Solartron Metrology / AMETEK

orbit® LT

# NON-CONTACT LASER TRIANGULATION SENSORS

A new range of precision laser triangulation sensors that are fully Orbit Enabled and compatible with all Solartron Readouts and Gauging Software

## KEY FEATURES

- Very Compact 20 mm wide
- Measuring Range LT1 (25mm), LT2 (10mm)
- Accuracy – better than 12 µm
- Repeatability LT1 – 2.5 µm, LT2 0.5 µm
- Resolution LT1 – 0.4 µm , LT2 0.15 µm
- Sampling Rate up to 4 kHz
- LT2 specifically for shiny metallic surfaces

Features

- High Measurement accuracy with excellent repeatability
- Fast measurement rates
- Beam on/off function
- Measurement of distance and thickness on numerous surfaces
- Ideal for automation and process control
- Compatible with Solartron Readouts, OrbitGauge Software, GCS Software
- Easy connections to PC or PLC

EtherNet/IP

PROFINET®

EtherCAT®

Modbus

CC-Link

Precision. Quality. Reliability

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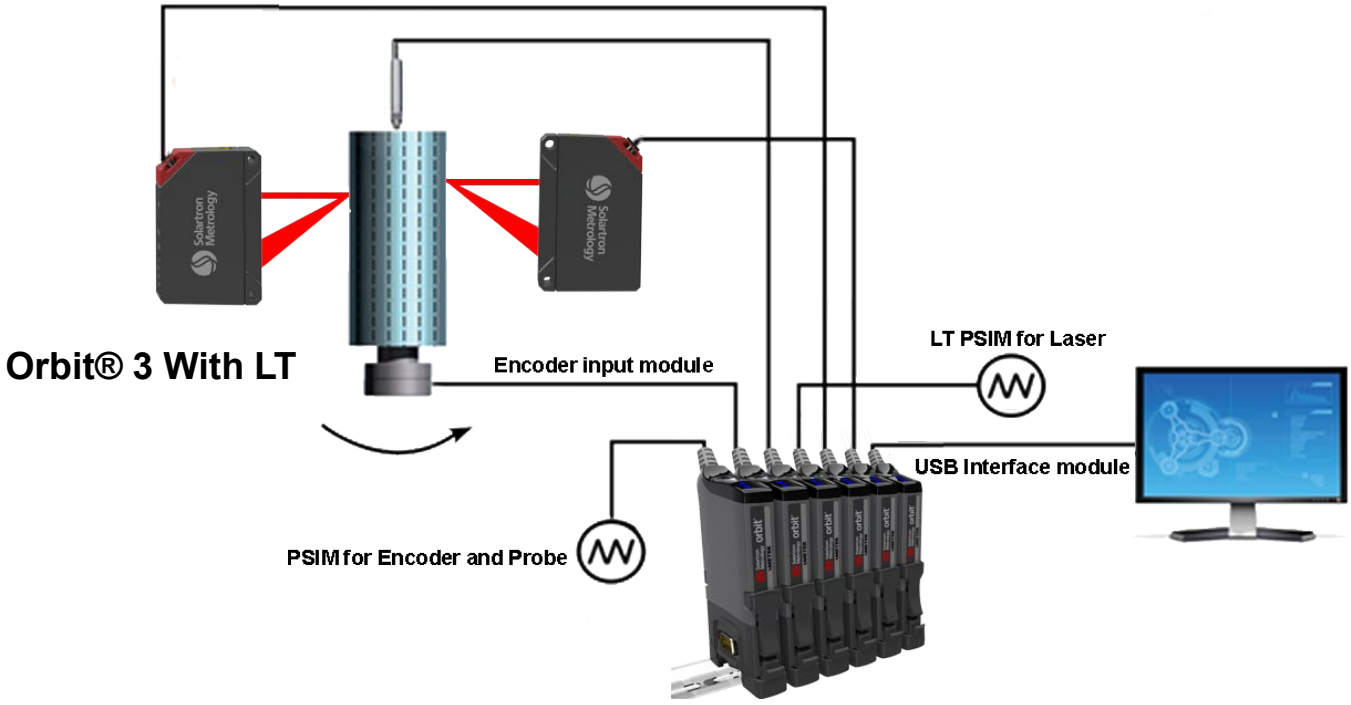
22/04 Datasheet Number 503772

# Orbit® LT1 and LT2 Applications



Network Orbit® LT with other gauging probes or sensors via the Orbit® 3 network.

