AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

orbit LTM

A high precision non-contact laser for gauging

Description

Solartron Metrology, the world leader in linear measurement innovation, has now added another high performance sensor to it's line-up. Orbit LTM is a Laser Triangulation unit for precision measurements, with up to 0.03% F.S. reading over 2 or 10mm measurement ranges. Orbit LTM will connect to Orbit®, and network with any Solartron or 3rd party sensors.

Its advantages include:

➢Auto Gain Circuitry: The unit automatically adjusts the power to the laser based on feedback from the material, providing better readings on more difficult surfaces

➢Gap Time: If you are checking a surface with gaps or holes that could throw off data, the laser has a bridging function where you can program the laser to account for those dropoffs. Your data is then less likely to be skewed.

➢Diffuse or Specular modes: Instead of purchasing a separate unit for Diffuse or Specular applications, the laser can switch between the two different modes, depending on the material. For Specular Mode, the laser must be tilted to 22.5 degrees from the perpendicular axis.

Features

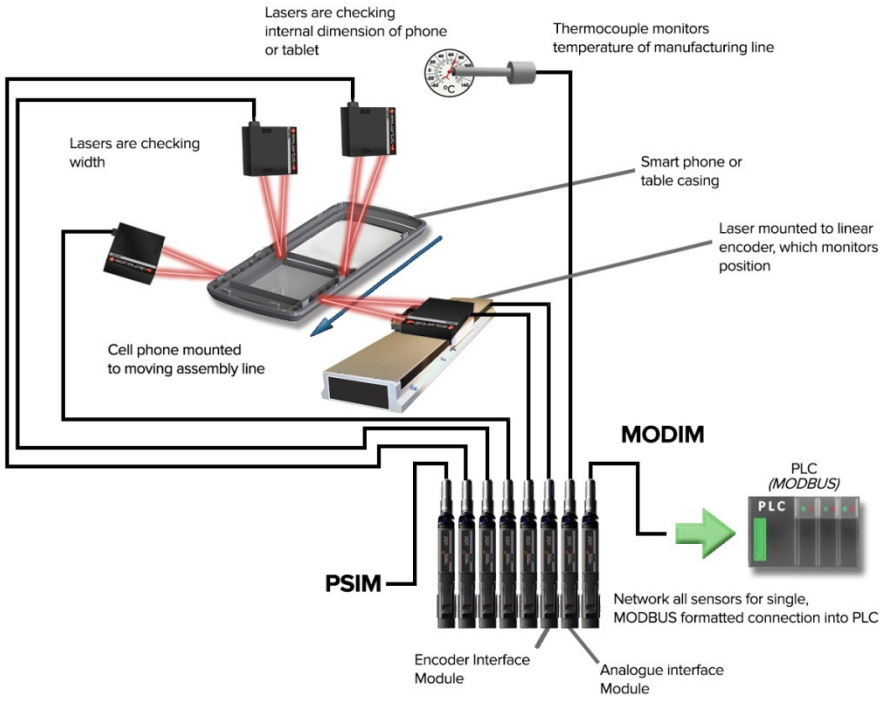
➢2 mm and 10mm ranges
➢Up to +/- 0.03% F.S. Accuracy
➢Up to 0.24 µm resolution
➢40 khz sampling speed,
➢Up to 4 khz output
➢Plugs into Orbit®3, network up to 150 sensors
➢Integrate with Orbit ACS for stand alone systems
➢USB, Ethernet TCP, RS232, and Modbus outputs available
➢Laser Beam Control – The LTM beam can be switched off, allowing multiple lasers to measure points very close together where beam interference could occur. In the "beam off" mode, the laser head remains powered so that readings can quickly be taken after turning the beam on.

Product Applications

Precision. Quality. Reliability

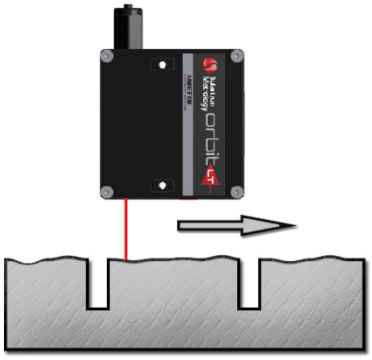
www.solartronmetrology.com • sales.solartronmetrology@ametek.com

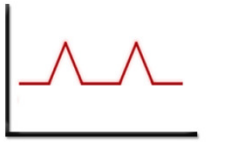
Network Orbit LTM with other sensors via Orbit® or Orbit® ACS



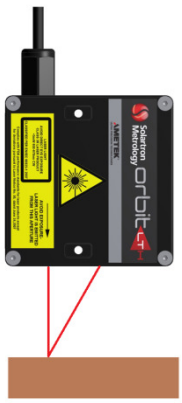
Indicator Light to show when in range

Gap Time Feature





Diffuse Mode



Specular Mode (for reflective surfaces)

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Technical Specification

Measurement Range (mm)	2	10
Offset Distance (from laser to start of measurement range) (mm)	24	45
Reference Distance (from laser to centre of measurement range) (mm)	25	50
Spot size (diameter µm)	30	25
Linearity (1) (+%FSO)	0.03	0.04
Linearity (1) (µm)	0.6	4
Repeatability (2) (µm)	0.4	0.6
Resolution (µm)	0.24	0.3
Max Sampling Frequency	40khz	
Output frequency	Up to 4khz (via Orbit®3 network)	
Sampling cycles	256/512 us or 1/2/4/8/16/32/64 ms	
Working Bandwidth (6) (eight options)	1300, 650, 325, 163, 81, 40, 20, 10, 5 Hz	

(1) Measured on white photographic paper with the laser sample rate at 4khz and averaging 16 cycles
(2) Measured on white photographic paper with the laser sample rate at 4 khz and averaging 16 cycles, with the laser beam broken in between readings

*Laser can be calibrated to surface you intend to measure. Please contact your local Solartron representative for details.

