MOTEE
摩特智能

PROVIDE ACCURATE AND RELIABLE PERCEPTION FOR AUTOMATION

ACHIEVE THE FIRST BRAND OF AUTOMATION SENSORS

MOTEE

2025V1

MOTEE
摩特智能

MOTEE SENSOR
Comprehensive content

Industrial automation sensor manufacturer

2025V1.0

MOTEE

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MOTEE INTELLIGENCE

About us

Desire

Innovation, concentration, excellent quality

Mission

Providing accurate and reliable sensing for automation

Sense of worth

Achievement of automation sensor national brand

MOTEE Intelligent Control Co.,Ltd
Focusing on the core technology of industrial automation research, development and application, the development of various types of sensors with independent intellectual property rights, it is a high-tech enterprise integrating R & D, production and sales, and is an outstanding professional sensor manufacturer in China.
MOTEE has always adhered to the"quality is the basis of being¡– business philosophy, strive for excellence, seek common development of enterprises and the industry, and strive to build the MOTEE brand into the world's leading enterprises in the field of intelligent sensing and control.

STRENGTH
CASTMAGNIFICENTLY

SUCCESSFUL CASES

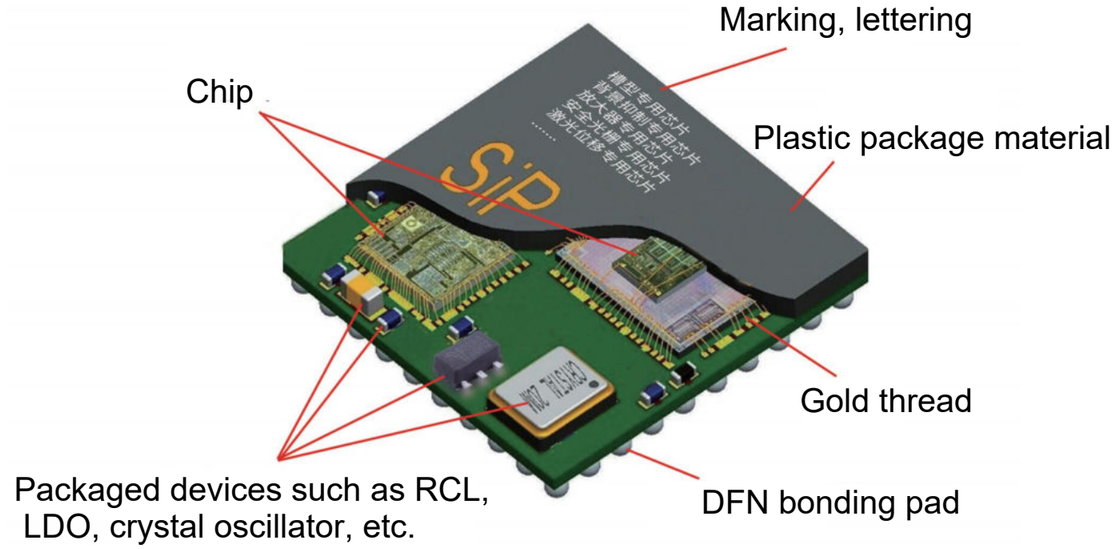
ENTERPRISE OVERVIEW

MOTEE

As a leader in the field of intelligent sensors for industrial automation, MOTEE Intelligent Control Co., Ltd. is a comprehensive high-tech enterprise integrating high-end chip design, advanced semiconductor package, as well as in-depth R & D of microelectronic integrated circuits, precision production and global sales. We provide core components for China's domestic high-end intelligent equipment manufacturing industry, and are one of the most influential sensor brand manufacturers in the industry.

Company Profile

The company focuses on the full range of industrial automation sensor R & D, high-efficiency production and customization, to build up a complete photoelectric sensors, the whole technology chain of independent R & D system, holding dozens of innovative R & D patents and software copyrights, highlighting our deep heritage in technological innovation. MOTEE's R & D team brings together a group of experts in the automation industry for nearly 20 years experience in the sensor application, ¡ chip + algorithms + hardware circuit design¡– three-dimensional body model for the sensor R & D and innovation, and unswervingly committed to the sensor application of the overall localization process. After years of technical accumulation and market sharpening, MOTEE has established a significant technological leadership in the field of sensors. and established the chip package department, SMT patching department. Mold department. Injection molding department, Wiring material department and other supply chain self-production.Relying on the strong strength of all independent R & D, as well as the vertical integration of the whole industry chain materials, MOTEE can quickly respond to market changes, to ensure that our products are always synchronized with the market demand, to provide customers with ultra-high cost-effective products, and lead the industry forward.



Independent R & D special chip for photoelectric switch

Amplifier emitter-receiver module Logic processing Power supply management
highly integrated Stable and reliable

National Invention Patent No.: CN110322649B

Innovative

Ultra-small construction enables equipment miniaturization Core chip technology, single-sided PCBA

Stable

Low drift, high soldering yield, high reliability, high service life
Only three components in the peripheral circuit, high product homogeneity

SMIC 65nm process
Integration of all functional modules on a single chip

Triple protection
Output short circuit protection, power reverse connection protection, current overload protection

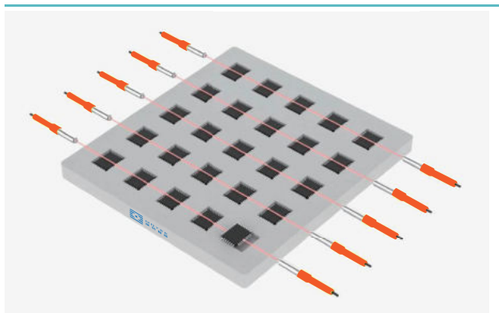
Current
Less than 8mA, low chip heat generation

Operating voltage
Extremely wide range of DC 5-50V

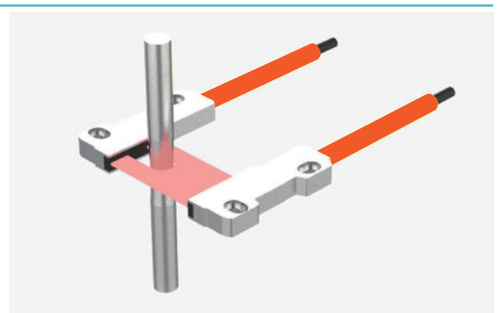
Frequency
5KHz response with residual voltage less than 0.8V @ 100mA load curren

IP65 working condition
-25~+55¡ , 5%~80%RH relative humidity can be normal

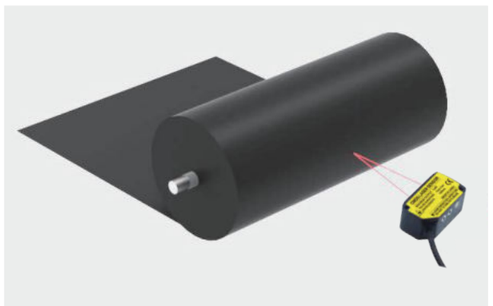
As the first domestic industrial automation sensor brand chip package manufacturer, we have SIP (System In Package) system-level chip packaging capabilities and COB (Chip On Board) crystal national-level packaging capabilities, to create various types of sensors special function chip, highly integrated power management, MCU logic control, high-precision operational amplifiers, emitter-receiver photosensitive devices, large load transistor output, short-circuit overload current protection and other blocks can greatly improve the performance of various limits of the sensor and the product homogeneity



Detection of chip leveling by means of through-beam optical fiber
Tiny sleeve type optical fiber detects warping of tiny chips. A narrow light beam projected from an ultrafine optical fiber core can identify subtle changes.

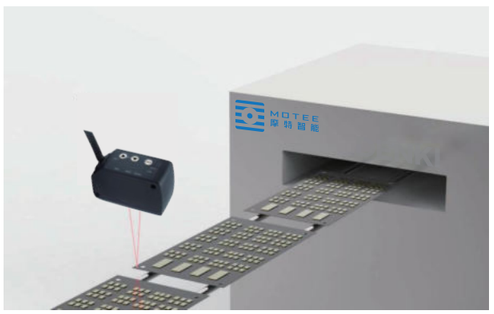


Analog optical fiber amplifiers for measuring dimensions and correction
Check outer diameter of materials using area optical fiber

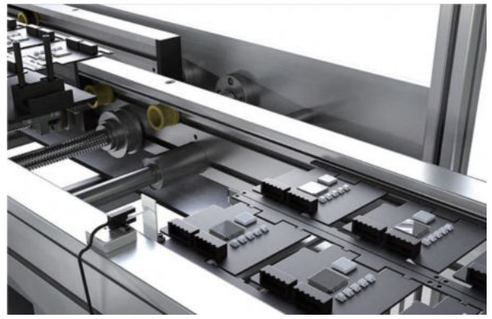


Lithium-ion equipment coating detection
High-precision displacement detection, without contact, allows real-time detection of the height of the remaining film.

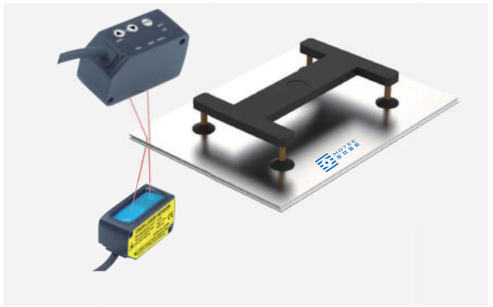
Guarding door device for use in connection with the safety of persons or machines
MT-GS51 series security door locks are based on magnetically encoded induction technology with monitored stainless steel latch structure



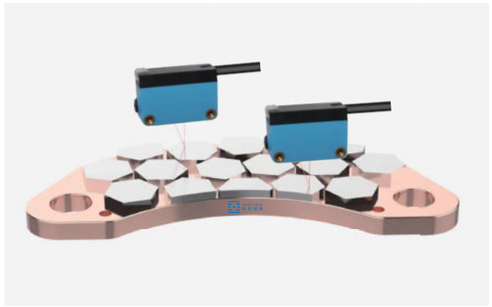
Semiconductor PCB detection
Laser displacement sensor for precise detection of the warping range of the substrate.



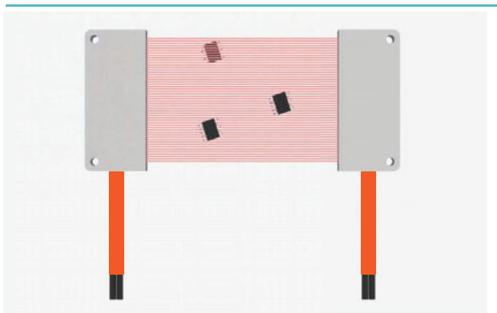
Detects the position of transport trays on PCB loader
Micro photoelectric sensors are used to detect the position of transport trays on PCB loader



Detects double-layer metal plate
Detects double-layer metal plates during transportation and measures 12 points simultaneously at high speed and with precision

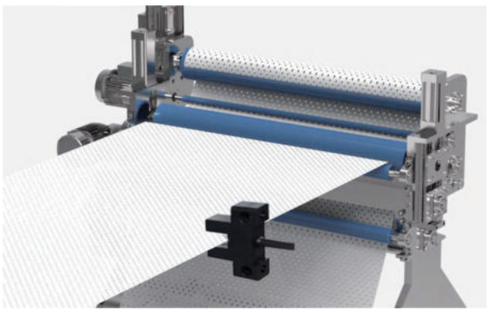


Background suppression detects the presence of objects
Electronic product assembly device detection, shielding high reflective, high brightness background.

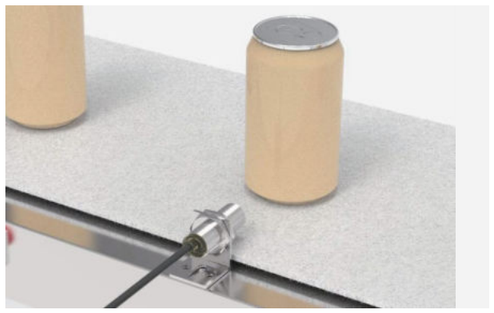


Area optical fiber counting of tiny devices
Tiny parts can be detected in a wide visual field with a wide light beam.

High-speed response of 3KHz for origin positioning and limit postition
Detect the holes in the rotary plate, read the number of revolutions and the speed.



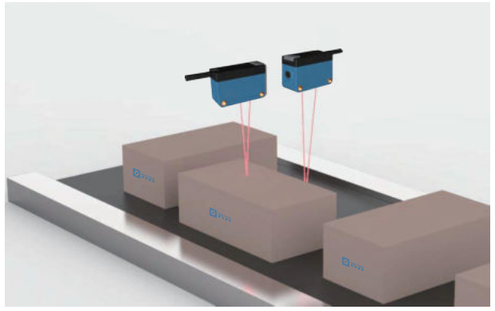
Detects breakage of cloth, paper and film
Detects printed paper or textile fabric outfeed.



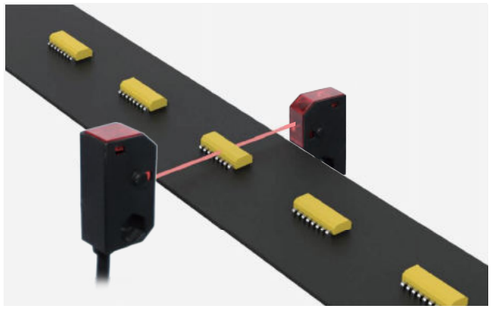
Detects cans or counting on the assembly line
Capacitive proximity switch, cylindrical photoelectric switch, detects passing objects

Detects product appearance defects or characteristic points
Detects small gaps using coaxial optical fiber with collecting lens with a Min. light spot size of 0.5mm

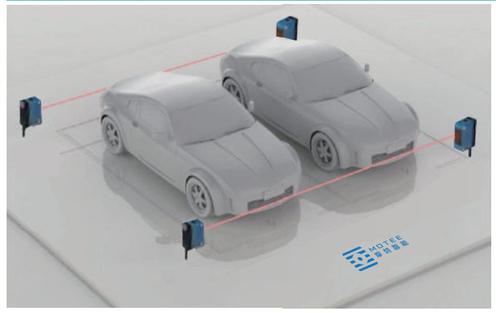
Strip light photoelectric detection of hollow circuit boards or irregular objects
Detects substrates, small light spots, and black objects in the mounting machine.



