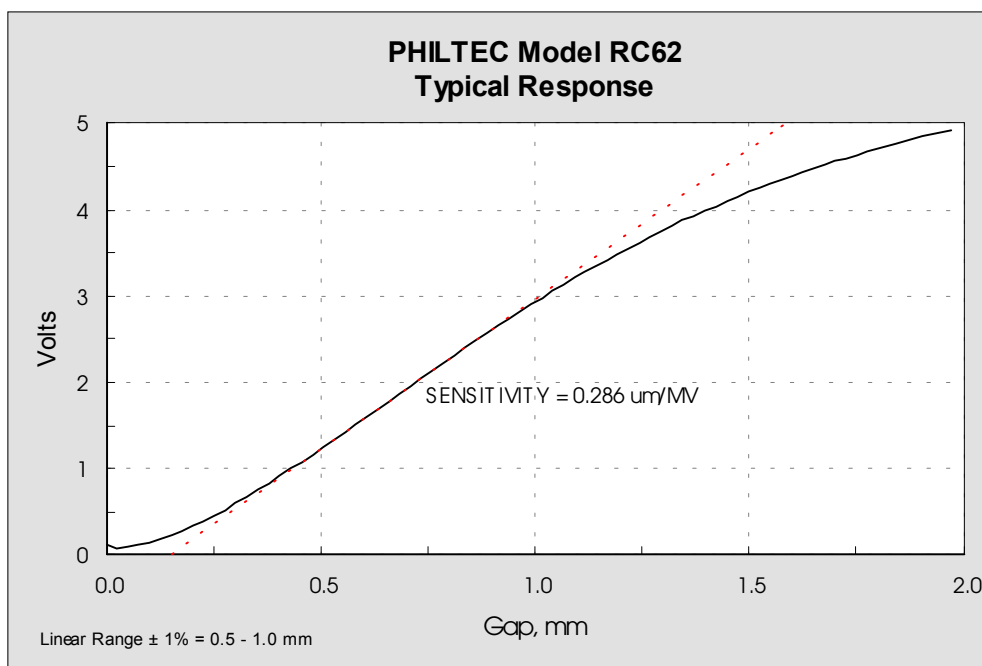
Contact the factory for design assistance: [designhelp@philtec.com](mailto:designhelp@philtec.com)

Note: Target Spot Size = Fiber Bundle Area

**DESCRIPTION.** Bundled glass fibers transmit and receive light reflected from target surfaces. The intensity of the reflected light is processed to provide a reflectance compensated voltage output. Standard units include the fiberoptic cable, sensor tip and amplifier providing 0 - 5 volt analog outputs with DC - 20 KHz bandwidth. The amplifier requires user supplied DC power. The electronics and fiberoptic cable are set into the amplifier housing with an epoxy potting compound to provide a rugged and inert device.



# PHILTEC



Conversions: 1 mil = .001 inch = 25.4 microns = .0254 mm      1 mm = 39.4 mils    1 micron = 39.4 microinch

| Standard Specifications |                               |                             |                                                             |                                                   |                |                |
|-------------------------|-------------------------------|-----------------------------|-------------------------------------------------------------|---------------------------------------------------|----------------|----------------|
| Amplifier               |                               | Fiber Optics                |                                                             | Sensor                                            |                |                |
| Light Source            | LED, 880 nm                   | Tip Light Beam Spread       | 66 degrees                                                  | Total Range                                       | 80 mils        | 2 mm           |
| Input Voltage           | +12 to +30 VDC<br>unregulated | Cable Sheathing Material    | PVC Over Steel<br>Monocoil Wrap                             | Linear Range                                      | 24 mils        | 0.61 mm        |
| Input Current           | 125 ma maximum                | Tip Housing Material        | 300 series stls stl                                         | Distance To Middle of<br>Linear Range             | 40 mils        | 1 mm           |
| Analog Output Voltage   | 0 to + 5 VDC                  | Tip Epoxy Outgas            | 0.3% @ 200°C 1 hr;<br>2.4% @ 300°C                          | Sensitivity                                       | 12 $\mu$ in/MV | 0.3 $\mu$ m/MV |
| Analog Output Current   | 5 ma max                      | Tip Operating Pressure      | 500 psig                                                    | Resolution, DC - 100 Hz                           | 4 $\mu$ IN     | 0.1 $\mu$ m    |
| Frequency Response      | DC - 20 KHz<br>(3 db down)    | Tip Operating Temperature   | -55 to 175°C Continuous<br>to 350°C intermittent<br>1-2 hrs | Resolution, DC - 20 KHz<br>(Standard Bandwidth)   | 36 $\mu$ IN    | 0.91 $\mu$ m   |
| Electronic Drift        | <0.1% FS (5 mv)               | Cable Operating Temperature | 10 to 107°C                                                 | Resolution, DC - 200 KHz                          | 144 $\mu$ IN   | 3.7 $\mu$ m    |
| Operating Temperature   | 0 to 70°C                     |                             |                                                             | Noise Ripple @ 2.0 VDC<br>In Passband DC - 20 KHz | 3.0 mv pk-pk   |                |
| Weight                  | 0.60 kg (1.3 lbs)             |                             |                                                             |                                                   |                |                |

## RESOLUTION

- Sensitivity** is measured in units of micron/millivolt.
- Noise Ripple** is defined as the pk-pk amplitude (millivolts) of sensor noise, in the time domain, over the sensor frequency passband; i.e., from DC - 20 KHz (standard).
- Resolution (microns) = Sensitivity x Noise Ripple**

*Noise Ripple is proportional to the square root of the sensor DC Output Voltage. For RC model sensors, Noise Ripple is measured at 2.0 VDC. Noise ripple can be minimized in any application by operating the sensor at as low a DC voltage level as possible.*