

ELS-Series

Laser Distance Sensor

— Product Selection Guide



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ELS1-Series Laser Distance Sensor



— Product Introduction

ELEsenson laser distance sensor is a high-precision non-contact measuring instrument integrating laser technology and digital display. It is suitable for various application scenarios requiring accurate distance measurement. Widely adopted in industrial automation, liquid-level monitoring, logistics, robotics and other fields. Featuring high accuracy, long measuring range and fast response, it helps improve production efficiency, guarantee product quality and optimize workflow.

— Features

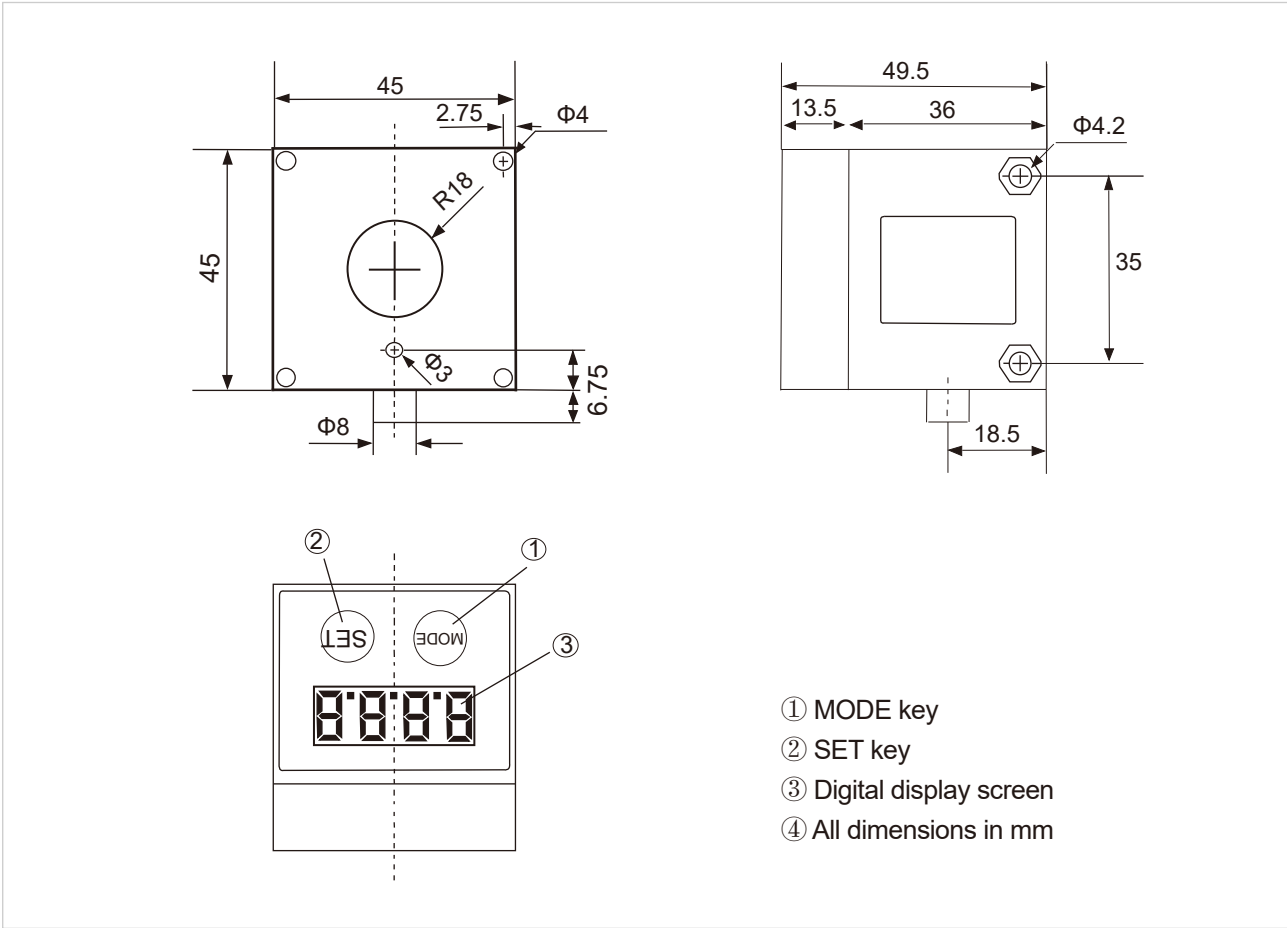
- Waterproof connector, IP65 protection degree
- Red-laser alignment for easy installation
- Three output interfaces supported: Modbus-RTU, 4-20 mA and switching output