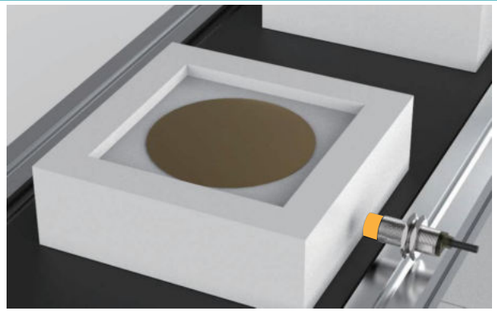
Detects the orientation of the carton
Background suppression photoelectric can detect different colors and differentiate between cartons that are placed in different directions.



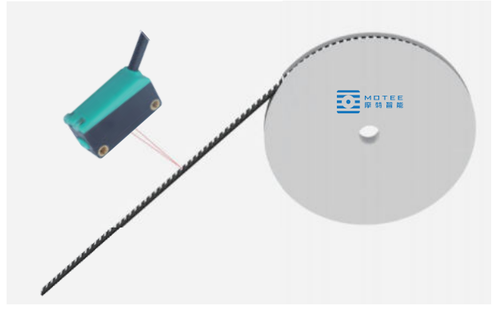
Small angle through-beam photoelectric
Accurately detects the passage of flat objects.



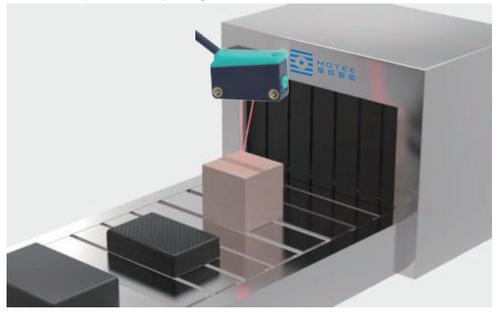
Laser through-beam detects vehicle position
Detects the edge position of vehicle in a multistorey parking lot.



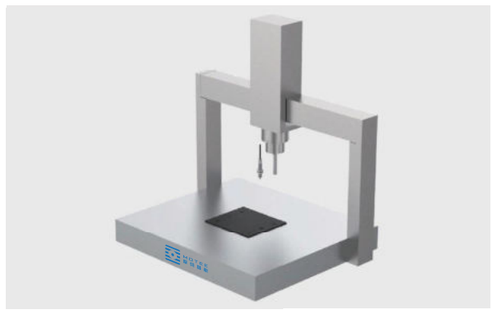
Proximity sensor detects packaging
When the scanning distance is short, the target is made of non-metallic materials and the response time and positioning accuracy are not very important, inductive sensors are a wise choice. Inductive proximity sensor detects the presence of packages



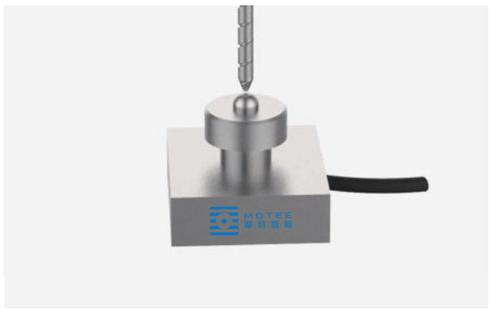
Detects the height difference of resistance before welding
High-precision laser background suppression L61-BG detects subtle height differences



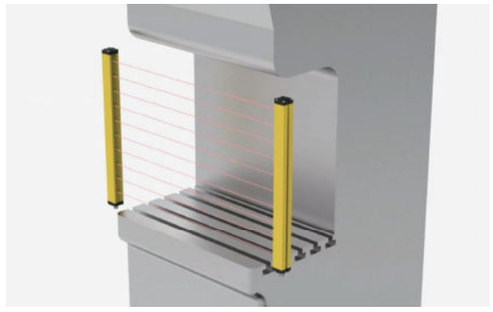
Confirmation of passage of conveyor belt packages
Confirms the passage of packages on the conveyor line, counts the number of packages that have passed, and also distinguishes and categorizes the packages that have passed.



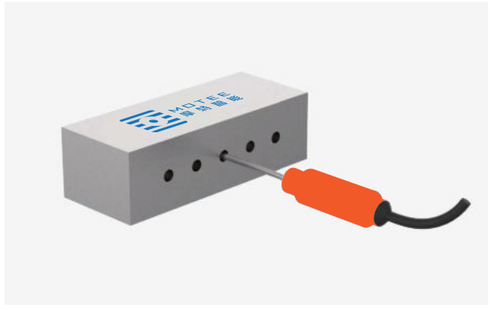
Dispenser detects height of adhesive nozzle
Precision contact sensor detects nozzle height for μm-level dispensing positioning



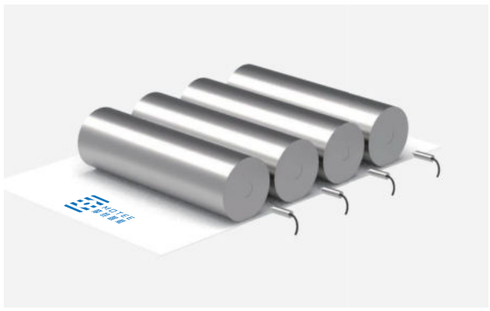
MS-LV pen-type displacement sensor μ-level detection
Contact sensor detects cutter head wear and decides whether to change the cutter.



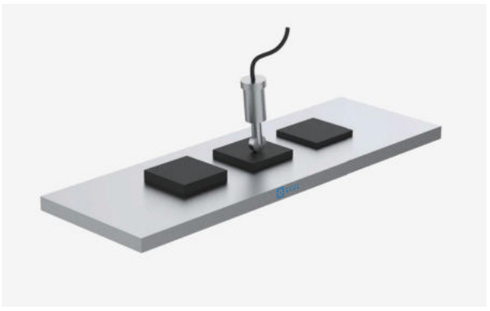
Tooling jig, fixture detection equipment, test equipment
Light curtain sensor to prevent accidents during punching operation.



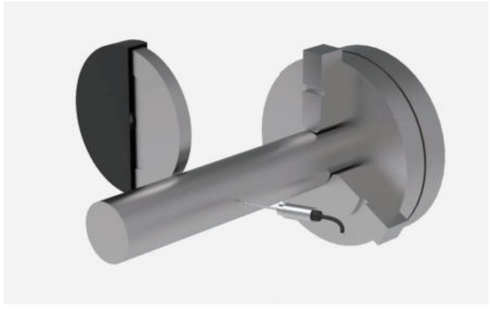
One-to-multiple optical fiber sensor



Magnetic metal induction positioning
Realizes display accuracy error for correction.

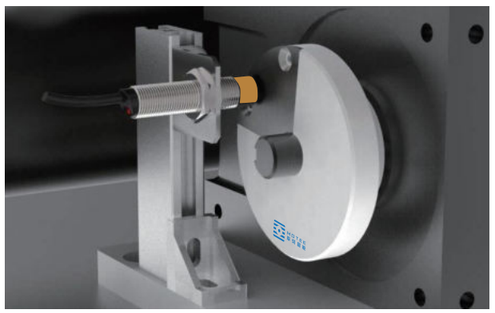


Detects metal plate repeat pickup
Multi-point contact sensors can differentiate between different plate heights



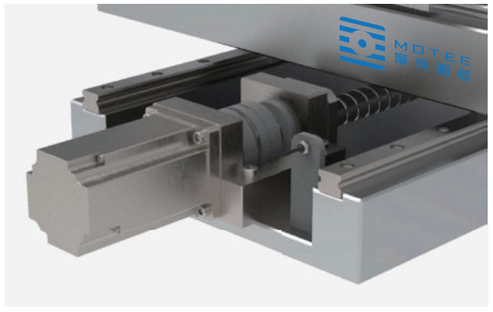
Contact sensor
It can cope with harsh environments such as cooling water and cutting dust.

μm-level contact sensor detects flatness
Stable detection at the μm level is possible.



Detects rotating mechanism original position
Inductive sensor allows for origin finding and positioning and can be used in cutting fluid environments.

Cam splitter
Splitter station, brake signal control.



Compensating for X, Y axes thermal displacement
Measuring displacement difference of the X-Y axes for automatic adjustment
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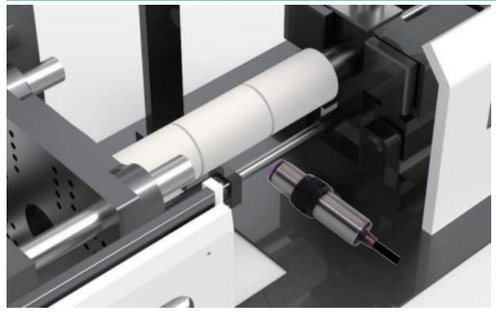
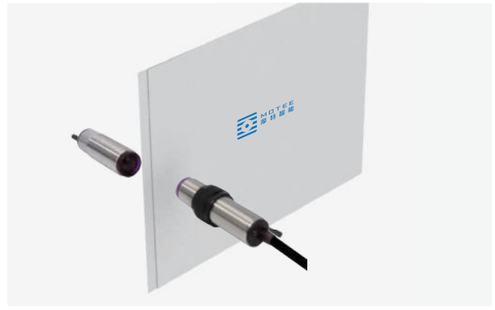
Punching machine flywheel position detection
Punching machine flywheel position detection.



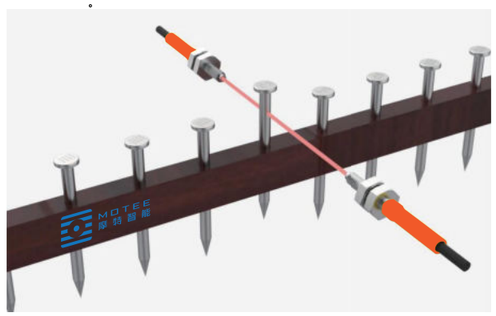
Photoelectric switch detects the presence of objects
Detects the injection molding machine transfer position.

Remote detection of material in containers
Detects material in the hopper.

Photoelectric switch detection counting
Control the speed or frequency of the movement based on the signal feedback from the sensor



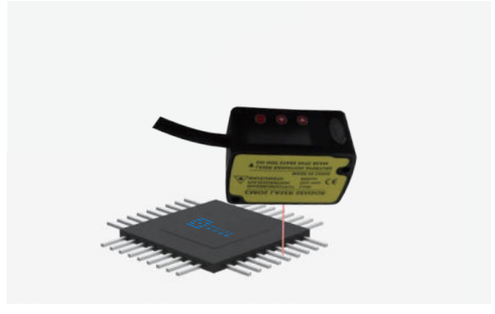
Through-beam sensor detects opaque objects
Used for edge positioning, up to 50 meters of through-beam



Through-beam optical fiber detects fine objects
Min. detection accuracy 0.5mm of opaque objects

Wafer notch detection
The use of coaxial reflection type optical fiber and focusing lens allows detection of small notch.

Protect arms and fingers from injury
Safety grating or photoelectric for effective personal protection

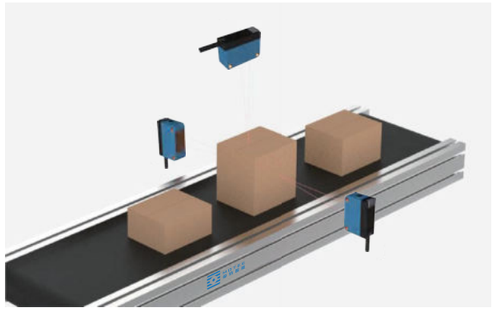


Detects workpieces with IC tester
Check the bending of the pin with high speed laser displacement meter.

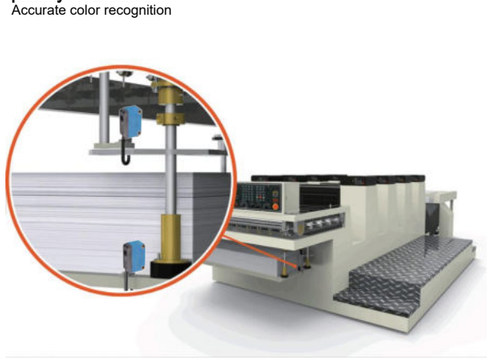
Alignment confirmation of connector pins
High-precision displacement detection of pins.

Analog signal output to detect object flatness
Newly developed high-precision measurement technology is used to improve measurement accuracy and stability.

