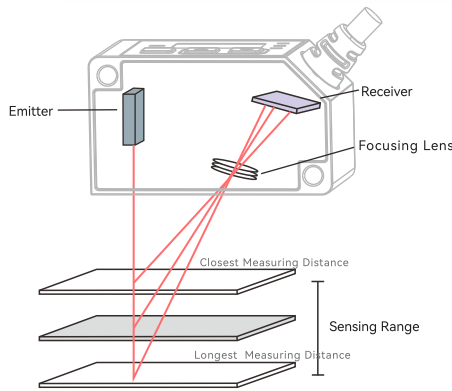


### Meeting the Detection Needs for Long Distance and Large Range

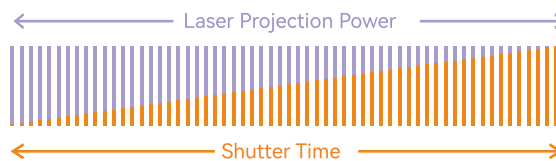
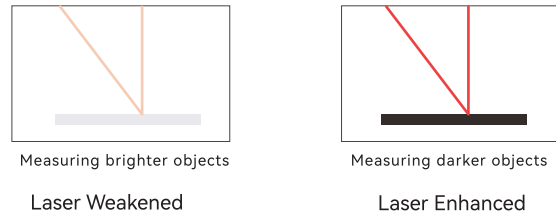


CMOS sensor element  
Highly accurate detection achieved by triangulation principle

By triangulation principle, the incoming light port on the CMOS of the sensor receiver moves as the object position changes. And the change of objects can be checked by detecting the incoming light position.

### Automatic Exposure Adjustment

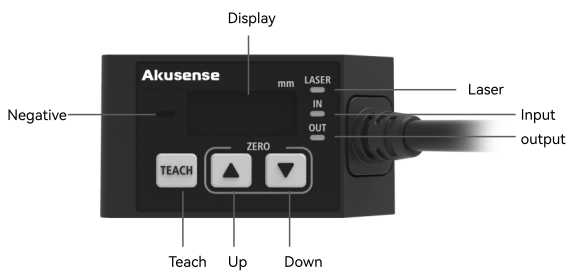
The amount of energy received can be automatically adjusted according to different applications; Detection remains stable even the color or material of the workpiece changes.



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement**
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Code Readers
- Vibration
- Temperature
- Accessories

#### Guidance

- Displacement**
- Triangulation
- Linear measurement
- Magnetic displacement
- LIDAR Scanner
- Color confocal

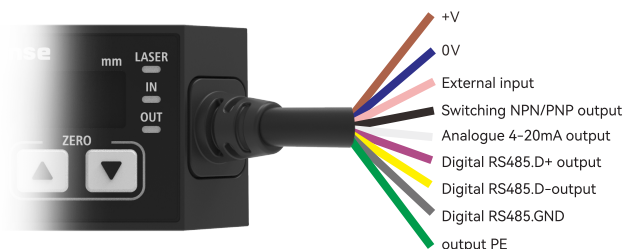


Intuitive digit display on the panel, and button function makes commissioning easy.  
Equipped with display and function buttons within a mini space;

The opening/closing of the laser, external trigger signal and control output signal status can be intuitively presented; most function settings can be made directly via the sensor panel.

It includes parameter item setting, function item setting and threshold setting.

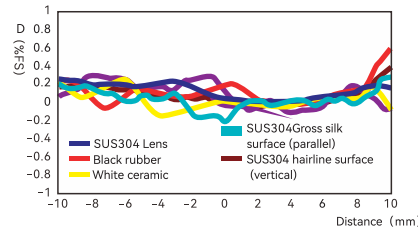
Integrated output methods; Switching, analogue and digital outputs all in one.



