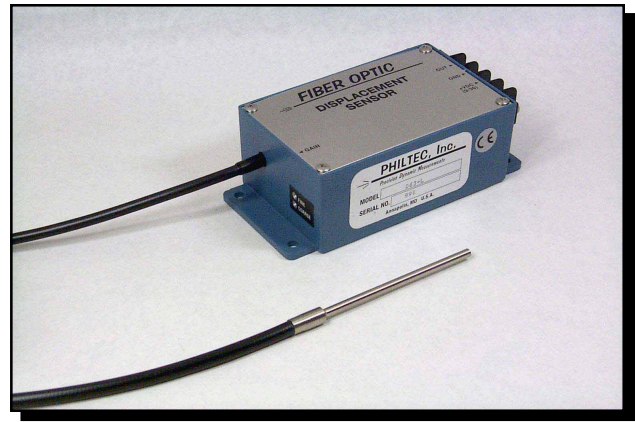


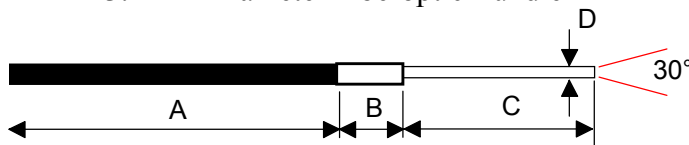
Model D125



Non-Contact Fiberoptic Displacement Sensor

Features

- Reflectance Dependent Output
- 15 mm Operating Range (0.60")
- 3.2 mm Diameter Fiberoptic Bundle



FEATURE	DIMENSION	INCH	MM
Fiber Bundle Diameter	E	0.125	3.18
Tip Outer Diameter	D	0.156	3.96
Tip Length	C	3.0	76.2
Collar Length	B	0.5	12.7
Collar Diameter	B Dia.	0.280	7.11
Cable Length	A	36	915
Cable Diameter	A Dia.	0.232	5.89
Cable Minimum Bend Radius		0.875	22.2

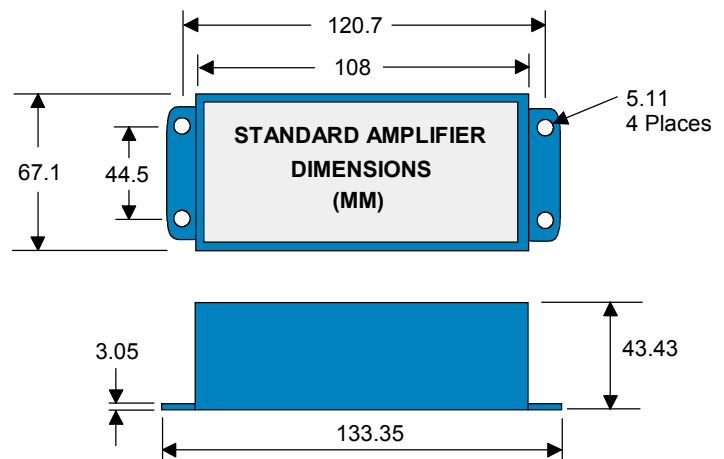
Note: Target Spot Size = Fiber Bundle Diameter

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

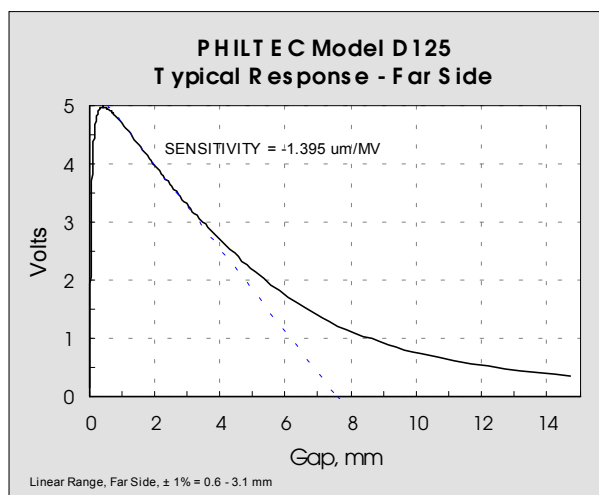
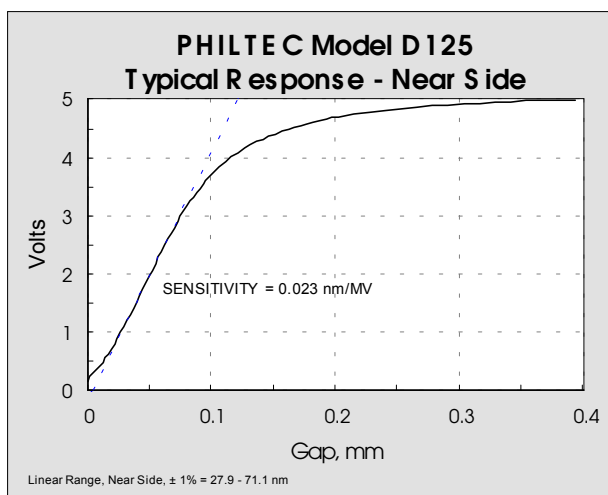
Custom hardware is encouraged to suit an application's requirements. Many variations are possible.

Contact the factory for design assistance: designhelp@philtec.com

DESCRIPTION. Bundled glass fibers transmit and receive light reflected from target surfaces. The intensity of the reflected light is processed to provide a reflectance dependent 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	30 degrees	Total Range	600 mils	15.2 mm
Input Voltage	+12 to +30 VDC unregulated	Cable Sheathing Material	PVC Over Steel Monocoil Wrap	Far Side Linear Range	125 mils	3.18 mm
Input Current	125 ma maximum	Tip Housing Material	300 series stls stl	Near Side Linear Range	2.0 mil	0.051 mm
Analog Output Voltage	0 to + 5 VDC	Tip Epoxy Outgas	0.3% @ 200°C 1 hr; 2.4% @ 300°C	Distance To Middle of Linear Range - Far Side	100 mils	2.54 mm
Analog Output Current	5 ma max	Tip Operating Pressure	500 psig	Distance To Middle of Linear Range - Near Side	3.0 mils	0.076 mm
Frequency Response	DC - 20 KHz (3 db down)	Tip Operating Temperature	-55 to 175°C Continuous to 350°C intermittent 1-2 hrs	Optical Peak	21 mils	0.53 mm
Electronic Drift	<0.1% FS (5 mv)	Cable Operating Temperature	10 to 107°C	Far Side Sensitivity	68 μ m/MV	1.73 μ m/MV
Operating Temperature	0 to 70°C			Sensitivity - Near Side	1.0 μ m/MV	25.4 nm/MV
Weight	0.60 kg (1.3 lbs)			Noise Ripple @ 3.5 VDC In Passband DC - 20 KHz	1.0 mv pk-pk	

Resolutions (in the linear ranges)

	Near Side		Far Side	
	μ inch	μ m	μ inch	μ m
DC - 100 Hz	0.2	0.005	7.0	0.18
DC - 20 KHz (Standard)	1.25	0.03	70.0	1.8
DC - 200 KHz	4.0	0.10	420	10.7

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 D model sensors, Noise Ripple is measured at 3.5 VDC. Noise ripple can be minimized in any application by operating the sensor at as low a DC voltage level as possible.

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