Easy-to-configure color mark sensor for detecting the three primary RGB colors
Accurate color recognition



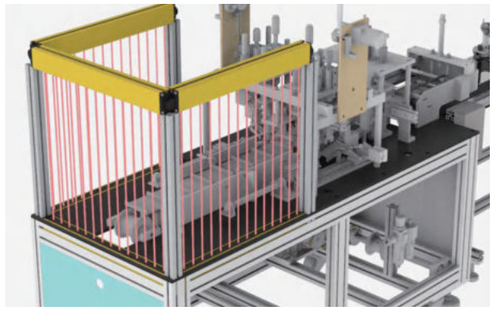
Universal sensor for loading and unloading machines, transfer machines, logistics equipment and assembly lines
Square photoelectric in international common sizes



Photoelectric sensor for detecting paper loading counts on industrial printer trays
Photoelectric sensor for detecting paper loading counts on industrial printer trays

Ultra-thin photoelectric sensor for detecting labeled boxes
Ultra-thin photoelectric sensors are installed in narrow space to detect labeled boxes that are then transported

Entrance guarding for feeding units
Safe guarding of assembly line feeding inlet in lithium, photovoltaic, semiconductor and other industries



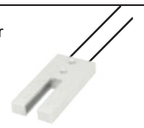
Shaped safety grating customization
Arc, U-shape, triangle and other special applications of protection, cascade, blanking and other special requirements customization

Sensor product comprehensive content

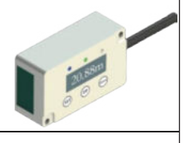
Slotted sensor

Ultra-small slotted photoelectric sensor UX95 Series P.11 	Compact slotted photoelectric sensor UX45 Series P.15 	Plug-in slotted photoelectric sensor UX65 Series P.19 
Plug-in slotted photoelectric sensor UX67 Series P.23 	Wired slotted photoelectric sensor UX67-WR Series P.27 	Wide-slotted photoelectric sensor UX67-WR Series P.31 
Label slotted sensor UX Series P.33 		

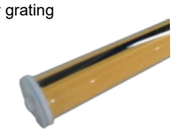
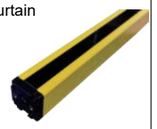
Optical fiber sensor

General optical fiber amplifier EX Series P.35 	Analog correction amplifier EX-V Series P.39 	Color optical fiber amplifier EX-C Series P.41 
Optical fiber element EX-D Reflection series P.43 	Optical fiber element EX-T Through-beam series P.47 	Slotted optical fiber EX-UT series P.51 
Cross-aligned fiber EX Series P.51 	Optical fiber for blanking detection EX Series P.51 	Optical fiber element High temperature, high flexibility series P.52 

Displacement sensor

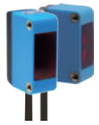
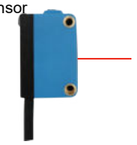
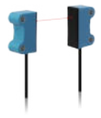
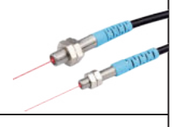
Laser displacement sensor MD Series P.53 	High precision laser displacement sensor MD Series P.55 	Long distance laser distance detection sensor MD Series P.57 
TOF Long distance laser distance detection sensor MD Series P.59 	Grating displacement sensor MD Series P.61 	Contact displacement sensor MD Series P.63 

Safety sensor

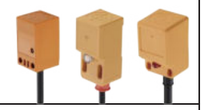
Standard safety grating MTS Series P.71 	Front ultra-thin safety grating MTF Series P.73 	Side ultra-thin safety grating MTL Series P.75 
Plastic housing safety grating MTP Series P.77 	Compact safety grating MTC Series P.79 	Type 4 no blind area safety grating MTE Series P.81 
Enhanced safety grating MTG Series P.83 	Measuring safety grating MTM Series P.85 	Waterproof safety grating MTR Series P.87 
Diffuse area light curtain MTD Series P.89 	Light curtain controller MT Series P.91 	Magnetic door contact MT Series P.93 
Magnetic encoding safety switch MT Series P.95 	Electromagnetic locking safety door lock MT Series P.97 	Safety door lock MT Series P.99 
MT Series electronic safety door lock MT Series P.101 	Door lock handle MT Series P.103 	Safety relay MSR Series P.105 
Laser obstacle avoidance radar MT Series P.107 		

Sensor product comprehensive content

Photoelectric sensor

Square general photoelectric sensor EZ Series P.109 	Background suppression photoelectric sensor EZ-BG Series P.111 	Strip light spot photoelectric sensor EZ Series P.113 
Limited reflective photoelectric sensor EZ Series P.117 	Time flight photoelectric sensor EZ Series P.119 	Laser photoelectric sensor EZ Series P.121 
High-end background suppression sensor EZ Series P.123 	One-key setting photoelectric sensor EZ-S Series P.125 	Long distance photoelectric sensor EZ Series P.127 
Thin photoelectric sensor EZ Series P.129 	Ultra-thin photoelectric sensor EZ Series P.131 	Small photoelectric sensor EZ Series P.133 
Micro photoelectric sensor EZ Series P.135 	Micro photoelectric sensor EZ-BG Series P.137 	Flat photoelectric sensor EZ Series P.139 
Flat photoelectric sensor EZ Series P.141 	Cylindrical photoelectric sensor E3F Series P.143 	Laser optical fiber photoelectric sensor E3F Series P.145 
Photoelectric liquid level sensor E3F Series P.147 		

Proximity sensor

Cylindrical proximity sensor EB-M Series P.149 	Double distance type proximity sensor EB-M Series P.153 	Square proximity sensor EB-Q Series P.157 
Flat proximity sensor EB-W Series P.159 	Ring proximity sensor EB-C Series P.163 	Cylindrical capacitive proximity switch EB-DRM Series P.165 
Flat capacitive proximity switch EB-DRF Series P.167 	Capacitive liquid level sensor EB-DRY Series P.169 	Hall proximity switch EB-HE series P.171 

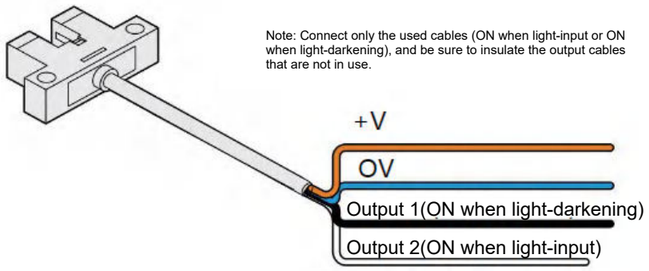
Specialized sensor

Color mark sensor MS Series P.173 	Magnetic sensor MS Series P.175 	Negative pressure sensor MS Series P.177 
Ultrasonic single-and-double-sheet sensor MS Series P.179 	Basic CR100 series code reader MS Series P.181 	Functional CR200 series code reader MS Series P.183 
Rotary encoder MS series P.185 	Handwheel and metering wheel MS Series P.188 	Sensor Tester MS series P.191 

UX95 SERIES ULTRA-SMALL SLOTTED PHOTOELECTRIC SENSOR

The equipment has two separate outputs

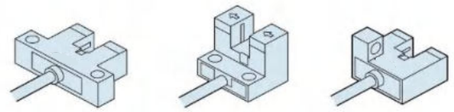
All models are equipped with two independent outputs - ON when light-input and ON when light-darkening - to cope with different output requirements depending on the place of use.



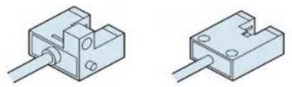
Note: Connect only the used cables (ON when light-input or ON when light-darkening), and be sure to insulate the output cables that are not in use.

Simple connection

The simple connection type realizes quick and easy connection by eliminating all the troubles such as soldering and insulation treatment that were required in the past.



K-type L-type F-type



R-type U-type

Wire lead

Comes standard with 2M flexible wire, wire length can be customized.
Bend-resistant drag chain wire-GR is optional.
Optional white-normally-open black-normally-closed-SX.

Wide voltage range

Power supply voltage range 5~24VDC:

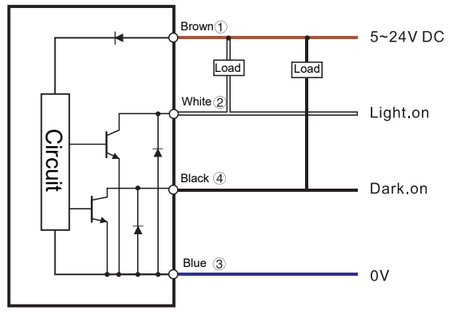
High-speed response

High-speed response with an answer frequency of 3KHZ.

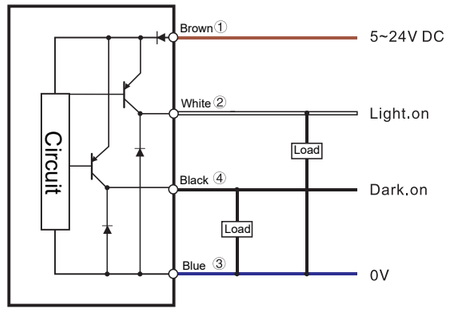
Appearance					
Category	K-type	L-type	F-type	R-type	U-type
Detection distance	5mm (slot width)				
Standardized detecting object	Opaque objects of 0.8*1.2mm or above				
Repeated accuracy	0.03mm or below				
Output mode	NPN or PNP open collector				
Switching mode	L.on(light-input action)/D.on(light-darkening action) can be switched				
Indicator light	Light off when object is detected, light on when no object is detected				
Response frequency	3 KHz				
Light source	Infrared light				
Operating voltage	5~24V DC				
Residual voltage	1V or below (at load current 100mA)				
Current consumption	¡ 8mA				
Protection circuit	Surge protection, reverse polarity protection				
Ambient light	Lighted surface luminance incandescent light: 1000lux or below				
Ambient temperature	Operating: -25¡ ~+55¡ Storing: -30¡ ~+80¡ , non-freezing				
Environmental humidity	Operating: 5%~85%RH Storage: 5%~95%RH, no condensation				
Voltage-resistant	AC,1000V for 1 minute, between all power supply connection terminals and housing				
Vibration-resistant	Frequency 10Hz~2,000Hz double-amplitude 1.5mm (Max. acceleration 196m/s2) XYZ each direction 2 hours				
Insulation resistance	20MΩ or above between all power connection terminals and housing (based on DC250V)				
Protection level	IP50				
Material	ABS+PC				
Wire outgoing method	2M4 core cable				
Model NPN	UX950-WR	UX951-WR	UX952-WR	UX953-WR	UX954-WR
Model PNP	UX950P-WR	UX951P-WR	UX952P-WR	UX953P-WR	UX954P-WR

Circuit

DC line 4-wire NPN output



DC line 4-wire PNP output

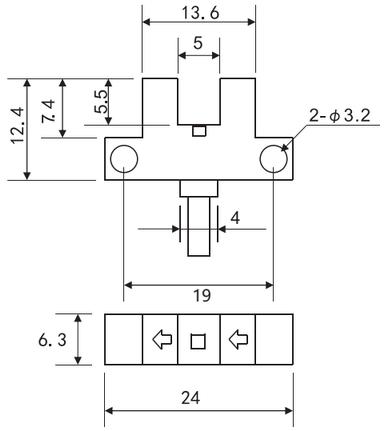


Slotted sensor

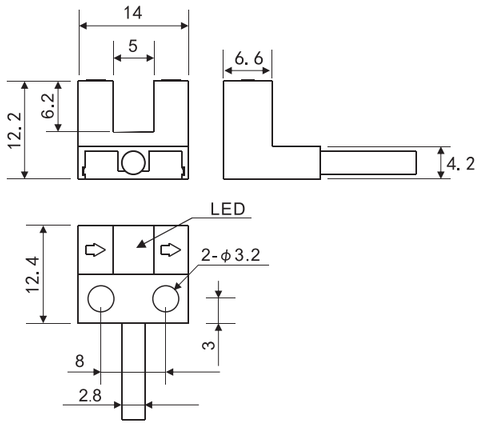
- Slotted sensor
- Optical fiber sensor
- Displacement sensor
- Safety sensor
- Photoelectric sensor
- Proximity sensor
- Specialized sensor

Outline dimension diagram (unit: mm)

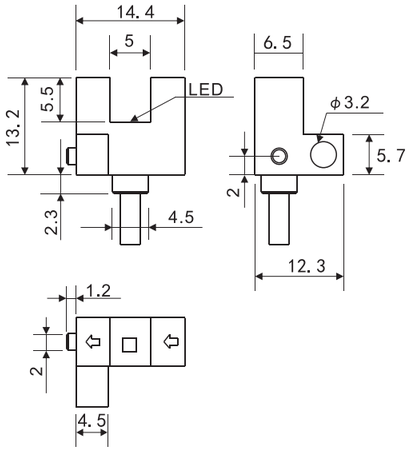
UX950-WR



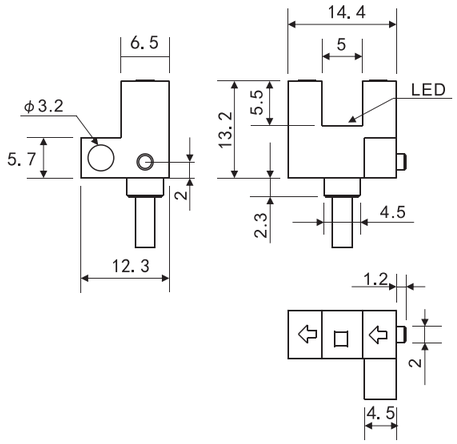
UX951-WR



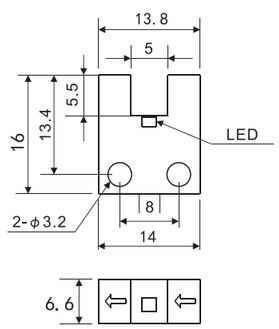
UX952-WR



UX953-WR



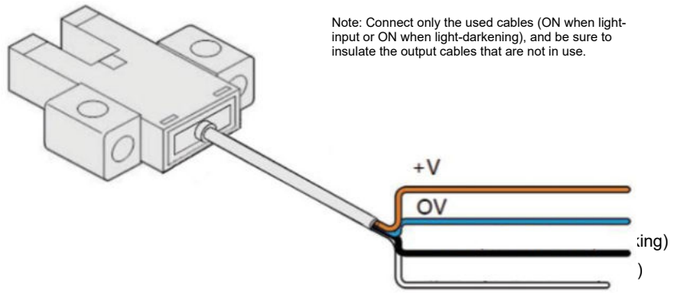
UX954-WR



UX45 SERIES COMPACT SLOTTED PHOTOELECTRIC SENSOR

The equipment has two separate outputs

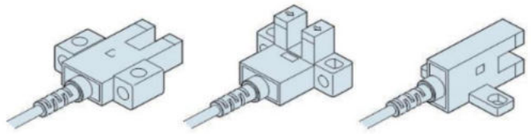
All models are equipped with two independent outputs - ON when light-input and ON when light-darkening - to cope with different output requirements depending on the place of use.



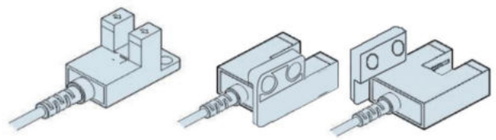
Note: Connect only the used cables (ON when light-input or ON when light-darkening), and be sure to insulate the output cables that are not in use.