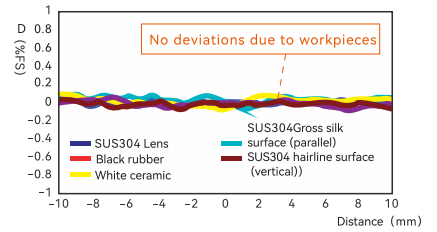
# Selection Guide

## Detection remains stable even the workpiece moves

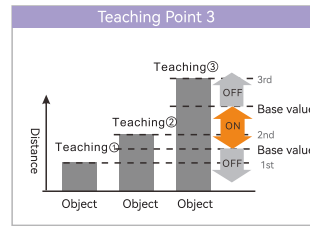
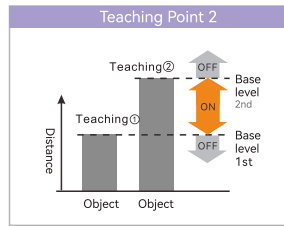
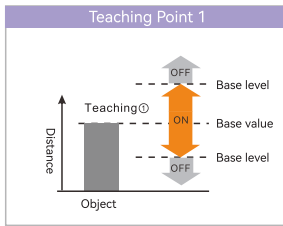
For workpieces with rough surfaces, a linear beam is used to average the amount of reflection. And the amount of light received is corrected at a high speed of 30us for per measurement cycle to reduce the alteration of the amount of light received caused by workpiece moving. Thus the detection remains stable even when the workpiece is displaced during the process of measurement.



Material-based linear properties of previous products



Material-based linear properties of MLD21



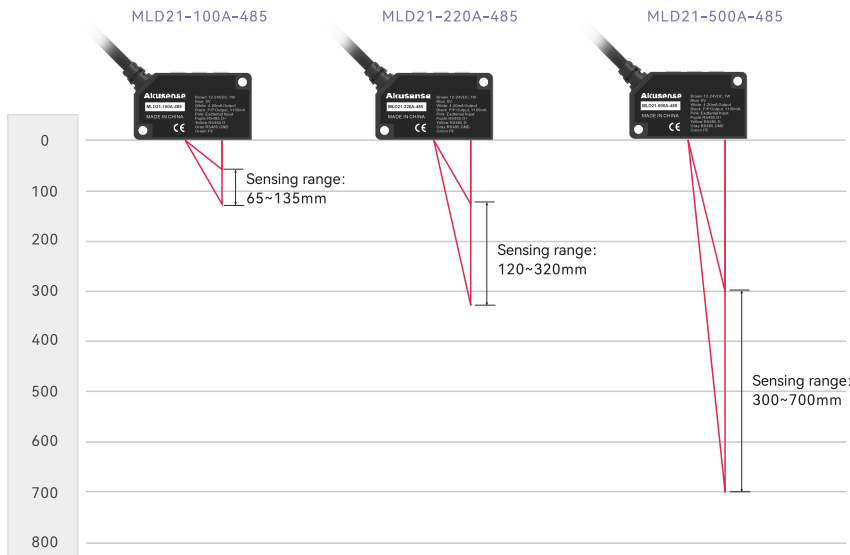
## Built-in rich detection modes for greater functionality

In addition to the basic teaching settings, the following three modes have been implemented: Basic teaching mode for simple setting of the presence or absence of the object to be measured; A single-point serial comparison mode for deviations from the reference measurement surface; A two-point teaching serial comparison mode for precise range control.

## Application



## Selection table



Model	MLD21-100A-485
Repeat accuracy	70μm
Linearity	±0.1%
Base distance	100mm

Model	MLD21-220A-485
Repeat accuracy	200μm
Linearity	±0.2%
Base distance	220mm

Model	MLD21-500A-485
Repeat accuracy	(300~500mm) 300μm (500~700mm) 600μm
Linearity	(300~500mm) ±0.2% (500~700mm) ±0.3%
Base distance	500mm



Appearance

Sensing type	Diffuse reflection		
Center of sensing distance	100mm	220mm	500mm
Sensing distance	65~135mm	120~320mm	300~700mm
Spot size	136 x 110 μm	290 x 238 μm	541 x 330 μm
light source	Laser CLASS 2		
Communication interface	Digital IO/MODBUS RS-485 communication interface Support 9,600, 14400, 19200, 38400, 57600, 115200bps. (Default: 115200bps) Support format: 8,N,1、8,N,2、8,O,1、8,O,2、8,E,1、8,E,2		
Input voltage	12~24VDC ± 10% , 1W		
Linearity	±0.1%	±0.2%	(300~500mm) ±0.2% (500~700mm) ±0.3%
Repeat accuracy	70 μm	200 μm	(300~500mm)300 μm (500~700mm)600 μm
Sampling period	1.5ms/ 3ms/5ms (Default: ms)		
Analog output	Current:4~20mA(Normal)/22mA(Abnormal) ,Load impedance:≤300Ω		
Digital output	Optional function: measurement range/comparison output, Push-Pull Output , <100mA		
Digital input	Optional function:Zero reset/teaching, High-level ≥2V, Low-level ≤0.8V		
Indicator	Laser emission indicator(Blue), Digital output(Green), Digital input(Yellow)		
Circuit protection	Reverse voltage protection, output overcurrent protection, input power surge protection, output surge protection		
Degree of protection	IP67		
Ambient temperature	-10°C~+50°C		
Ambient humidity	35%~85%		
Ambient brightness	3000Lux and below		
Vibration resistance	10~55Hz double amplitude1.5mm, XYZ three directions, 2 hours each		
Insulation resistance	20 MΩ or more(500VDC)		
Pressure resistance	500 VAC 50/60 Hz 1min		
Material	Front cover: PC; Case: Aluminum alloy; Cable: PUR		
Cable	Length:2m		
Model	<b>MLD21-100A-485</b>	<b>MLD21-220A-485</b>	<b>MLD21-500A-485</b>