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Technical Specification

Laser

Laser Power	<5mW
Laser Class (IEC 60825)	3R
Laser Wavelength	670nm
Laser Modes	Diffuse or Specular

Environmental

Sealing for Laser	IP67
Sealing for Laser Interface Electronics	IP43
Storage Temperature (ºC)	-20 to +70
Operating Temperature (ºC)	0 to 40
Humidity Range	10 to 95% Non condensing
Temperature Coefficient	±0.05% to F.S./℃
EMC	Emissions EN61000-6-3
	Immunity EN61000-6-2
Power	
Orbit®3 version	5±0.25 VDC @ 0.09A and 24±2.5 VDC @ 0.06A typical
Orbit ACS version	18 - 24 VDC @ 0.13A typical
Weight of Laser Head only (g)	203

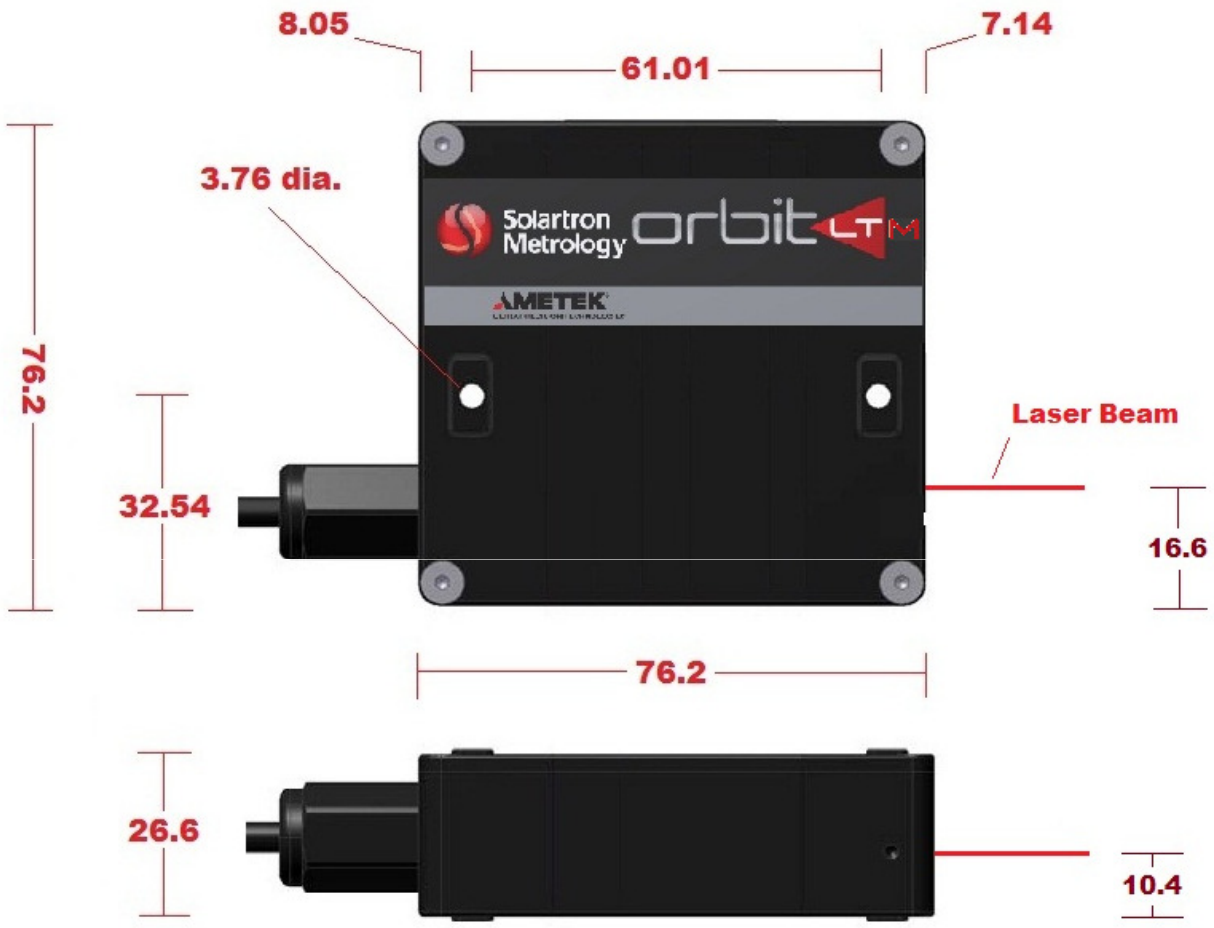
Interface

Orbit®3 version	Integrates with the Orbit®3 network via the Orbit®3 Support Pack for Windows (for Microsoft .NET Framework), version 1.3.1.4 or above. - Available to download, free of charge, at www.solartronmetrology.com
Method to configure laser	Via the Orbit®3 Library, included as part of the pack
Orbit interfaces	USB, Ethernet, RS232, Modbus
Orbit Power Supplies	Orbit LT Power Supply Module, AC and DC versions available
Orbit ACS version	Integrated into an Orbit ACS module
Method to configure laser	Via the integral display / keyboard or via the PC based configurator software. - Available to download, free of charge, at www.solartronmetrology.com

See separate Orbit®3 manual & Orbit® ACS datasheets for further product details

*Accuracy determined on white, non-porous surface, LTH filter set to 200Hz
**Depends on surface being measured, LTH filtering level set

Dimensional Drawing



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