Multiple models

A wide range of up to 6 shapes is available, from which you can select the model that meets your installation conditions.



K-type L-type T-type



Y-type F-type R-type

Wire lead

Comes standard with 2M flexible wire, wire length can be customized.
Bend-resistant drag chain wire-GR is optional.
Optional white-normally-open black-normally-closed-SX.

Wide voltage range

Power supply voltage range 5~24VDC:

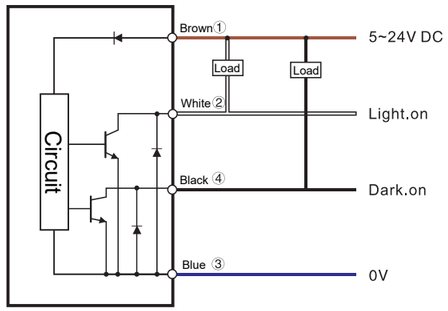
High-speed response

High-speed response with an answer frequency of 3KHZ.

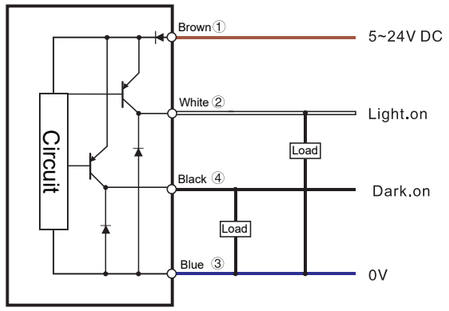
Compact slotted photoelectric sensor

Appearance						
Category	K-type	L-type	T-type	Y-type	F-type	R-type
Detection distance	5mm (slot width)					
Standardized detecting object	Opaque objects of 0.8*1.2mm or above					
Repeated accuracy	0.03mm or below					
Output mode	NPN open collector					
Switching mode	L.on(light-input action)/D.on(light-darkening action) can be switched					
Indicator light	Light off when object is detected, light on when no object is detected					
Response frequency	3 KHz					
Light source	Infrared light					
Operating voltage	5~24V DC					
Residual voltage	1V or below (at load current 100mA)					
Current consumption	¡ 8mA					
Protection circuit	Surge protection, reverse polarity protection					
Ambient light	Lighted surface luminance incandescent light: 1000lux or below					
Ambient temperature	Operating: -25¡ ~+55¡ Storing: -30¡ ~+80¡ , non-freezing					
Environmental humidity	Operating: 5%~85%RH Storage: 5%~95%RH, no condensation					
Voltage-resistant	AC,1000V for 1 minute, between all power supply connection terminals and housing					
Vibration-resistant	Frequency 10Hz~2,000Hz double-amplitude 1.5mm (Max. acceleration 196m/s2) XYZ each direction 2 hours					
Insulation resistance	20MΩ or above between all power connection terminals and housing (based on DC250V)					
Protection level	IP50					
Material	ABS+PC					
Wire outgoing method	2M4 core cable					
Model NPN	UXK45	UXL45	UXT45	UXY45	UXF45	UXR45
Model PNP	UXK45P	UXL45P	UXT45P	UXY45P	UXF45P	UXR45P

DC line 4-wire NPN output

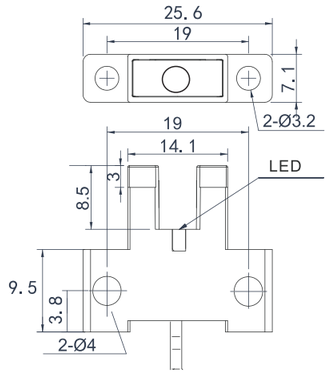


DC line 4-wire PNP output

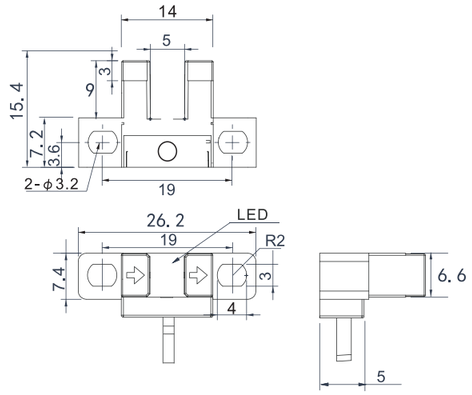


Outline dimension diagram

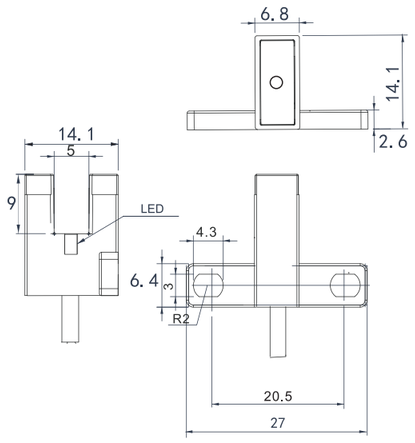
UXK45



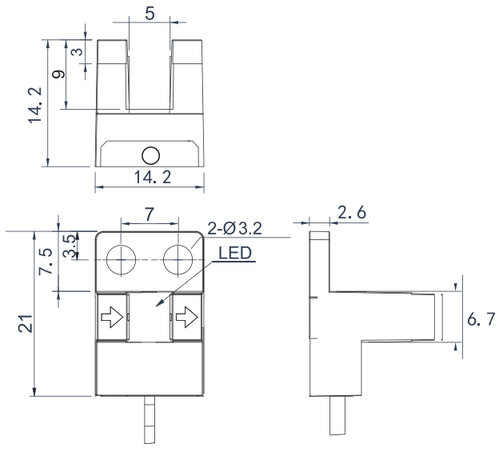
UXL45



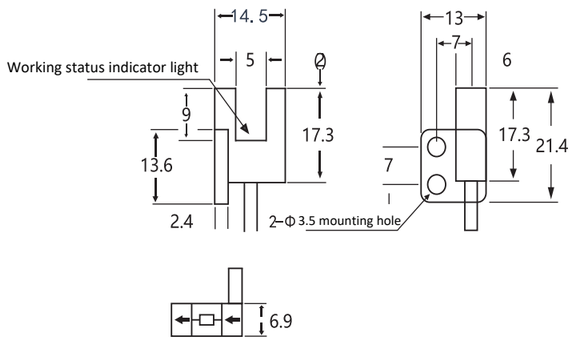
UXT45



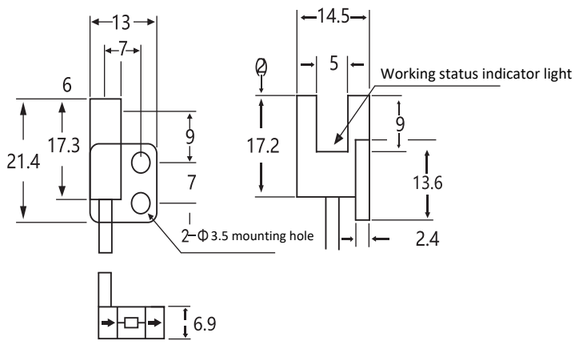
UXY45



UXF45



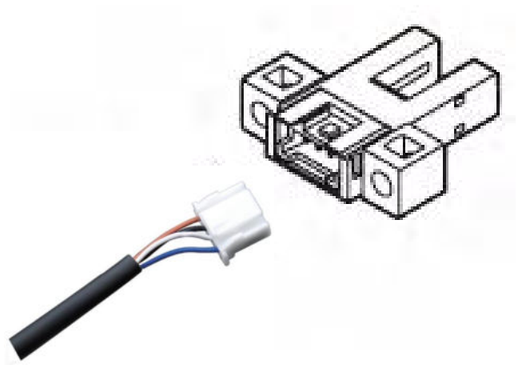
UXR45



Slotted sensor
Optical fiber sensor
Displacement sensor
Safety sensor
Photoelectric sensor
Proximity sensor
Specialized sensor

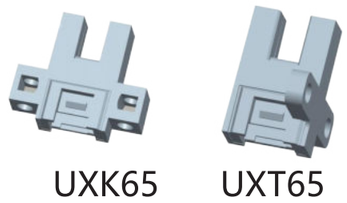
UX65 SERIES PLUG-IN SLOTTED PHOTOELECTRIC SENSOR

Cable with connectors



Multiple models

A wide range of up to 6 shapes is available, from which you can select the model that meets your installation conditions.



UXK65

UXT65

UXL65

UXY65

Wire lead

Optional UX1008 connection cable.
Optional UX1008-GR high flex cable.

Wide voltage range

Power supply voltage range 5~24V DC:

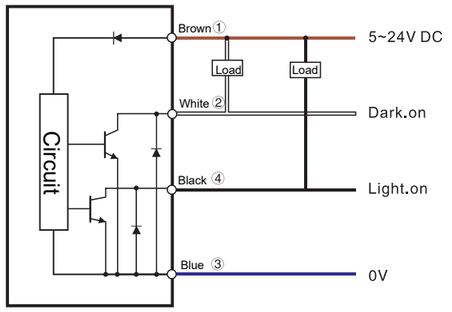
High-speed response

High-speed response with an answer frequency of 3KHZ.

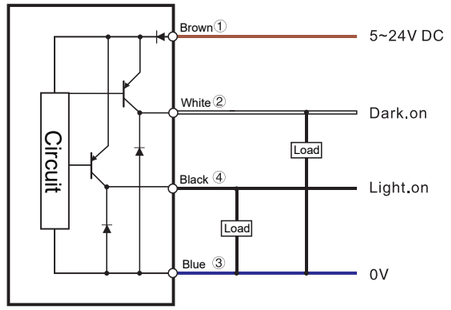
Appearance						
Category	K-type	L-type	T-type	Y-type	F-type	R-type
Detection distance	5mm (slot width)					
Standardized detecting object	0.8Mm×1.2mm opaque body					
Repeated accuracy	0.03mm or below					
Output mode	NPN open collector					
Switching mode	L.on(light-input action)/D.on(light-darkening action) can be switched					
Indicator light	Orange LED(lights up when light-input)					
Response frequency	3 KHz					
Light source	Infrared light					
Operating voltage	5V DC~24V DC±10% pulsation P-P10% or below					
Residual voltage	1V or below (at load current 100mA)					
Current consumption	¡ 8mA					
Protection structure	IP50(IEC)					
Ambient light	Lighted surface luminance incandescent light: 1000lux or below					
Ambient temperature	-25¡ ~+55¡ (caution: no condensation or icing), in storage: -30¡ ~+80¡					
Environmental humidity	5%RH~85%RH, in storage£"5%RH~95%RH					
Voltage-resistant	AC 1,000V for 1 minute between all power supply connection terminals and housing					
Vibration-resistant	Frequency 10Hz~2,000Hz double-amplitude 1.5mm (Max. acceleration 196m/s2) XYZ each direction 2 hours					
Insulation resistance	20MΩ or above between all power connection terminals and housing, based on DC250V megger)					
Protection level	P50(IEC)					
Material	ABS+PC					
Wire outgoing method	Connector					
Model NPN	UXK65	UXL65	UXT65	UXY65	UXF65	UXR65
Model PNP	UXK65P	UXL65P	UXT65P	UXY65P	UXF65P	UXR65P

Circuit

DC line 4-wire NPN output



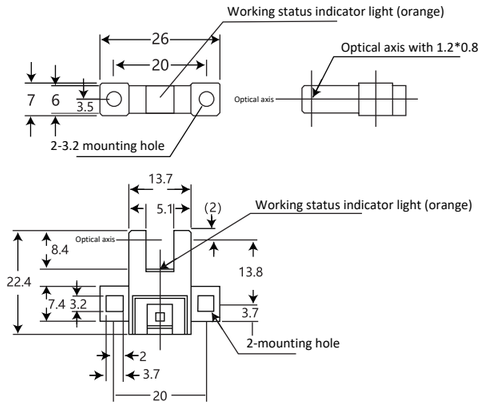
DC line 4-wire PNP output



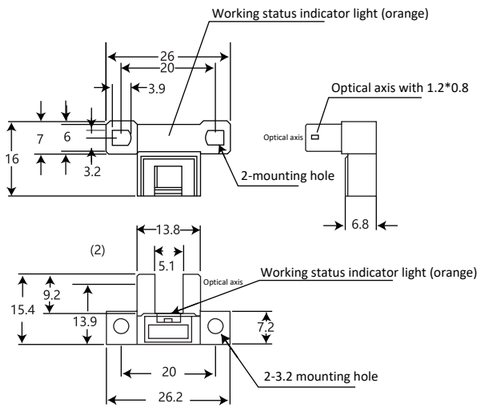
Plug-in slotted photoelectric sensor

Outline dimension diagram

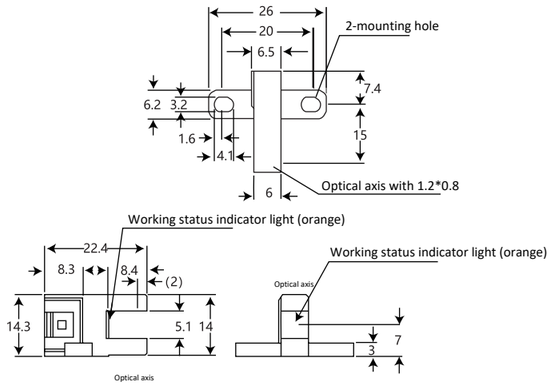
UXK65



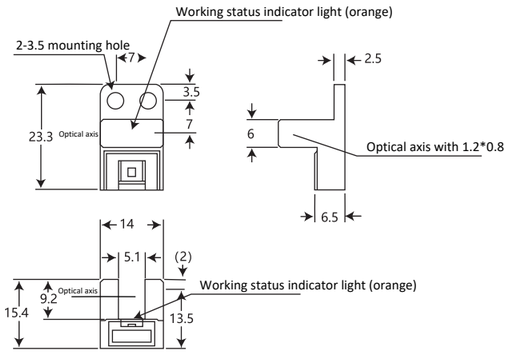
UXL65



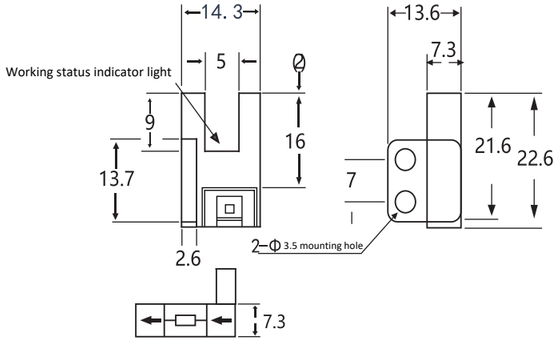
UXT65



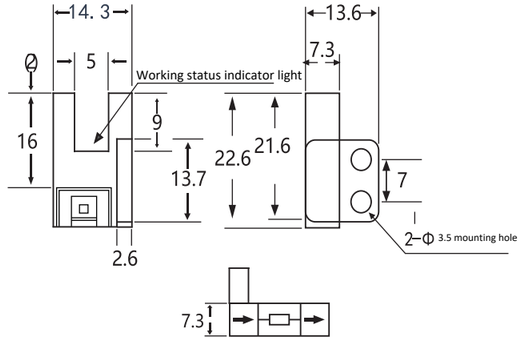
UXY65



UXF65



UXR65



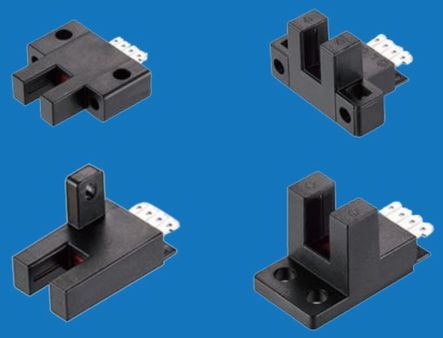
Accessories

UX1008 (default 2m, others 1m, 3m, 5m, 7m, 10m are available)

