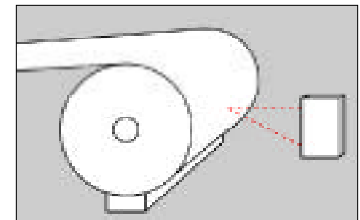
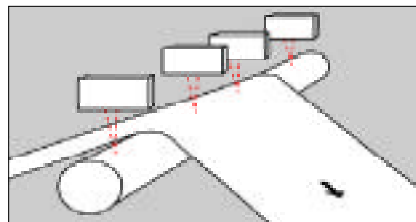
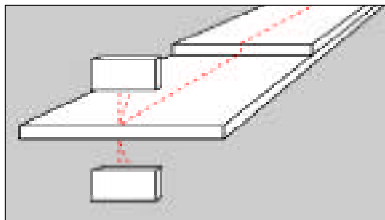
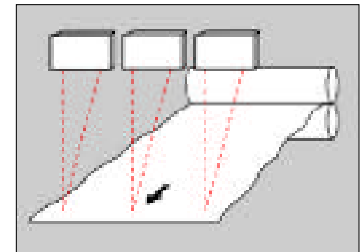
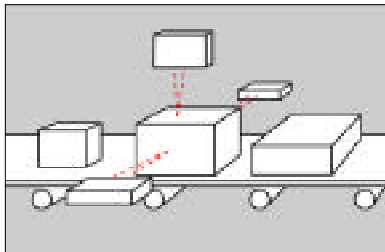
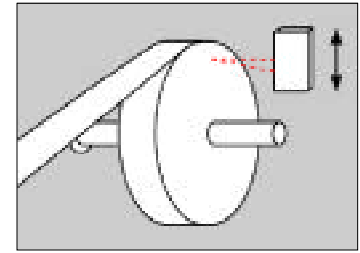
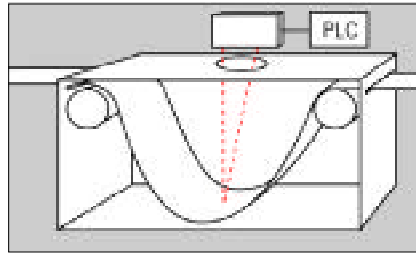
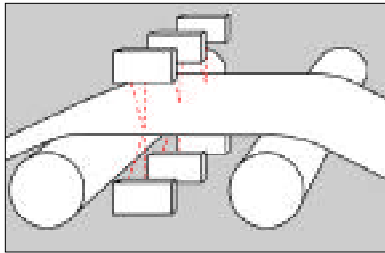


Mid Range Laser Distance Sensors

1700 DSP Series



General Description

The 1700 series incorporate the latest in CMOS Digital Signal Processing (DSP) technology which significantly reduces the laser speckle problem enabling them to easily measure materials with colors ranging from black rubber to white.

The 1700 DSP series delivers a complete non contact laser displacement measurement system in one simple yet elegant package. The series includes twelve (12) DSP sensors with measurement ranges from 3.175 to 1270mm. The 1700 series is optimum for cost effective and accurate measurements.

For integration in control systems, the input is low voltage DC (15 to 24 VDC). RS 232, 422 and analog outputs are standard on the 1700 series. Output laser parameters can be set using a pushbutton on the sensor or serially through commands from a PC.

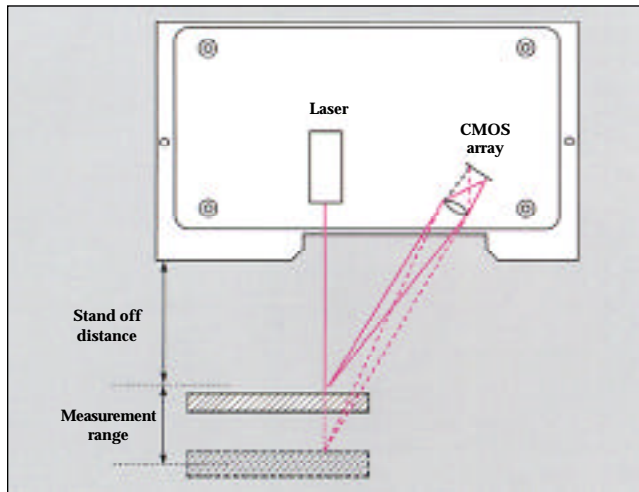
Features

- 3.175 to 1270mm (0.125 to 50") measurement ranges
- 0.005% resolution on measurement range
- 0.03% linearity on measurement range
- 9.4KHz maximum measurement frequency
- Complete system in one housing
- Outputs include RS 232, 422 and analog
- Class 2 laser for plant safety for sensors up to 101.6mm measuring range. All larger ranges are class 3R

Mid Range Laser Distance Sensors

Measurement Principle

The measurement technique is based on optical triangulation. One side of a triangle can be calculated when two other parameters are known, such as an angle which is measured and one side which is constant.



Pictured above is the measurement principle used in the 1700 series. The stand off distance is how far away the object is to be measured. The measurement range is how much the object can move to or from the stand off distance and stay within the measurement range of the sensor. A CMOS array is used to receive the reflected laser light from the object to determine the distance from the object.

1700 Series DSP Sensors

Meas. Range	Stand off	Resolution	Linearity
3.175mm	11.11mm	0.159µm	± 0.0009mm
6.35mm	15.92mm	0.318µm	± 0.0019mm
12.7mm	25.45mm	0.636µm	± 0.0038mm
25.4mm	35.6mm	1.27µm	± 0.0076mm
50.8mm	59.9mm	2.54µm	± 0.0152mm
101.6mm	78.2mm	5.08µm	± 0.030mm
152.4mm	279.8mm	7.62µm	± 0.0457mm
203.2mm	330.4mm	10.16µm	± 0.060mm
406.4mm	304.8mm	20.32µm	± 0.122mm
609.6mm	787.2mm	30.48µm	± 0.183mm
812.8mm	660.6mm	40.64µm	± 0.243mm
1270mm	787mm	63.5µm	± 0.362mm

Note: linearity is specified at 500Hz.

General Specifications

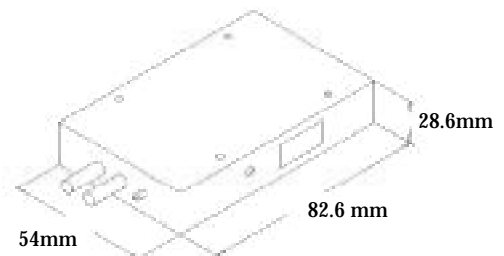
Laser power	Class 2, 650nm red visible diode for measurement ranges to 101.6mm Class 3R for measurement ranges from 152.4 to 1270mm
Power (VDC)	15 to 24 DC
Operating Temp.	0 to 50° C
Weight	205 grams (7.2 oz.)
Dimensions	82.6 L x 28.6 T x 54 H (mm)
Enclosure	aluminum, Nema - 4, IP -67
Sample rate	0.2 to 9400Hz. maximum

Outputs

Analog outputs	4-20ma (scalable), 0 - 10VDC
Serial output	RS 232, RS 422
Limit switches	Two digital limit switches

Options

1. Higher power upgrades for dark, shiny and radiating surfaces
2. Optical filter for bright or glowing targets
3. 1700 series utility software to set parameters and to read measurements
4. Integrated cables with power supply



The closer you look, the better we measure!

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