

CMOS laser sensor type laser sensors LA2-ZB series



High-definition digital display, real-time display of the distance from the sensor to the object

Push-button operation for easy and convenient setup.



True black and white isometric, completely unaffected by color

Whether the object is black, white or any other color, the actual detection distance is unaffected.



Detection in complex environments

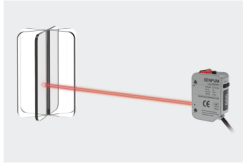
Small step height can be detected even if the target color is the same or similar to the background.



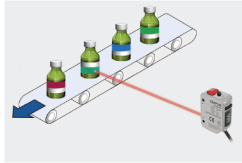
More merits

- Metal casting, excellent impact resistance
- Stable resolution of object step height with high accuracy
- It can be used to detect strongly reflective objects or metal objects
- Even light-colored objects with high reflectivity can be detected

Application



Detection is not affected by the angle



Unaffected by changes in object color



Detects whether a transparent bottle has a cap or not, regardless of size or color

Product List

Standard model

Type	Appearance	Detection distance (mm)	Spot diameter	Output type	Model
Distance based		25~100	Approx. 1*2mm at 100mm	NPN	LA2-ZB100N
		25~150		PNP	LA2-ZB100P
		25~250		NPN	LA2-ZB150N
		25~250		PNP	LA2-ZB150P
		25~300	Approx. 1*2mm at 100mm	NPN	LA2-ZB250N
		25~300		PNP	LA2-ZB250P
		25~500		NPN	LA2-ZB300N
		25~500		PNP	LA2-ZB300P
		25~600	Approx. Φ2mm at 500mm	NPN	LA2-ZB500N
		25~600		PNP	LA2-ZB500P
		25~600		NPN	LA2-ZB600N
		25~600		PNP	LA2-ZB600P

Relay type

Type	Appearance	Detection distance (mm)	Spot diameter	Output type	Model
Distance based		25~100	Approx. 1*2mm at 100mm	NPN	LA2-ZB100CAN
		25~150		PNP	LA2-ZB100CAP
		25~250		NPN	LA2-ZB150CAN
		25~250		PNP	LA2-ZB150CAP
		25~300	Approx. 1*2mm at 100mm	NPN	LA2-ZB250CAN
		25~300		PNP	LA2-ZB250CAP
		25~500		NPN	LA2-ZB300CAN
		25~500		PNP	LA2-ZB300CAP
		25~600	Approx. Φ2mm at 500mm	NPN	LA2-ZB500CAN
		25~600		PNP	LA2-ZB500CAP
		25~600		NPN	LA2-ZB600CAN
		25~600		PNP	LA2-ZB600CAP

Cable

Appearance	Connector	Cable length	Model
	Female connector	2M	OW-LAZ2000
		5M	OW-LAZ5000
		10M	OW-LAZ10M
		20M	OW-LAZ20M