— Specifications

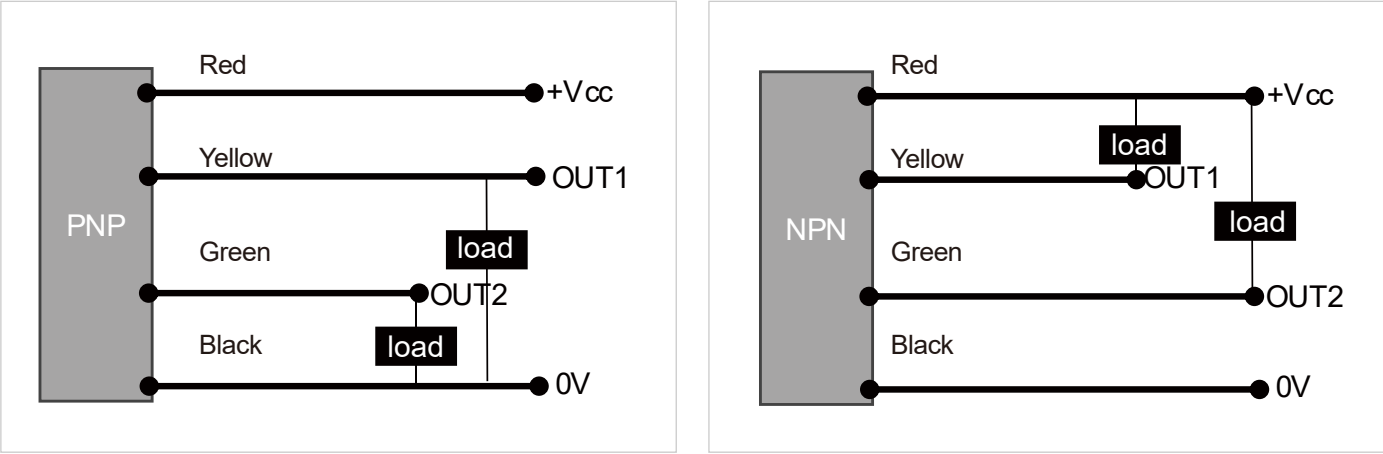
Item	Specifications
Performance Parameters	
Measuring Range	Max. measuring distance: 22 m
	15 m @ 160 kLux strong ambient light
	20 m @ dark target with 10% reflectivity
Measuring Frequency	1~1000 Hz (100 Hz by default)
Repeatability	±8.0mm @50~2000mm
	±20.0mm @2000~6000mm
	±30.0mm @6000~20000mm
Absolute Accuracy	±20.0 mm @ 200~2000 mm; large error within 20-200 mm near-blind zone
	±30.0mm @2000~6000mm
	<1% @6000~20000mm
Multi-target Detection	Dual-peak detection
Temperature Compensation	Built-in
Reflectivity Calibration	Built-in; deviation < 5 mm for targets of different colors
Blind Zone	0.03m
Light Source	
Measuring Laser	905nm, Class 1
Field of View (FOV)	<2°
Spot Size	Φ3.5cm@1m; Φ11.5cm@5m
	Φ23cm@10m; Φ50cm@20m
Alignment Laser	635nm, Class 2
Operating Environment	
Operating Temperature	-20~50℃
Storage Temperature	-40~85℃
Enclosure Protection Degree	IP65
Electrical Parameters	
Supply Voltage	DC+9~35V
Operating Current	107 mA @12 V (alignment laser ON)
	103 mA @12 V (alignment laser OFF)
Reverse-polarity Protection	Supported
Electrical Isolation	Supported
Service Life	≥ 50000 hours

Output Interface	
Output Interface	2-channel PNP (NO/NC), 2-channel NPN (NO/NC), RS485-Modbus (4...20mA) , UART
Switching output max. load current	100mA
Analog output max. load impedance	250 Ω
Display & Keys	
Digital tube digits	4-digit
Key Functions	Switching threshold adjustment; alignment laser on/off; analog range adjustment
Mechanical Parameters	
Weight	73g ±3g (Potting compound tolerance)
Enclosure Material	ABS
Overall Dimensions	45×45×49.5 mm

— Dimension Drawing



— Wiring Diagram



Note: Max. load current for OUT1 and OUT2: 100 mA

ELS2-Series Laser Distance Sensor



— Product Introduction

ELEsenson high-precision laser distance module delivers high measuring accuracy and fast measurement rate with simple installation and operation. It is widely used in household measurement, industrial control and other industries.