# Technical Specification

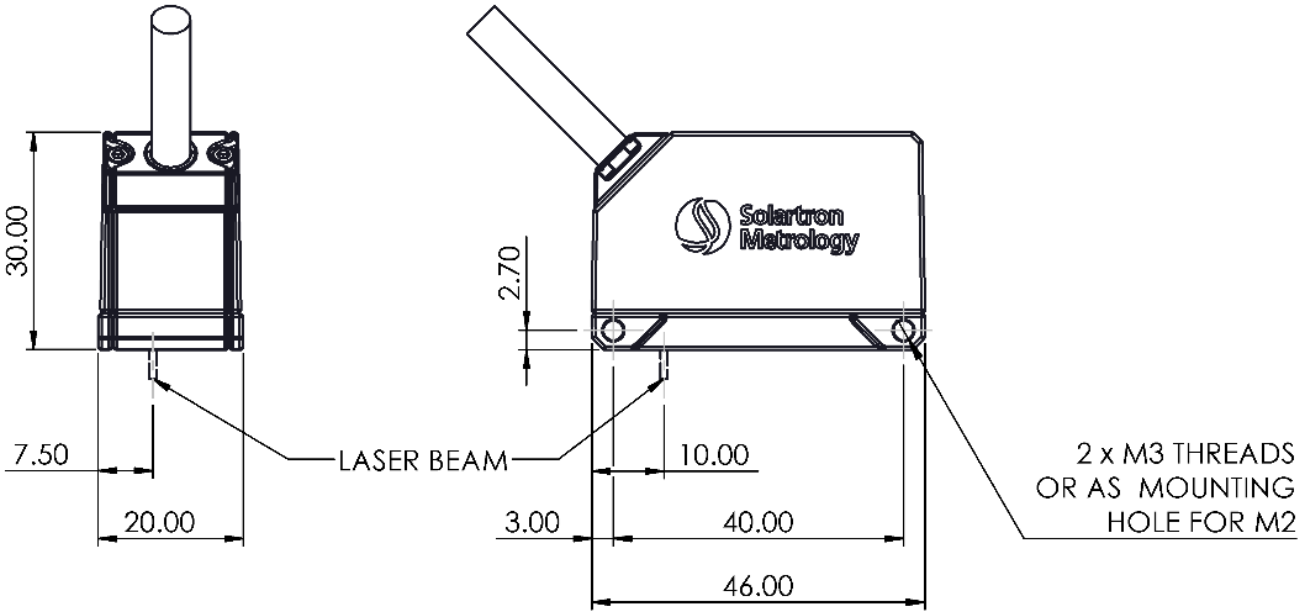
| PRODUCT | | LT1/25/25/R | LT2/20/10/R |
|---|---|---|---|
| **MEASUREMENT RANGE** | | | |
| SMR (Start of Measuring Range) | mm | 25 | 10 |
| MMR (Middle of Measuring Range) | mm | 37.5 | 25 |
| EMR (End of Measuring Range) | mm | 50 | 30 |
| PSS (Position for smallest spot) | mm | 31 | 25 |
| **MEASUREMENT PERFORMANCE** | | | |
| Accuracy | ±µm | 12 | 6 |
| Resolution | µm | 0.4 | 0.15 |
| Repeatability (@ SR )[2] | µm | 2.5 (@SR1) | 0.5 |
| **Sample Rate (SR)** [1] | | | |
| SR 1 | kHz | 1 | 4 |
| SR 2 | kHz | 0.5 | 2 |
| SR 3 | kHz | 0.25 | 1 |
| SR 4 | kHz | N/A | 0.5 |
| SR 5 | kHz | N/A | 0.25 |
| SR 6 | kHz | N/A | N/A |
| SR 7 | kHz | N/A | N/A |
| **OPTICAL PARAMETERS** | | | |
| Light Source | nm | 670 (red) | 670 (red) |
| Class | | Class 2 in accordance with DIN EN 60825-1: 2015-07 | |
| Power | mW | 0.2 | 0.2 |
| Laser Spot Size (x,y) | | | |
| SMR | mm | 0.100,0.140 | 0.140,0.720 |
| MMR | mm | 0.120,0.130 | 0.065,0.680 |
| EMR | mm | 0.390,0.500 | 0.140,0.660 |
| PSS | mm | 0.055,0.050 | 0.065,0.680 |
| **PHYSICAL PARAMETERS** | | | |
| Weight (Laser Head ) | grams | 30 | 60 |
| Materials (Laser Head) | | Aluminium | |
| **ENVIRONMENTAL** | | | |
| Laser Head Operating Temperature | °C | 0 to +50 | |
| Laser Head Storage Temperature | °C | -20 to +70 | |
| Orbit Electronics Operating/Storage Temperature | °C | 0 to +60 | |
| Sealing (Laser Head / Electronics) | | IP65/IP43 | |
| Laser Head Shock | | 15g/6 ms | |
| Laser Head Vibration | | 20g/2-500Hz | |
| EMC (Emissions) | | EN61000-6-3 | |
| EMC | | EN61000-6-2 | |
| **ELECTRONICS INTERFACE** | | | |
| Orbit Interface Options | | USB/Ethernet/RS232 | |
| Reading Rate | | 3906 Readings/sec | |
| PLC Interface (using PIM adapter) | | Ethernet/IP, ProfiNet, Ethercat, Modbus, CC-Link | |

(1) Programmable via Orbit

(2) at Sampling Rate of 1 KHz for LT1, 2kHz for LT2

## Dimensional drawing

(Solartron pursues  policy of continuous development, specifications in this document may therefore be changed without notice, dimensions are nominal and specified in millimetres)




For 3D drawings, please contact sales.solartronmetrology@ametek.com

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