Slotted sensor

Slotted sensor
Optical fiber sensor
Displacement sensor
Safety sensor
Photoelectric sensor
Proximity sensor
Specialized sensor

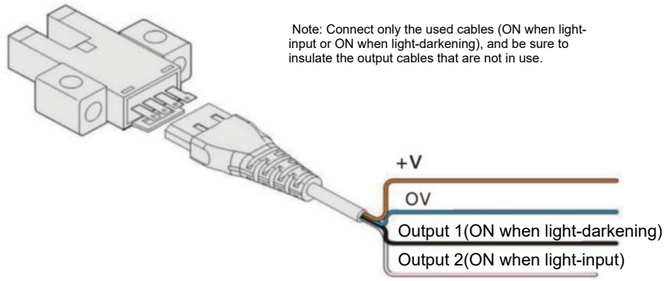
UX67 SERIES PLUG-IN SLOTTED PHOTOELECTRIC SENSOR



Plug-in slotted photoelectric sensor

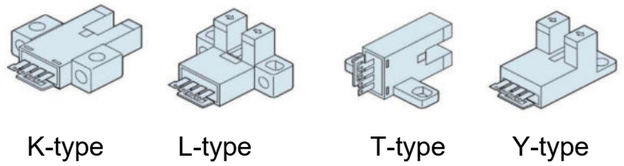
The equipment has two separate outputs

All models are equipped with two independent outputs - ON when light-input and ON when light-darkening - to cope with different output requirements depending on the place of use.



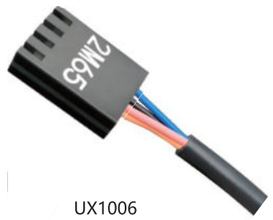
Multiple models

A wide range of up to 4 shapes is available, from which you can select the model that meets your installation conditions.



Simple connection

The simple connection type realizes quick and easy connection by eliminating all the troubles such as soldering and insulation treatment that were required in the past.Equipped with black output , pink switching product selection-QH.



UX1006

High-speed response

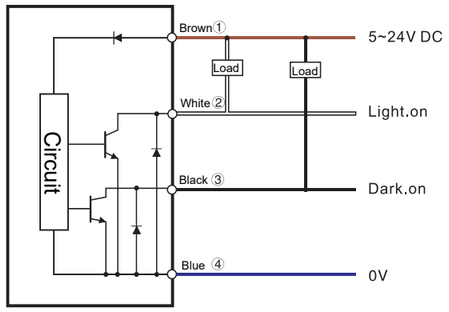
High-speed response with an answer frequency of 3KHZ.

Wired slotted photoelectric sensor

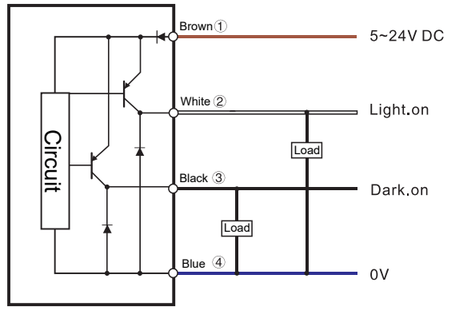
Appearance				
Category	K-type	L-type	T-type	Y-type
Detection distance	5mm (slot width)			
Standardized detecting object	Opaque objects of 0.8*1.2mm or above			
Repeated accuracy	0.03mm or below			
Output mode	NPN open collector			
Switching mode	L.on(light-input action)/D.on(light-darkening action) can be switched			
Indicator light	Light off when object is detected, light on when no object is detected			
Response frequency	3 KHz			
Light source	Infrared light			
Operating voltage	5~24V DC			
Residual voltage	1V or below (at load current 100mA)			
Current consumption	¡ 8mA			
Protection circuit	Surge protection, reverse polarity protection			
Ambient light	Lighted surface luminance incandescent light: 1000lux or below			
Ambient temperature	Operating: -25¡ ~+55¡ Storing: -30¡ ~+80¡ , non-freezing			
Environmental humidity	Operating: 5%~85%RH Storage: 5%~95%RH, no condensation			
Voltage-resistant	AC,1000V for 1 minute, between all power supply connection terminals and housing			
Vibration-resistant	Frequency 10Hz~2,000Hz double-amplitude 1.5mm (Max. acceleration 196m/s2) XYZ each direction 2 hours			
Insulation resistance	20MΩ or above between all power connection terminals and housing (based on DC250V)			
Protection level	IP50			
Material	ABS+PC			
Wire outgoing method	Connector			
Model NPN	UX670	UX671	UX672	UX674
Model PNP	UX670P	UX671P	UX672P	UX674P

Circuit

DC line 4-wire NPN output

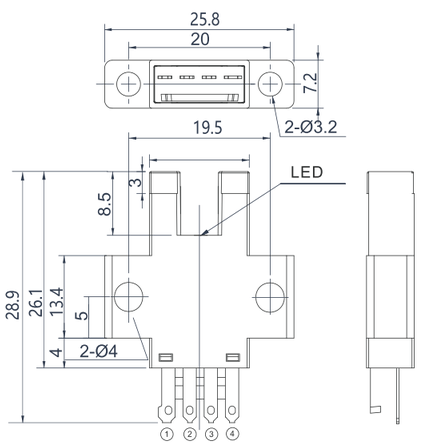


DC line 4-wire PNP output

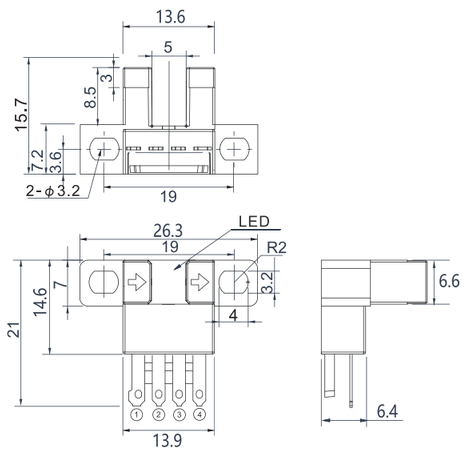


Outline dimension diagram (unit: mm)

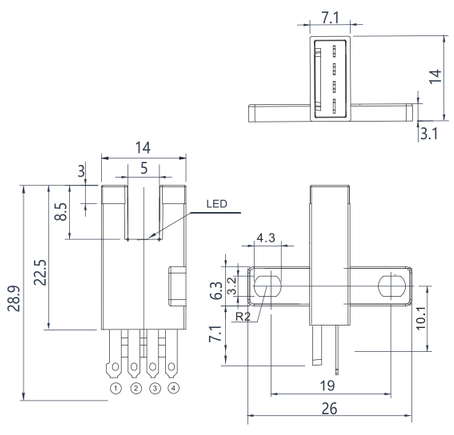
UX670



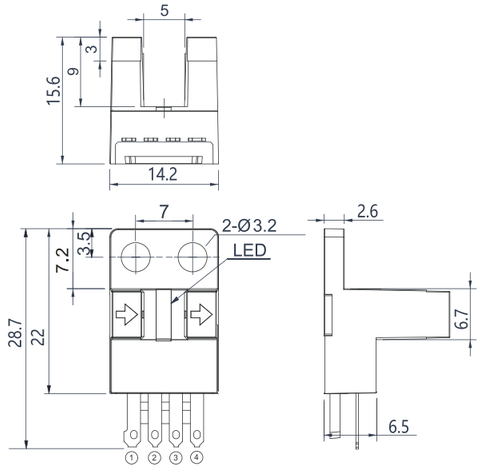
UX671



UX672



UX674



Accessories

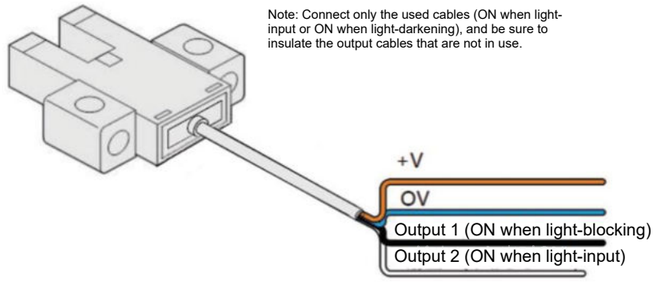
UX1006 (default 2m, others 1m, 3m, 5m, 7m, 10m are available)

UX1010 (default 2m, others 1m, 3m, 5m, 7m, 10m are available)

UX67-WR SERIES WIRED SLOTTED PHOTOELECTRIC SENSOR

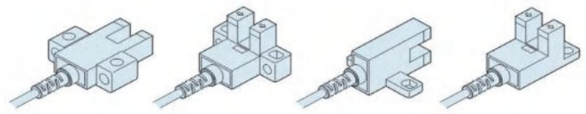
The equipment has two separate outputs

All models are equipped with two independent outputs - ON when light-input and ON when light-darkening - to cope with different output requirements depending on the place of use.



Multiple models

A wide range of up to 6 shapes is available, from which you can select the model that meets your installation conditions.



K-type L-type T-type Y-type

Wire lead

Comes standard with 2M flexible wire, wire length can be customized.
Bend-resistant drag chain wire-GR is optional.
Optional white-normally-open black-normally-closed-SX.

Wide voltage range

Power supply voltage range 5~24VDC:

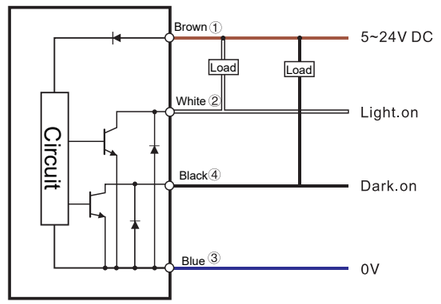
High-speed response

High-speed response with an answer frequency of 3KHZ.

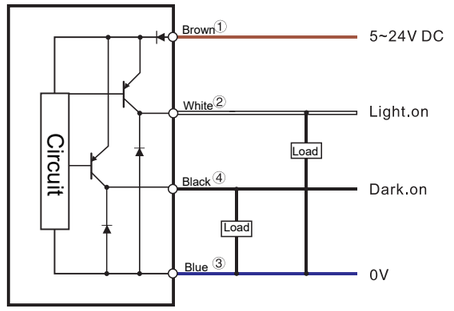
Appearance						
Category						
Detection distance	5mm (slot width)					
Standardized detecting object	Opaque objects of 0.8*1.2mm or above					
Repeated accuracy	0.03mm or below					
Output mode	NPN open collector					
Switching mode	L.on(light-input action)/D.on(light-darkening action) can be switched					
Indicator light	Light off when object is detected, light on when no object is detected					
Response frequency	3 KHz					
Light source	Infrared light					
Operating voltage	5~24V DC					
Residual voltage	1V or below (at load current 100mA)					
Current consumption	¡ 8mA					
Protection circuit	Surge protection, reverse polarity protection					
Ambient light	Lighted surface luminance incandescent light: 1000lux or below					
Ambient temperature	Operating: -25¡ ~+55¡ Storing: -30¡ ~+80¡ , non-freezing					
Environmental humidity	Operating: 5%~85%RH Storage: 5%~95%RH, no condensation					
Voltage-resistant	AC,1000V for 1 minute, between all power supply connection terminals and housing					
Vibration-resistant	Frequency 10Hz~2,000Hz double-amplitude 1.5mm (Max. acceleration 196m/s2) XYZ each direction 2 hours					
Insulation resistance	20MΩ or above between all power connection terminals and housing (based on DC250V)					
Protection level	IP50					
Material	PC					
Wire outgoing method	2M4 core cable					
odel NPN	UX670-WR	UX671-WR	UX672-WR	UX673-WR	UX674-WR	UX675-WR
Model PNP	UX670P-WR	UX671P-WR	UX672P-WR	UX673P-WR	UX674P-WR	UX675P-WR