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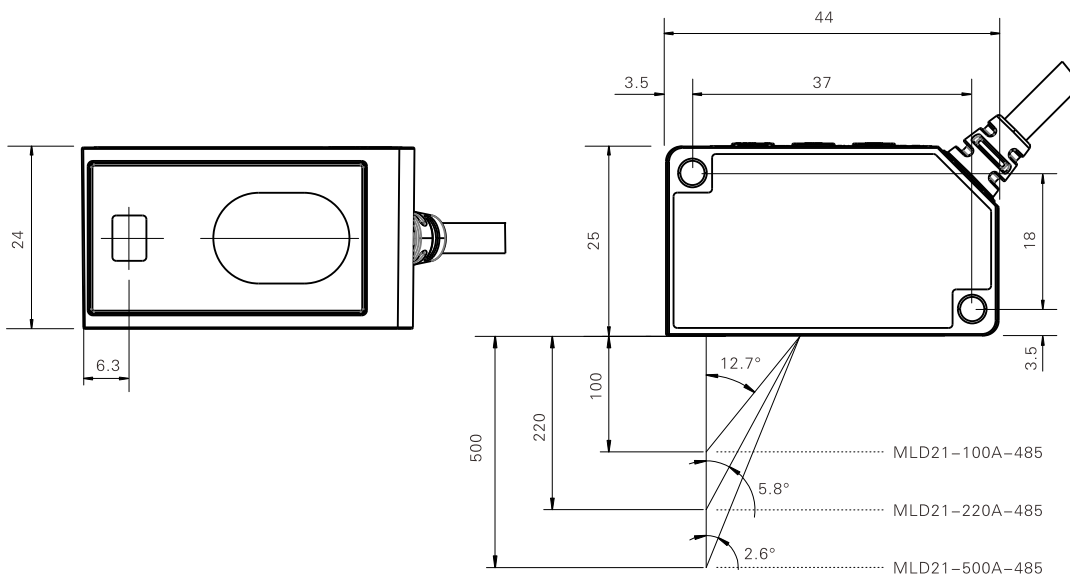
**Guidance**

**Displacement**

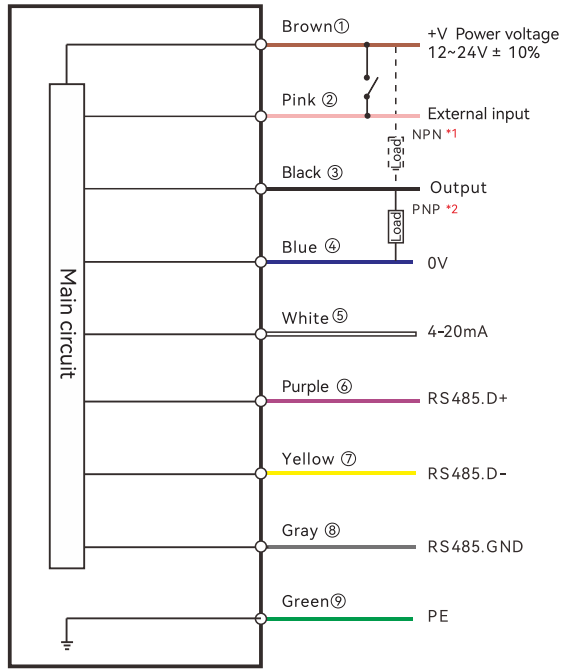
- Triangulation**
- Linear measurement
- Magnetic displacement
- LIDAR Scanner
- Color confocal

**Dimensions**

Unit: mm



Circuit diagram



Remark:

- 1.NPN output connection : Connect Black with Brown (+V)
- 2.PNP output connection: Connect Black with Blue (0V)

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