Laser Sensors

LA2-ZB

LA-ZB

LA-N

LA-ZH

LA-X

LA2-S

LA3-P

LA-MR

LA-T

Fiber Optic Sensors

Photoelectric Sensors

Color Sensors

Laser Sensors

Inductive Proximity Sensors

Precision Contact Sensors

Area/Safety Light Curtain

Laser Scanners

Digital Contact Sensors

Laser Displacement Sensors

Distance Laser Sensors

Confocal Displacement Sensors

Barcode Scanners

Infrared Temperature Sensors

Digital Pressure Sensors

Gate Magnetic Sensors

Ultrasonic Displacement Sensors

Magnetic Scale

Static Eliminators



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LA2-ZB

LA-ZB

LA-N

LA-ZH

LA-X

LA2-S

LA3-P

LA-MR

LA-T

Laser Sensors

Selection guide

CMOS laser sensor type laser sensors

Specs

Standard model

Model	NPN	LA2-ZB100N	LA2-ZB150N	LA2-ZB250N	LA2-ZB300N	LA2-ZB500N	LA2-ZB600N	
	PNP	LA2-ZB100P	LA2-ZB150P	LA2-ZB250P	LA2-ZB300P	LA2-ZB500P	LA2-ZB600P	
Actual detection distance (mm)		25-100		25-150	25-250	25-300	25-500	25-600
Spot dimension		Approx.1*2mm at 100mm			Approx.1*2mm at 100mm		Approx.Φ2mm at 500mm	
Standard detection segment difference	25-50mm: 1.2mm		25-60mm: 4.5mm		25-60mm: 4.5mm			
	50-80mm: 1.8mm		60-100mm: 6mm		60-100mm: 6mm 100-200mm: 12mm			
	80-110mm: 2.4mm		100-200mm: 12mm		200-300mm: 24mm 300-380mm: 30mm			
	110-150mm: 3.6mm		200-300mm: 24mm		380-500mm: 48mm 500-600mm: 90mm			
Display resolution	25-50mm: 0.1mm		25-100mm: 0.5mm		25-100mm: 0.5mm 100-200mm: 1mm			
	50-110mm: 0.2mm		100-200mm: 1mm		200-300mm: 2mm 300-380mm: 2.5mm			
	110-150mm: 0.4mm		200-300mm: 2mm		380-500mm: 4mm 500-600mm: 5mm			
Light source	Type	Red laser(650nm)						
Laser class		Class 2 Laser Product						
Function	Indicators	4-digit 7-segment display (white),output indicator (red),RNG indicator (green) ,1spot indicator (green)						
	Timer	OFF/Turn-on delay/OFF-delay/Single trigger						
Power voltage		12 to 30VDC, including ripple 10%(p-p)						
Power consumption		550mW or less/less than 22mA at 24V, less than 42mA at 12V)						
Response time		2ms/10ms/50ms						
Control output		LA2-ZB*N: NPN/NPN open collector / LA2-ZB*P: PNP open collector The applied voltage is less than 30VDC and the control current is less than 100mA. Residual voltage: less than 2V at 100mA						
Protection circuit		Protection against reverse power connection, output surge protection, output overcurrent protection, reverse output connection						
Output type		LIGHT-ON/DARK-ON						
External input		Input time calibration: ON when 35ms or more, OFF when 35ms or more. Switchable between transmission OFF: ON for 2ms or more, OFF for 20ms or more. Short circuit current NPN: 1mA or less / PNP: 2mA or less						
Enclosure rating		IP67						
Ambient light		Incandescent: under 5000lux Daylight: under 10000lux						
Ambient temperature		When using: -10 to +50°C(no freezing) Storing: -25 to +75°C(no freezing)						
Relative humidity		35 to 85%RH (no condensation)						
Shock resistance		1000m/s ² 6 times for each of X,Y,Z axis						
Vibration resistance		10 to 55Hz double amplitude 1.5 mm X,Y,Z 2H in all directions.						
Insulation resistance		Over 20MΩ(500VDC)						
Withstand voltage		AC500V 50/60Hz 1min						
Material		Housing/Case: aluminum alloy \ Indicator cover: PC \ Lens cover: PMMA \ Button: ABSA \ Cable: PVC						
Weight		Approx.90g(cable included)						

Note: When the measurement conditions are not specified, the conditions of use are as follows: supply voltage: 24VDC; ambient temperature: 20°C; response time: 10ms; detection object: white cardboard