— Features

- Compact size & light weight
- Long measuring distance up to 100 m
- High accuracy up to 1 mm
- Wide operating temperature: -30 ~ +60 ℃

— Wiring Diagram

RS485 Output Pin Definition

Wire Color	Red	Black	Yellow	White
Definition	Power Positive	Power GND / Signal GND	485 B	485 A
Remark	DC+24V			

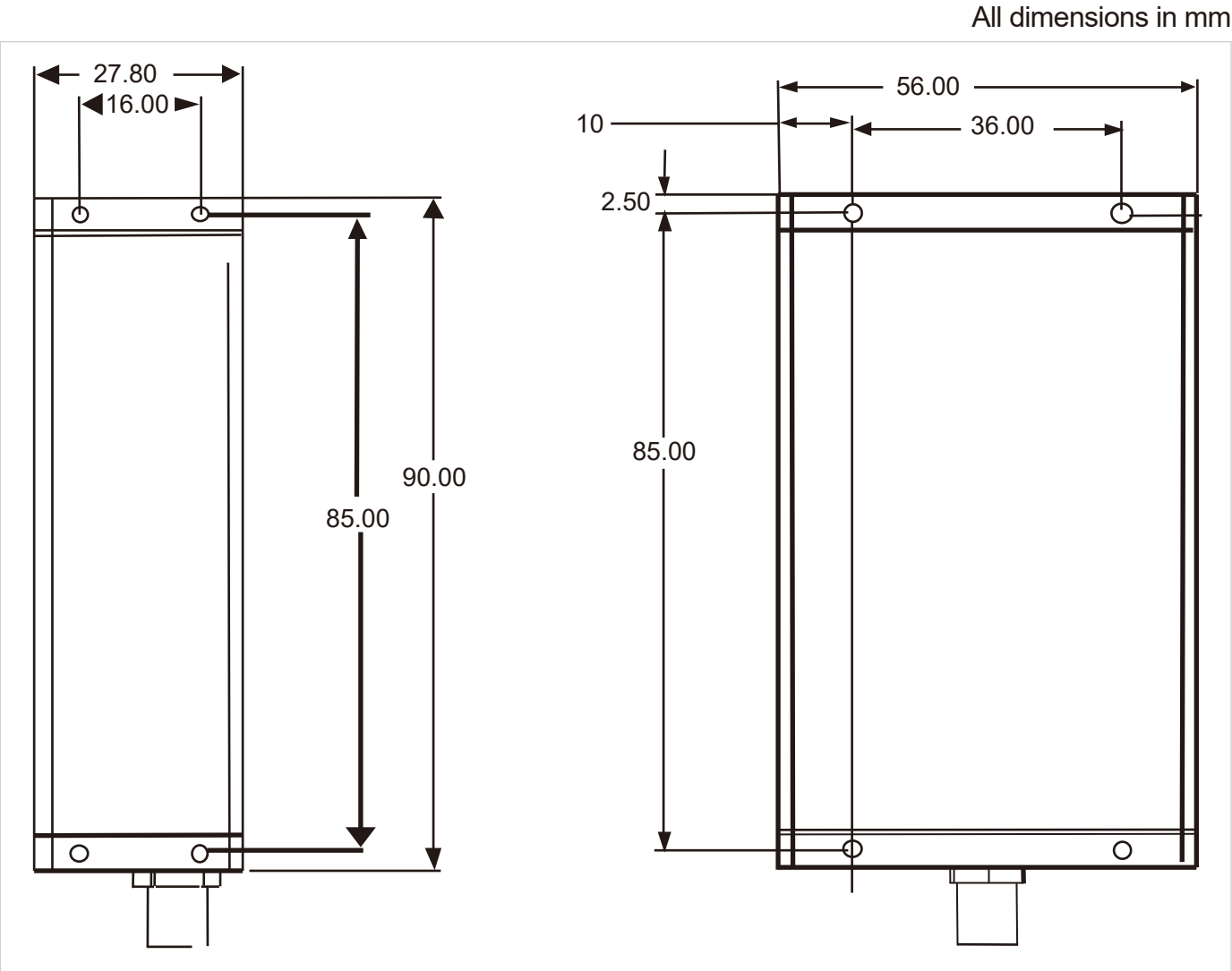
4-20 mA Output Pin Definition

Wire Color	Red	Black	Yellow	White
Definition	Power Positive	Power GND / Signal GND	Current +	Current -
Remark	DC+24V			

— Specifications

Item	Specifications
Indoor Measuring Range	0.03-100m
Outdoor Measuring Range	0.03-30m
Output Refresh Rate	2Hz
Absolute Accuracy	±2mm
Resolution	1mm
Blind Zone	3cm
Light Source	635 nm, < 1 mW red laser, Class 2 laser
Communication Interfaces	4~20mA, RS485
Operating Temperature	-30 ℃ ~ +60 ℃ (Wide-temp version)
Supply Voltage	DC+24V
Operating Current	20mA
Dimensions	28 × 56 × 90 mm

