

SC-LD500

High-Performance
Laser Positioning Sensor



- High Absolute Accuracy
- High Precision
- High Refresh Rate
- High Reliability
- Easy to Setup
- Ambient Light Immunity
- CANopen, RS485, SSI, PROFINET

PRODUCT INTRODUCTION



Basic Principle

Automate Matrix's SC-LD500 series high-performance Laser Positioning Sensor is based on the dToF technology.



Technical Specifications

Up to 200m, with 500Hz refresh rate & 1mm accuracy.



Application Scenarios

SC-LD500 is widely used in industrial automation, battery swapping stations, logistics industry, such as high-speed elevators, stackers, and palletizers.

SUITABLE MODELS

Product Model	Measurement Range(m)	Repeatability (mm)	Communication Interface	Operating Temperature
SC-LD501	20m/50m/100m/200m	±1mm	RS485	-10°C to 55°C
SC-LD501 W	20m/50m/100m/200m	±1mm	RS485	-40°C to 75°C
SC-LD503	20m/50m/100m/200m	±1mm	SSI	-10°C to 55°C
SC-LD503 W	20m/50m/100m/200m	±1mm	SSI	-40°C to 75°C
SC-LD504	20m/50m/100m/200m	±1mm	PROFINET	-10°C to 55°C
SC-LD504 W	20m/50m/100m/200m	±1mm	PROFINET	-40°C to 75°C
SC-LD5012	20m/50m/100m/200m	±1mm	CANopen + RS485	-10°C to 55°C
SC-LD512 W	20m/50m/100m/200m	±1mm	CANopen + RS485	-40°C to 75°C

TECHNICAL SPECIFICATIONS

Parameter		
Distance Measurement Parameters	Product Model	SC-LD500 Series
	Measurement Range	20m/50m/100m/200m
	Repeatability	±1mm
	Measuring frequency	500Hz
	Type. light spot size (distance)	≤30mm/≤60mm/≤100mm/≤180mm
	Response time	Static: 20ms; Dynamic: 5ms
	Resolution	0.1mm/1mm Adjustable
	Temperature drift	≤0.1mm/K
	Moving speed	≤15m/s
	Setup time	6s
Optical Parameters	Emitter	Laser, Infrared
	Wavelength	905nm + 650nm
Electrical Parameters	Operating voltage	18V - 30V DC
	Operating current	≤120mA/24V DC
RS485 Interface Parameters	Baud rate (bit/s)	9600/19200/38400/57600/115200
	Data bits	8
	Parity bit	None
	Stop bits	1
CANopen Interface Parameters	Baud rate (kbps)	20/50/57.143/100/125/250/500/1000
SSI Interfaces Parameters	Clock Frequency	80kHz - 500kHz
PROFINET Interface Parameters	Transmission Rate/Mode	100Mbps/Full-Duplex
	Maximum Cable Length	100m
Mechanical Parameters	Dimensions	106.5 x 9 x 102.9mm
	Housing material	Aluminum alloy
	Lens	Glass
	Weight	Approximately 850g
	IP rating	IP55
Environmental Parameters	Ambient light immunity	Sunlight: 100kLux
	Operating Temperature	-10°C to 55°C; W: -40°C to 75°C
	Storage Temperature	-40°C to 85°C
Product Certification	CE certification	IEC 61010-1:2010, IEC 61010-1:2010/AMD1:2016 EN 61010-1:2010, EN 61010-1:2010/A1:2019
	Laser safety level	2(EN60825:2014)