Relay type

Model	NPN	LA2-ZB100CAN	LA2-ZB150CAN	LA2-ZB250CAN	LA2-ZB300CAN	LA2-ZB500CAN	LA2-ZB600CAN
	PNP	LA2-ZB100CAP	LA2-ZB150CAP	LA2-ZB250CAP	LA2-ZB300CAP	LA2-ZB500CAP	LA2-ZB600CAP
Actual detection distance(mm)		25-100	25-150	25-250	25-300	25-500	25-600
Spot dimension		Approx.1*2mm at 100mm		Approx.1*2mm at 100mm		Approx.Φ2mm at 500mm	
Standard detectable deviation		25-50mm: 1.2mm		25-60mm: 4.5mm		25-60mm: 4.5mm	
		50-80mm: 1.8mm		60-100mm: 6mm		60-100mm: 6mm	100-200mm: 12mm
		80-110mm: 2.4mm		100-200mm: 12mm		200-300mm: 24mm	300-380mm: 30mm
		110-150mm: 3.6mm		200-300mm: 24mm		380-500mm: 48mm	500-600mm: 90mm
Display resolution		25-50mm: 0.1mm		25-100mm: 0.5mm		25-100mm: 0.5mm	100-200mm: 1mm
		50-110mm: 0.2mm		100-200mm: 1mm		200-300mm: 2mm	300-380mm: 2.5mm
		110-150mm: 0.4mm		200-300mm: 2mm		380-500mm: 4mm	500-600mm: 5mm
Light source	Type	Red laser(650nm)					
	Laser class	Class 2 Laser Product					
Function	Indicators	4-digit 7-segment display(white),output indicator (red),RNG indicator(green),1spot indicator(green)					
	Timer	OFF/Turn-on delay/OFF-delay/Single trigger					
Power voltage		12 to 30VDC, including ripple 10%(p-p)					
Power consumption		Under 550mW(less than 22mA at 24V, less than 42mA at 12V)					
Response time		2ms/10ms/50ms					
Control output		LA2-ZB*N: NPN open collector output / LA2-ZB*P: PNP open collector The applied voltage is less than 30VDC and the control current is less than 100mA. Residual voltage: less than 2V at 100mA					
Protection circuit		Protection against reverse power connection,output surge protection,output overcurrent protection,reverse output connection					
Output type		LIGHT-ON/DARK-ON					
External input		Input time calibration: ON when 35ms or more, OFF when 35ms or more. Switchable between transmission OFF: ON for 2ms or more, OFF for 20ms or more. Short circuit current NPN: 1mA or less / PNP: 2mA or less					
Enclosure rating		IP67					
Ambient light		Incandescent: under 5000lux Daylight: under 10000lux					
Ambient temperature		When using: -10 to +50°(no freezing) Storing: -25 to +75°(no freezing)					
Relative humidity		35 to 85%RH(no condensation)					
Shock resistance		1000ms ² 6 times for each of X,Y,Z axis					
Vibration resistance		10 to 55Hz double amplitude 1.5 mm X,Y,Z 2H in all directions.					
Insulation resistance		Over 20MΩ(500VDC)					
Withstand voltage		AC500V 50/60Hz 1min					
Material		Housing/Case: aluminum alloy \ Indicator cover: PC \ Lens cover: PMMA \ Button: ABSA \ Cable: PVC					
Weight		Approx.90g(cable included)					

Note: When the measurement conditions are not specified, the conditions of use are as follows: supply voltage: 24VDC; ambient temperature: 20°C; response time: 10ms; detection object: white cardboard



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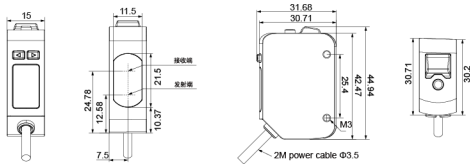
Ask senpum: +86-755-83330055

Dimensional Specifications

Unit: mm

Standard model

LA2-ZB100N/P LA2-ZB250N/P LA2-ZB500N/P
LA2-ZB150N/P LA2-ZB300N/P LA2-ZB600N/P



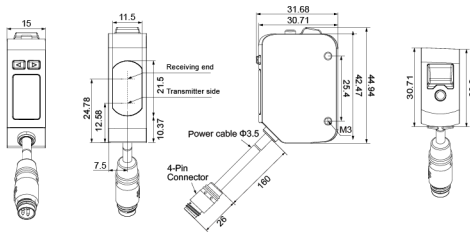
Bracket

N-100



Relay type

LA2-ZB100CAN/P LA2-ZB250CAN/P LA2-ZB500CAN/P
LA2-ZB150CAN/P LA2-ZB300CAN/P LA2-ZB600CAN/P



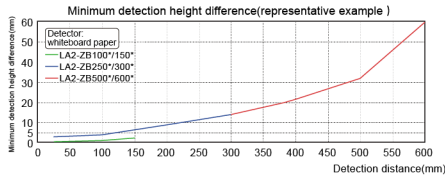
Cable

OW-LAZ2000 / OW-LAZ5000
OW-LAZ10M / OW-LAZ20M



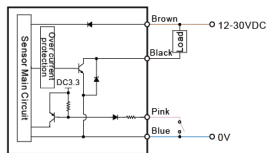
Cable	L(cable length)
OW-LAZ2000	2m
OW-LAZ5000	5m
OW-LAZ10M	10m
OW-LAZ20M	20m

Characteristic Graph

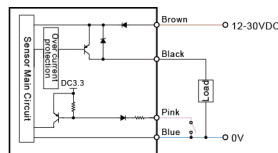


Input/Output Circuit Diagrams

Output NPN



Output PNP



Connector schematic



Wiring diagram

	Core color	Function
1	Brown	Power positive
2	Pink	NPN Input
3	Blue	Power negative
4	Black	NPN/PNP Output

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Color Sensors

Laser Sensors

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Magnetic Scale

Static Eliminators



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