— Dimension Drawing



— Application Fields



Industrial Automation & Robotics



Automotive Manufacturing



Logistics & Warehousing



Intelligent Traffic & Safety Monitoring

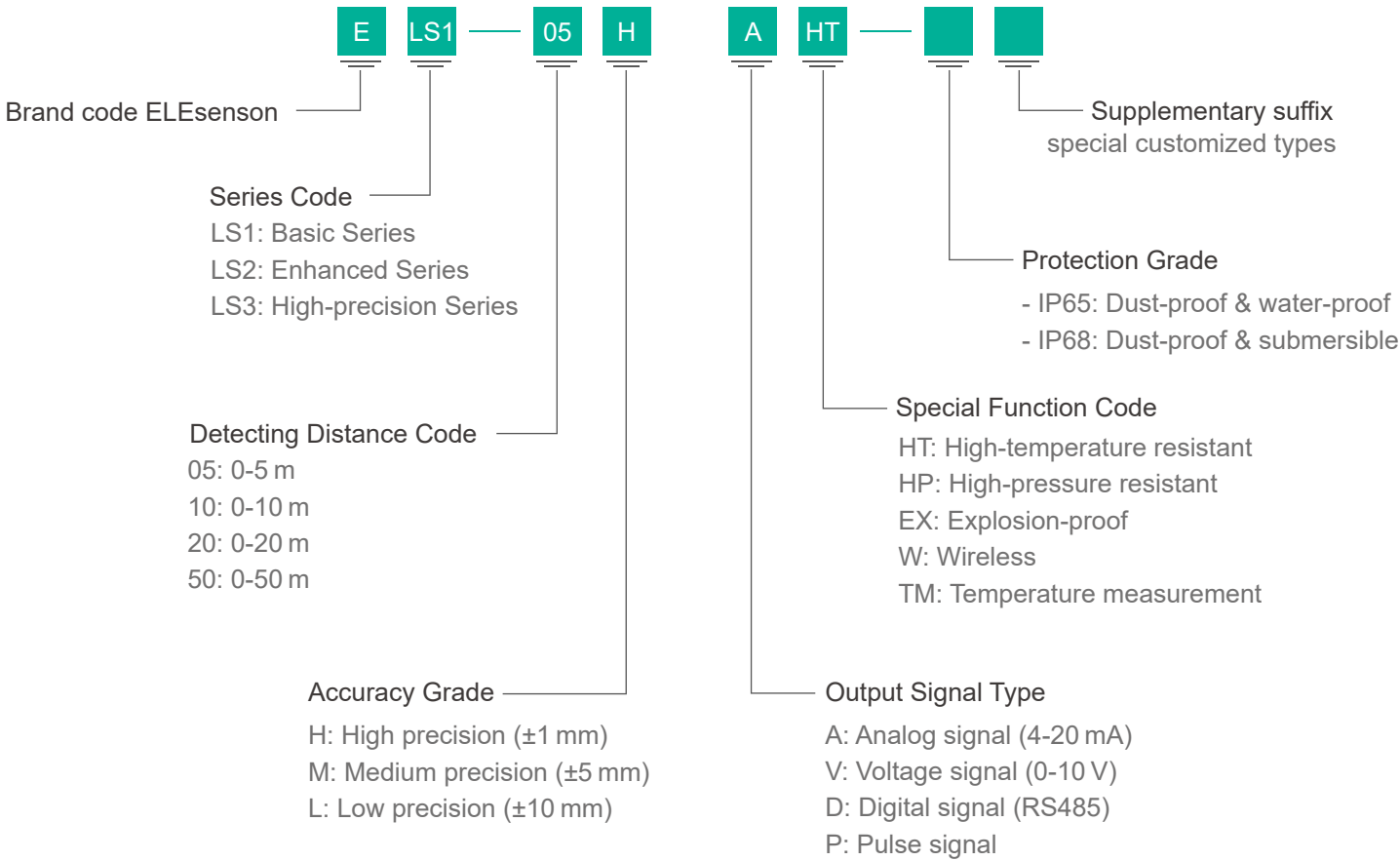


Environmental Monitoring



Construction Survey & Engineering Monitoring

— Product Selection Table



APPLICATIONS CASES



COMPANY PROFILE

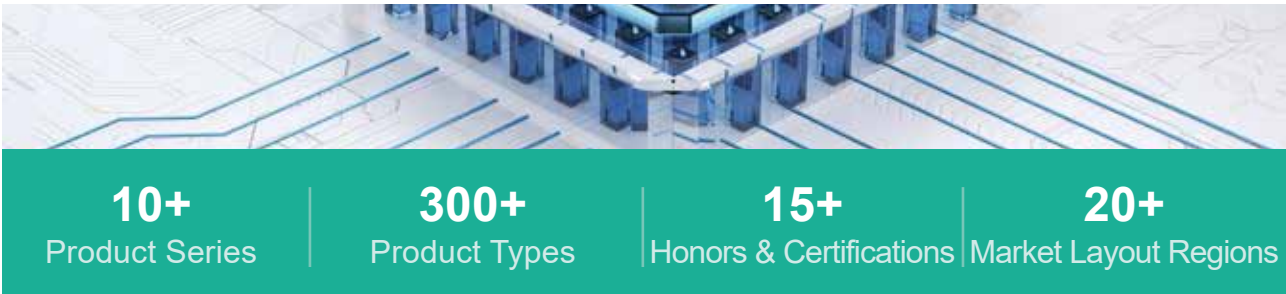


ELEsenson focuses on R&D, manufacturing and sales of sensors. We have a high-caliber, innovative technical team. Pursuing continuous technical improvement, we deliver high-performance, reliable sensor products for customers.

Our broad product portfolio covers multiple industries including industrial automation, smart home and automotive electronics. Our products are well-received for precise measurement, stable performance and outstanding durability.

During production, strict quality-control procedures guarantee premium quality for every unit leaving our factory. We maintain close cooperation with customers, deeply understanding requirements and delivering customized solutions for special-scenario demands.

ELEsenson regards innovation as core driving force. Continuous investment in R&D and product upgrades. With professional teams, premium products and thoughtful service, Zhejiang ELEsenson Sensors has built solid reputation in the industry, contributing technical strength to the advancement of multiple sectors.



■ Corporate Culture

— Vision

Uphold conviction, reach new heights of sensor-technology development.
Build a globally-leading sensor enterprise and lead industry progress through technological innovation.

— Mission

Drive development through innovation, win trust by quality.
Supply precise, stable, durable and reliable sensor products plus customized solutions for industrial automation, rail transit, automotive electronics and other industries.

— Core Values

Customer-Oriented, Integrity-Based, Innovation-Driven, Quality-First.
We are customer-demand oriented, operate with integrity, pursue innovation and strive for superior product & service quality.

CORE ADVANTAGES

- 

Professional & Efficient Team

Experienced and skilled personnel providing high-quality service & technical support.
- 

Strong R&D Capability

Advanced R&D equipment & specialist team to develop innovative, competitive products.
- 

Complete After-Sales Support System

Timely response to customer requests, comprehensive technical support & solutions to maximize customer satisfaction.



HONORS AND QUALIFICATIONS



Brief Product Catalog | English Version | Issue 1, 2025

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