Circuit

DC line 4-wire NPN output

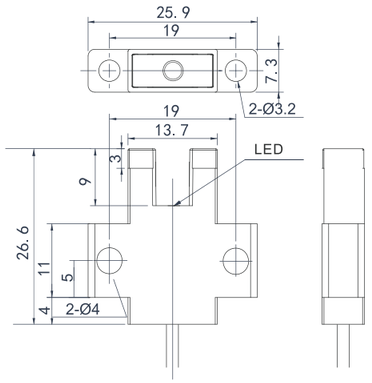


DC line 4-wire PNP output

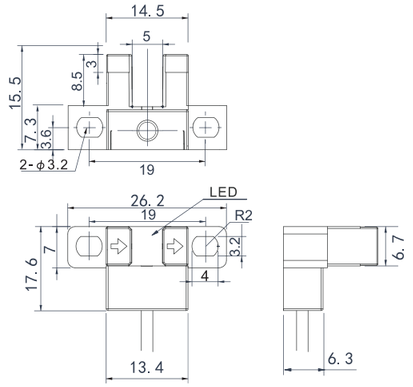


Outline dimension diagram

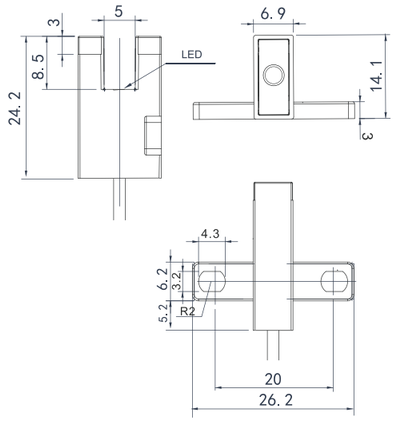
UX670-WR



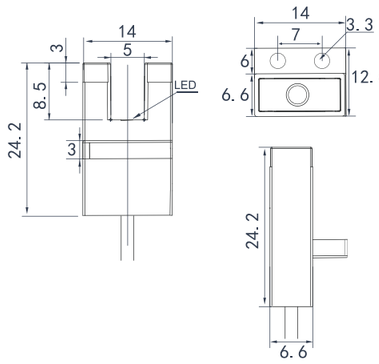
UX671-WR



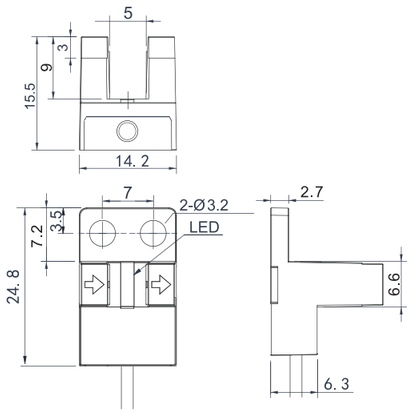
UX672-WR



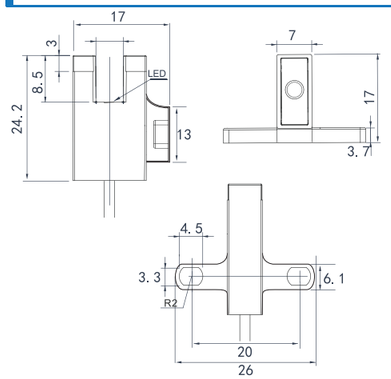
UX673-WR



UX674-WR



UX675-WR



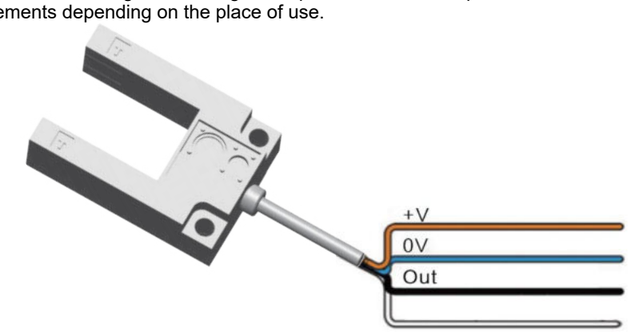
Wired slotted photoelectric sensor

Slotted sensor

UXG SERIES WIDE-SLOTTED PHOTOELECTRIC SENSOR

The equipment has two separate outputs

All models are equipped with two independent outputs - ON when light-input and ON when light-darkening - to cope with different output requirements depending on the place of use.



Note: Link only the used cables (ON when light-input \ ON when light-darkening), and be sure to insulate the output cables that are not in use.

Strong interference resistant ability

Strong resistance to external light interference, the smallest detection object of 1mm, high-speed response with an answer frequency of 1Khz

Three model options for slot width

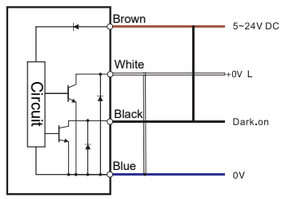
Slot width includes: 15mm, 25mm and 30mm, you can choose the model that meets your installation conditions according to your needs

Sensitivity adjustable

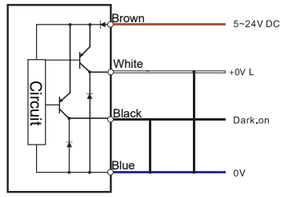
Built-in single-turn potentiometer, adjust the sensitivity to detect transparent film or labels over 0.1mm

Wiring method

DC line 4-wire NPN output



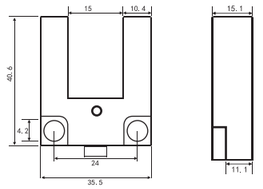
DC line 4-wire PNP output



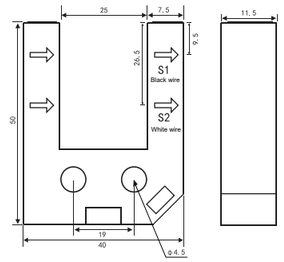
Product parameters

Appearance			
Item model	UXG15	UXG25	UXG30
Detection distance	15mm	25mm	30mm
Standardized detecting object	Opaque objects of ϕ 1mm or above		
Response frequency	1 KHz		
Light source (luminous wavelength)	Infrared light emitting diode (950nm)		
Power supply voltage	DC 12~24V±10% pulsation (p-p)10% or below		
Current consumption	40mA or below		
Control output	Load power supply voltage DC24V or below, load current 80mA or below (residual voltage 2V or below), NPN voltage output type, ON when light input /ON when light blocking, wire connection switching method		
Protection circuit	Power supply reverse-connection protection, output short circuit protection		
Response time	Action, reset: under 1ms each		
Sensitivity adjustment	Unidirectional rotary knob		
Service ambient luminance	Lighted surface luminance incandescent light: 3,000lx, sunlight: 10,000lx		
Ambient temperature	Operating: -25~+55¡ In storage: -40~+70¡ (no icing or frosting)		
Environmental humidity	In operating: 35~85% RH, in storage: 35~95% RH (no condensation)		
Insulation resistance	20MΩ or above (DC500V megohmmeter)		
Voltage-resistant	AC1,000V50/60Hz 1min		
Vibration (durable)	10~55Hz double amplitude 1.5mm 2h in each direction of X, Y, Z		
Impact (durable)	500m/s2 3 times in each direction of X, Y, Z		
Protection structure	IEC standard IP67		
Connection method	Wire lead type (standard wire length 2m)		
Quality (after packaging)	Approx. 330g		
NPN model	UXG15	UXG25	UXG30
PNP model	UXG15P	UXG25P	UXG30P

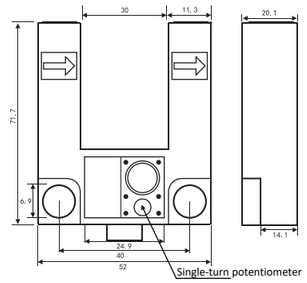
UXG15



UXG25 (two optical axes and two channels output)



UXG30



UX SERIES
LABEL SENSOR

Product characteristics

Outline advantage

The thin design allows flexible installation near automatic labeling machines, ensuring higher process precision. Compact housing saves installation space.

Solid integrated housing

Solid integrated housing for extra high reliability. Aluminum housing, protection level IP65, meets all the needs of use in harsh industrial environments.

Solid U-shape without optical axis alignment

The light projector and light receiver are mounted in the same sensor, so optical axis alignment is not required.

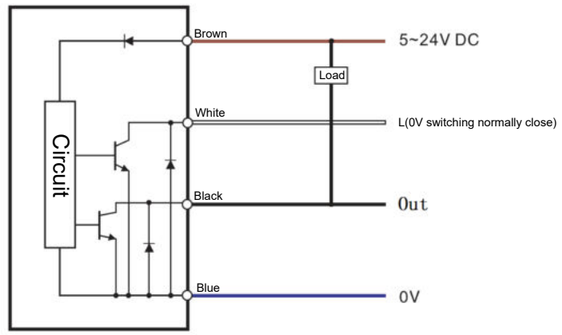
High-efficient response

Short response time, rapid response time as low as 50μs and high resolution ensure reliable detection even at high speeds.

Interference resistant

Superior ambient light interference resistance with infrared light source.

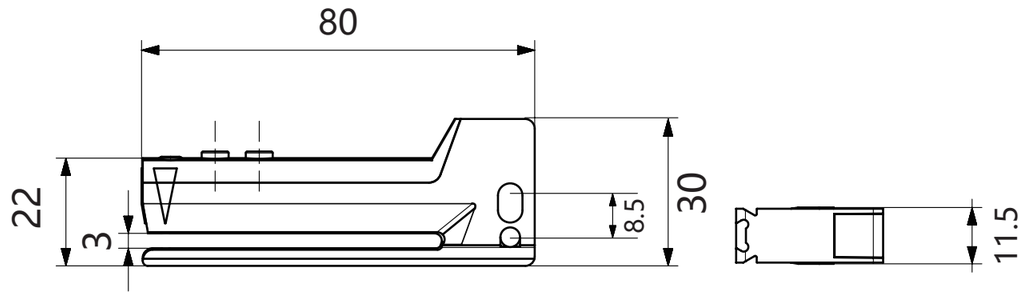
Wiring method



Product Parameters

Item \ Model \ Category		Label sensor	
	NPN output	UX-WFS3N	UX-WFS3P
	PNP output		
Appearance			
Slot depth/slot width		3x58mm	
Operating voltage		DC12V~24V	
Ripple voltage		10%	
Power consumption		40mA	
Light source		GaAs infrared light emitting diodes (940nm)	
Switching frequency		10 kHz	
Stability of response time		±20μs	
Switch function		Normally open and normally close, selectable by button	
Switch output voltage		NPN: High level=Approx. Vs/Low level¡ 2V PNP: High level=Vs-¡ 2V/Low level=Approx. 0V	
Maximum output current		100mA	
Initialization time		100ms	
Connection method		Direct outgoing wire	
Ambient light safety		Sunlight: (10000Lx)	
Circuit protection		Surge protection circuit, short circuit protection, reverse polarity protection	
Housing protection level		IP65	
Material		Housing: plastic	

Dimension diagram (unit: mm)



EX SERIES DUAL-DIGITAL DISPLAY OPTICAL FIBER AMPLIFIER

Intelligent adjustment, simple and stable

Accuracy of detection and simplicity for the customer. Long-term stable brightness and reduced device maintenance.

Setting up with just one key

Just one key to set, press the SET button when there is no target detection object, and press the SET button again when there is a target detection object to automatically set the optimal position.

Dust cover

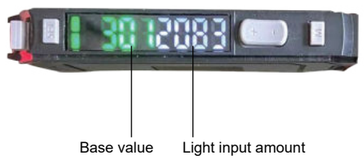
For easy observation, the dust cover is close to the display.

Adjustable light projection amount

In the case of close range detection or detection of transparent objects or small objects, when the lighted level is saturated, the light projection amount by the sensor can be adjusted without changing the response time to realize stable detection. This function makes it easy to set up detection that previously required changes in response time and optical fiber.

Two digital screens are convenient to use

Equipped with two digital screens, allowing you to check the base value, the light input amount, and various settings at the same time, making high operability.



Wire outgoing method

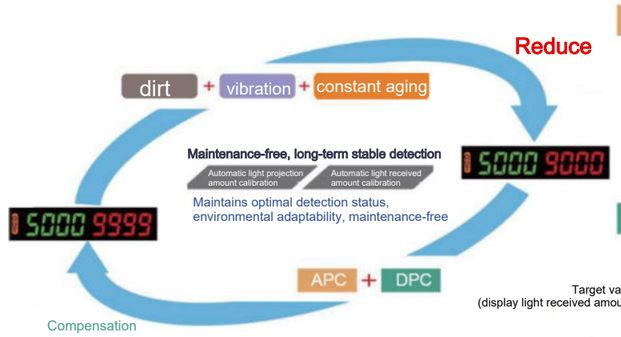
Wire lead type (standard with two meters of flexing-endurable cable) and connector type are available.

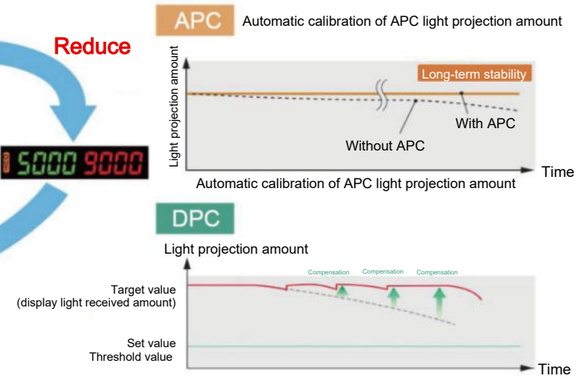
Dual-digital display optical fiber amplifier

Function introduction

Light amount value compensation

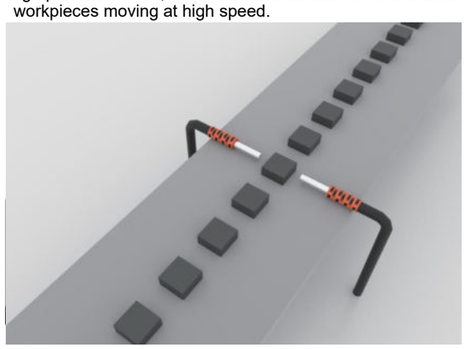
The automatic maintenance function restores the sensor to its original display state when it detects a decrease in brightness due to dirt or other reasons. This function eliminates the effects of the surrounding environment and enables the sensor to consistently perform high-precision detection.





