

# SCANTRON SLS

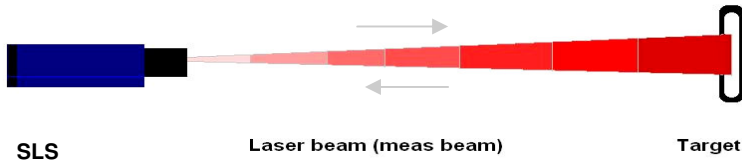
LASER DISTANCE MEASUREMENT  
FOR ONLINE APPLICATIONS

## Theory of Operation

The SLS Laser Distance Measurement Sensor is designed for mobile and stationary distance measurement in an industrial environment. The SLS works based on comparative phase measurement. To achieve this, it emits visible laser beams in different frequencies. The target being measured returns diffusely reflected light that is subsequently compared with a reference signal. Finally, a microprocessor uses the recorded phase shift to calculate a required distance with mm accuracy.

The sensor SLS distinguishes itself through high precision as well as independence of the surface of the measured object. The red, well visible laser beam allows a simple alignment.

## Distance Measuring Principle



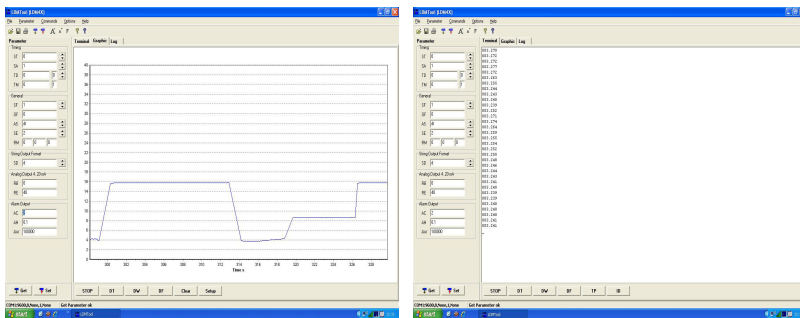
## Applications

- Supervision of crane and conveyors
- Distance and position measurement
- Supervision of security-relevant parts
- Supervision of walking beam systems / stroke length measurement / position of lifts
- Position control
- Diameter measurement of coils



## Characteristics

- millimetre precise measurement at various surfaces
- long range reflector-less distance measurement, with additional reflectors<sup>1</sup> mounted onto target for objects over 100m
- high availability under in the high temperature area with high precision and large supply voltage range 10V - 30V DC
- laser class 2
- simple alignment with a visible laser
- bi-directional data-interface, switching and analogue output
- simple setup for parameter with a PC or laptop
- measured values are displayed in meters, decimetre, centimetre, feet, inch... and different resolutions due to free scaling
- stable and simple to installing housing with protection IP 65
- Profibus DP via UNIGATE Gateway



SLS Graph Screen View

SLS Live Data Screen View



Scantron Industrial Products Ltd

Monarch Centre Venture Way Taunton Somerset England TA2 8DE

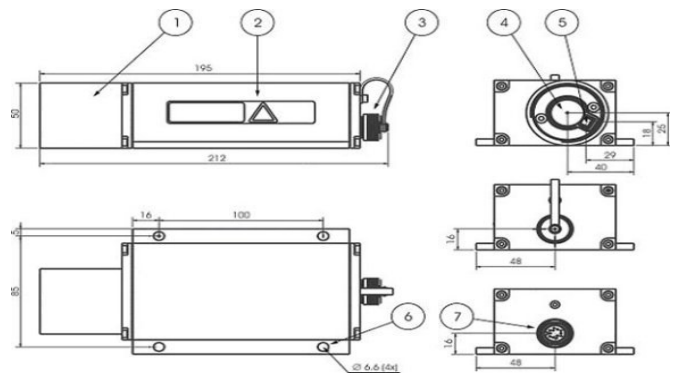
Tel +44 (0) 1823 333343 Fax +44 (0) 1823 333684

E-Mail scantron@scantron-net.co.uk Web www.scantronltd.co.uk

## Technical Data

Measuring range	0.2 m up to 50 m with natural surfaces, more than 100 m achievable, depending on target reflectance
Measuring accuracy	± 2 mm under defined measuring conditions <sup>*3</sup> ; else ± 3 mm (+15 °C up to +30 °C), ± 5 mm (-10 °C up to +50 °C)
Resolution	0.1 mm, user scalable
Reproducibility	0.5 mm
Measuring time	0.16 up to 6 s programmable or auto in Mode DT 0.1 s in Mode DW on white surface 20 ms in Mode DX on white surface (only LDM42A)
Laser Class	LK2 under DIN EN 60825-1:2001-11 (<1 mW, visible red)
Laser divergence	0.6 mrd
Operating temperature	-10 °C up to +50 °C
Storage temperature	-40 °C up to +70 °C
Supply voltage	10 V up to 30 V DC
Power consumption	approx. 1.5 W
Interfaces	RS 232/RS 422; 2400, 4800, 9600, 19200, 38400 Baud, ASCII, format 8N1; programmable mode, scaling, measure time; output of measure values, internal temperature and error codes
Digital switching output	"high-side switch", programmable switching threshold and hysteresis, max. load of 0.5 A
Analogue output	4 mA to 20 mA current output; programmable distance range limits, load resistance < 500 Ohm
Enclosure	Aluminium
Dimensions	approx. 212 x 96 x 50 (L x W x H) in mm
Weight	approx. 850 g
Protection	IP 65
Shock stability	10 g / 6 ms (DIN ISO 9022-3-31-01-1)
Mounting	100 x 85 in mm, 4 x M6 holes
Scope of delivery	Sensor, 2 m cable one side open, User Manual, Test version of SLS Tool

## System Overview



- (1) Equalizer tube at front cover
- (2) Casing
- (3) Protective Cap for flange-mount connector
- (4) Receiver optics
- (5) Sender optics
- (6) Mechanical mounting holes
- (7) 12-pole M18 flange-mount connector