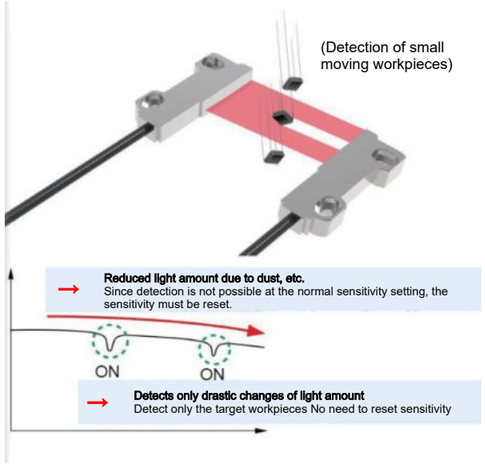
Four methods of detection

Four detection modes are available: standard detection mode 1ms, high speed 250us, ultra-high speed 25us and high precision 16ms, which can also be used to detect small workpieces moving at high speed.



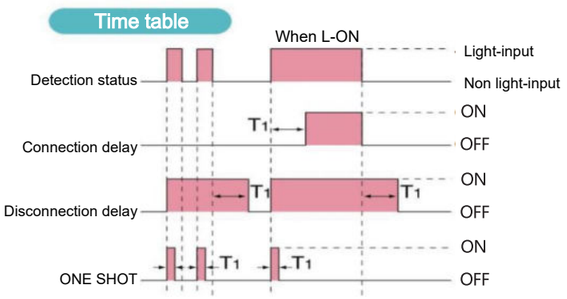
Differential detection mode

Measurements that used to be performed by multiple sensor and those for which it was difficult to set a base value can be realized.



There are 3 types of timers available

Equipped with switch-on delay, disconnect delay and ONE SHOT timer. (Time of timer is about 1ms~10s)

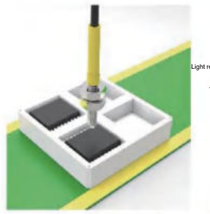


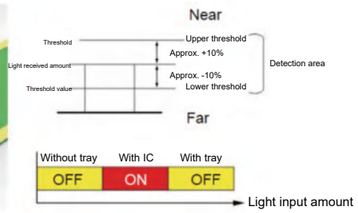
ON delay	Delayed output of ON status after detection.
OFF delay	When the detection time is short and it is not possible to execute the detection through PLC. Maintains output of ON status.
SHOT inching	Timed output is possible even if the size of the detected object is uneven.

Window detection

The upper and lower base values can be set and light input amount in this range can be made ON/OFF.

(Detection of IC in the tray)





Light amount value adjustment

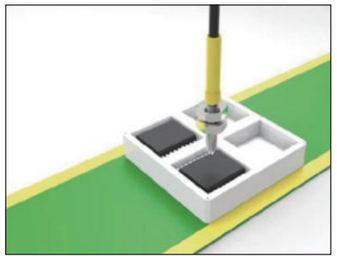
When you want to change the light input amount target (light amount value adjustment level), you can set the light amount value adjustment level (100-9999, scale of 1, initial value is 9999.).

Saves current consumption

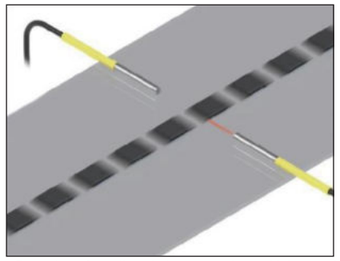
When no key operation is performed for about 20 seconds after setting , the digital display will turn off and the power consumption will be controlled to about 600mW or below. (720mW or below when light on)

Slotted sensor
Optical fiber sensor
Displacement sensor
Safety sensor
Photoelectric sensor
Proximity sensor
Specialized sensor

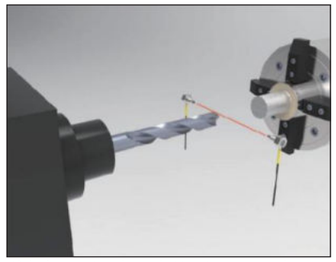
Application examples



Detects presence of IC on the tray



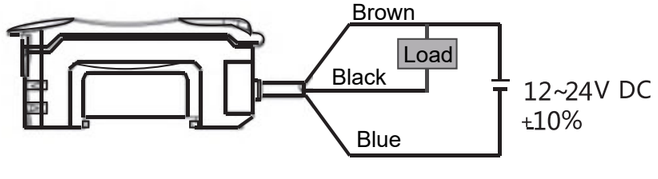
Detection of small workpieces passing at high speed



Detection in oil-contaminated harsh environments

Category	Shape (mm)	NPN type	PNP type
Economy type		EX-NA11	EX-NA11P
Simple dual-digital display		EX-HD08	EX-HD08P
Optical sensing amplifier		EX-HD09	EX-HD09P
Universal dual-digital display		EX-HD10	EX-HD10P
Chinese dual-digital display		EX-HD20	EX-HD20P

Input/output circuit

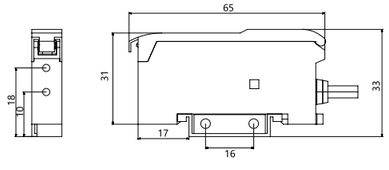


Category

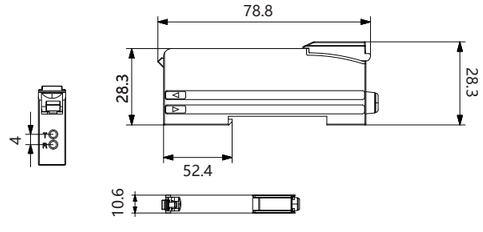
Item	Model	Economy type	Simple dual-digital display	Optical sensing amplifier	Universal dual-digital display	Chinese dual-digital display
		EX-NA11	EX-HD08	EX-HD09	EX-HD10	EX-HD20
Light source		640nm red modulated light				
Power supply voltage		DC 12-24V±10% pulsation (p-p) 10% or below				
Power consumption		¡ 30mA				
Output mode		NPN open collector/PNP open collector				
Switching mode		L.on(light-input action)/D.on(light-darkening action) can be set				
Response time		P-025μsP-1:100μs,P-2:400μs,P-3:800μs,P-4:3.2ms				
Timer function		Switch-on delay, disconnect delay, ONE SHOT timer				
Timing range		1~9999ms				
Practical functions		Parameter initialization/key lock/threshold two points, fully automatic and manual setting				
Advanced functions		Automatic compensation of light projection amount and light received amount, differential detection, area detection				
Ambient temperature		-20¡ ~+50¡				
Environmental humidity		35~85%RH				
Ambient light		Daylight: 30000LX or below Incandescent light: 20000LX or below				
Protection circuit		Surge protection circuit, short circuit protection, reverse polarity protection				
Vibration (durable)		10~55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z				
Impact (durable)		500m/s² double amplitude, 10 times in each direction of X, Y, Z				
Link method		Wire lead type (standard 2m)				
Material		Housing: PBT Cover: PC				

Dimension diagram (unit: mm)

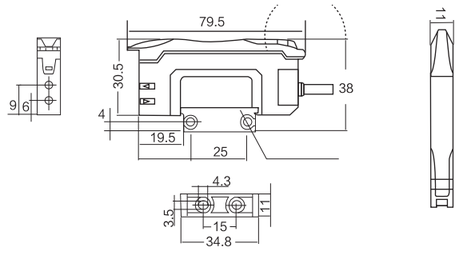
EX-NA11



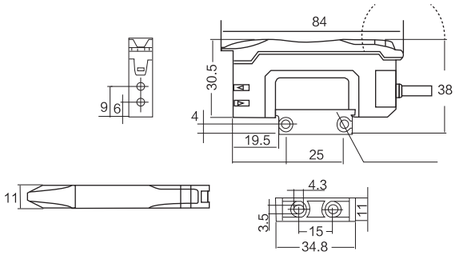
EX-HD08



EX-HD10



EX-HD20



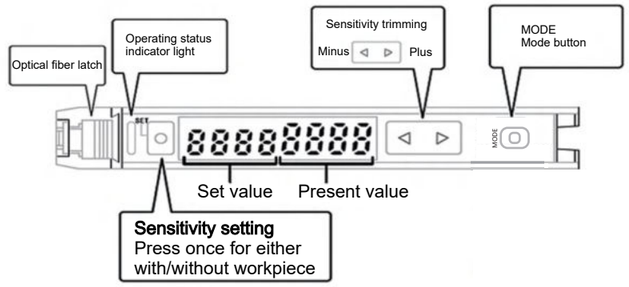
Optical fiber sensor

Slotted sensor
Optical fiber sensor
Displacement sensor
Safety sensor
Photoelectric sensor
Proximity sensor
Specialized sensor

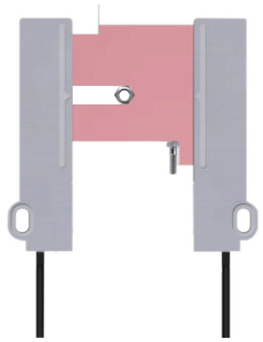
EX-V ANALOG CORRECTION AMPLIFIER

Analog correction amplifier

Product description

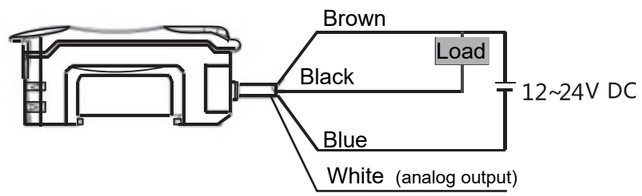


Product description



- Area correction
- Dimension measurement
- Detection for presence

Wiring diagram

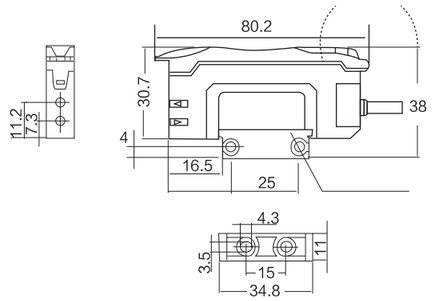


Rated specification and performance

Model	EX-V61M	EX-V61MV
	NPN output + analog current	NPN output + analog voltage
Type	1 Output, wire lead type	
Control output	1 Output port (with analog output)	
Light source	Red, 4-element light emitting diode body	
Response time	P-025μsP-1:100μs,P-2:400μs,P-3:800μs,P-4:3.2ms	
Output selection	LIGHT-ON/DARK-ON (switch selection)	
Display indicator	Operating indication light: White light emitting diode, double digit monitor: double 7-digit display, light on from threshold value (4-digit green light emitting diode body indicator) and the present value (4-digit white light emitting diode body indicator). Current value range£”0-9999	
Detection method	Light intensity (area detection available, automatic sensitive tracking function available)	
Time-delay function	Disconnect delay timer/start delay timer/single timer/start delay single timer, selectable. The meter display is selectable in duration: 1ms to 9999ms	
Control output	NPN/PNP open collector 24V, max. 100mA (only the main component) max. 20mA (when the extension component is connected, residual voltage: 1V. Model with the character ¡ M¡– sensor for the analog output, analog voltage from 0-5V, the detection accuracy of thousandth	
Power supply	12 to 24V DC within ±10%, floating ratio (P-P): max. 10% level 2	
Working environment brightness	Incandescent light: Max.: 20,000lux, daylight: Max.: 30,000lux	
Net power	Standard mode: 300mW max.	Standard mode: 300mW max.
Consumption	Max. voltage 24V	Max. voltage 24V
Vibration resistance	10 to 55Hz, Dual amplitude: 1.5mm, 2 hours for X, Y, Z axes respectively	
Ambient temperature	-10 to +55°C, non-freezing	

Dimension diagram (unit: mm)

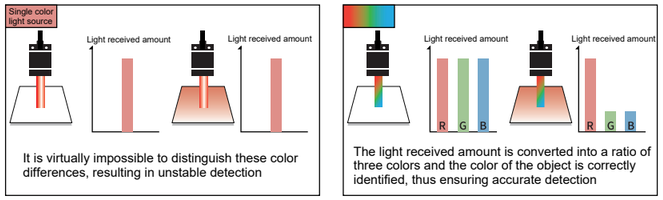
EX-V61



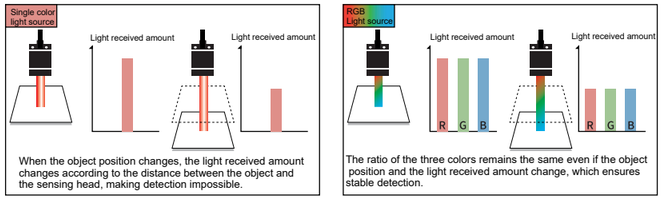
EX-C DUAL-DIGITAL COLOR DISPLAY OPTICAL FIBER AMPLIFIER

RGB light source that recognizes multiple kinds of targets

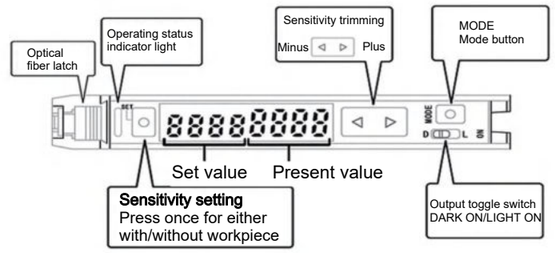
Light source advantage 1 Precise target identification

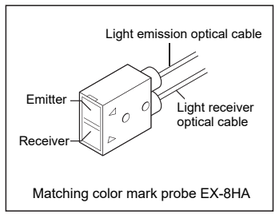


RGB light source advantage 2 Minimally affected by changes in object position



EX-C71





Matching color mark probe EX-8HA

EX-8HA

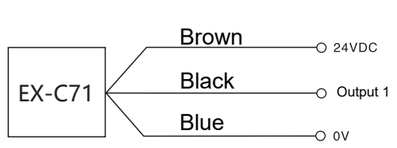
■ When detecting metal surfaces or smooth subject

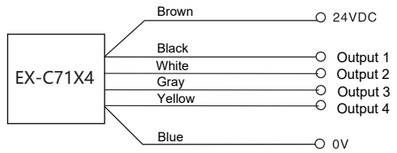
If the subject has a metal or smooth surface, tuning/recognition will fail. To detect such a subject , the sensing head should be tilted about 10-15 degrees.

Product description

NPN output	EX-C71	EX-C71X4
PNP output	EX-C71P	EX-C71X4-P
Control output	Single channel output Detects single color	Four-channel output to detect four groups of colors
Light source	RGB three-color, 4-element light emitting diode	
Response time	300μs(HSP)/1ms(FINE)	
Output selection	LIGHT-ON/DARK-ON (switch selection)	
Display indicator	Output: red LED Match rate/received light intensity: LED (red) Set value: LED (green)	Operating indication light: Dual 7-digit displays, light on from threshold and present values. Present Value range£”0-9999
Detection method	Light intensity (area detection available, automatic sensitive tracking function available)	
Time-delay function	Disconnect delay timer/start delay timer/single timer/start delay timer, selectable. The meter display is selectable in duration: 1ms to 9999ms	
Control output	PNP/NPN open collector: max. 40VDC (100mA max.) residual voltage: 1.0V max.	
Power supply	12 to 24V DC±10%, pulsation (P-P): Max. 10%	
Working environment brightness	Incandescent light: Max. 5000Lux daylight: Max. 10000Lux	
Power consumption	Standard mode: Max. 300mW Max. voltage: 24V	
Vibration resistance	10 to 55Hz, 1.5mm double amplitude in X, Y, Z directions, 2 hours each	
Ambient temperature	-10 to +55°C, non-icing	

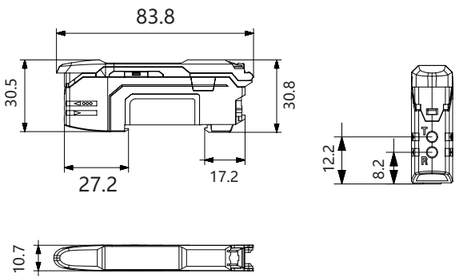
Wiring diagram



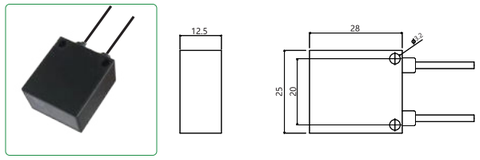


Product dimensions

EX-C71



EX-8HA



Optical fiber element

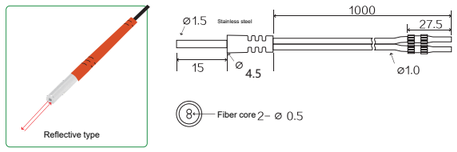
Selection rules

EX – L D 3 1 Q TZ S10

- Convex tube: none = no fine needle lead S10 = convex tube 10mm
- Optical fiber: none = plain TZ = coaxial N = right angle type
- Thread: none = threaded Q= unthreaded
- Wire length: 1=1M 2=2M
- Diameter: 1=φ1.5 2=φ2 3=M3 4=M4 A=area optical fiber
- Detection method: D=reflected T=through-beam
- Detection direction: none = forward L=side W=up F=front
- EX series optical fiber

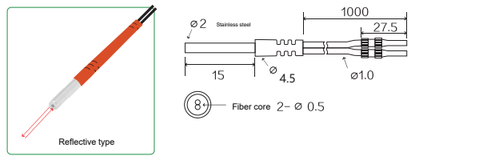
Reflective optical fiber

EX-D11Q



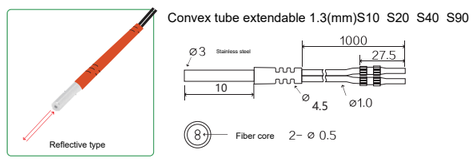
Detection distance	50
Detection accuracy	⌀ 0.05

EX-D21Q



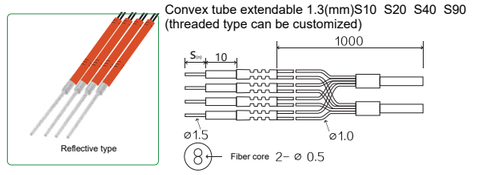
Detection distance	50
Detection accuracy	⌀ 0.05

EX-D31Q



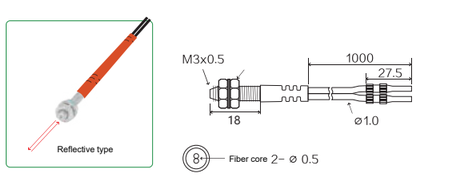
Detection distance	50
Detection accuracy	⌀ 0.05

EX-D31Q-n (all-in-one reflective optical fiber N = 2, 4, 6, 8, 10, 12)



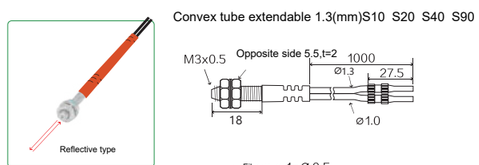
Detection distance	50
Detection accuracy	⌀ 0.05

EX-D31 (optional convex tube - 810, 820, S40 optional all-in-one optical fiber 2, 4, 6, 8, 10, 12)



Detection distance	50
Detection accuracy	⌀ 0.05

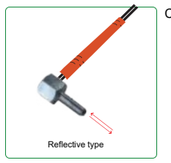
EX-D31TZ (optional convex tube - S10, S20, S40)



Detection distance	50
Detection accuracy	⌀ 0.05

Reflective optical fiber

EX-D31N



Detection distance	50
Detection accuracy	⌀ 0.05

EX-D31NTZ

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D41 (optional convex tube - S10, S20, S40)

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D41 (optional convex tube - S10, S20, S40 optional all-in-one optical fiber 2, 4, 6, 8, 10, 12)

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D41N

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D41NTZ

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D61

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D61TZ

Detection distance	50
Detection accuracy	⌀ 0.05

EX-D61N

Detection distance	50
Detection accuracy	⌀ 0.05

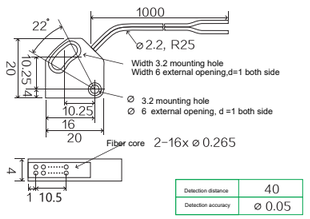
EX-D61NTZ

Detection distance	50
Detection accuracy	⌀ 0.05

Optical fiber element

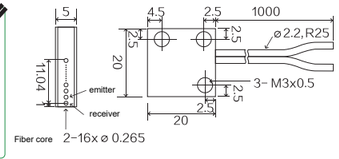
Reflective optical fiber

EX-WDA10



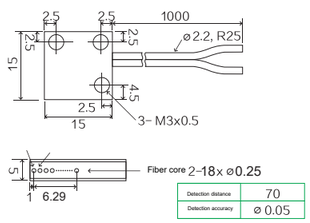
Detection distance	40
Detection accuracy	ø 0.05

EX-WDA20



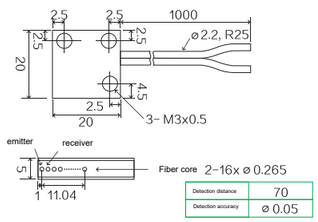
Detection distance	70
Detection accuracy	ø 0.05

EX-DA15



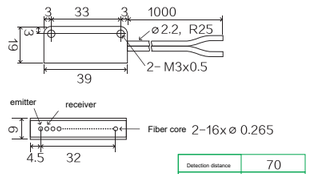
Detection distance	70
Detection accuracy	ø 0.05

EX-DA20



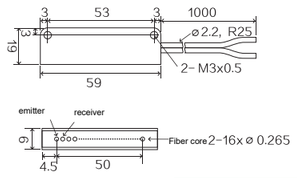
Detection distance	70
Detection accuracy	ø 0.05

EX-DA40



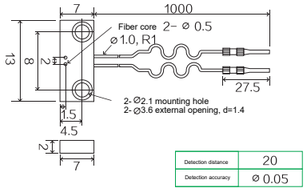
Detection distance	70
Detection accuracy	ø 4

EX-DA60



Detection distance	70
Detection accuracy	ø 10

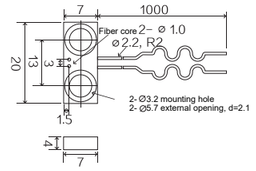
EX-FD41



Detection distance	20
Detection accuracy	ø 0.05

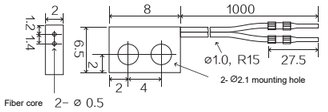
Reflective optical fiber

EX-FD42



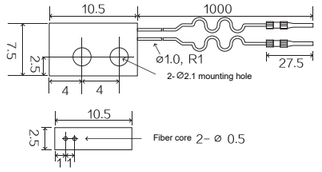
Detection distance	20
Detection accuracy	ø 0.05

EX-FD44



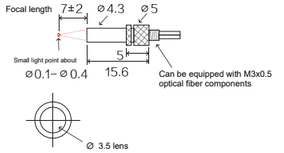
Detection distance	20
Detection accuracy	ø 0.05

EX-FD47



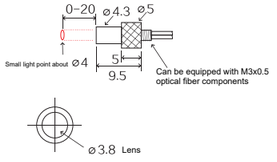
Detection distance	20
Detection accuracy	ø 0.05

EX-2HA (small light spot at 7mm)

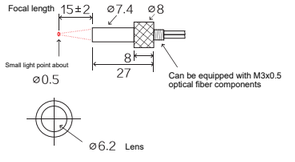


Small light spot at 3mm

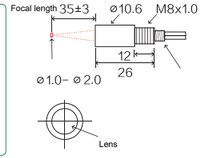
EX-3HA (parallel light spot)



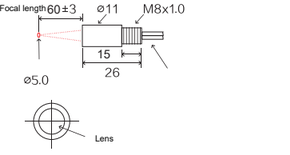
EX-4HA (small light spot at 15mm)



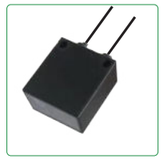
EX-6HA (small light spot at 35mm)

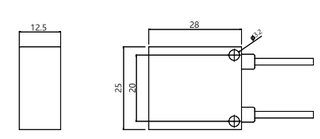


EX-7HA (small light spot at 60mm)

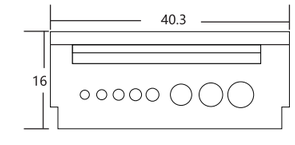


EX-8HA





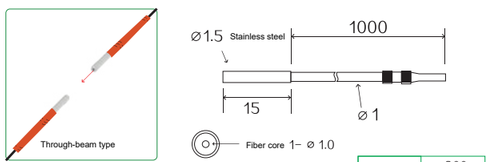
EX-KNF



Optical fiber element

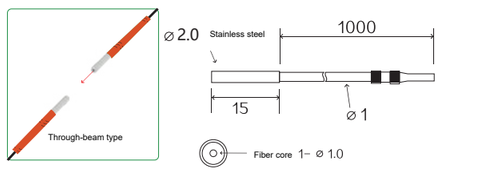
Through-beam optical fiber

EX-T11Q



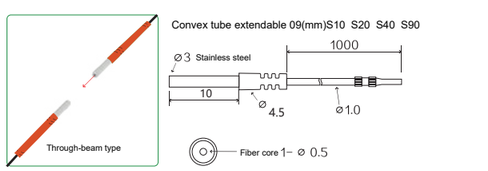
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T21Q



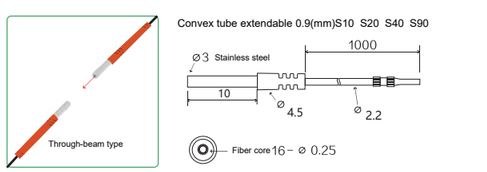
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T31Q



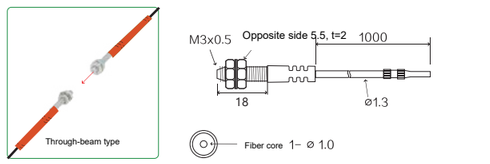
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T31QTZ



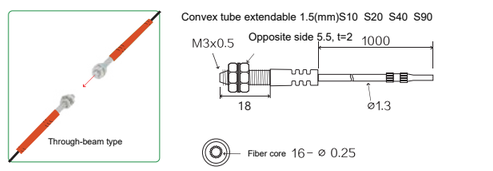
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T31



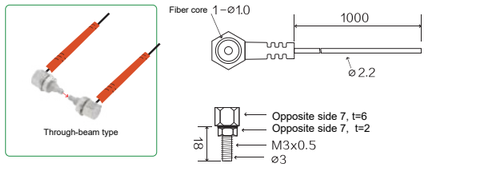
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T31TZ



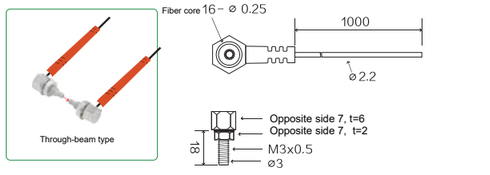
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T31N



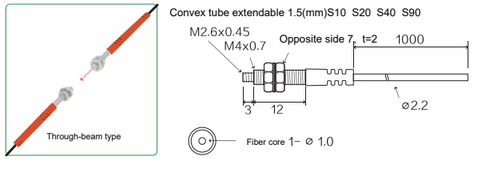
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T31NTZ



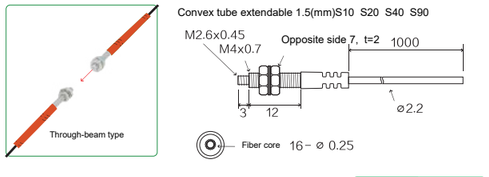
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T41



Detection distance	300
Detection accuracy	⌀ 0.05

EX-T41TZ



Detection distance	300
Detection accuracy	⌀ 0.05

Through-beam optical fiber

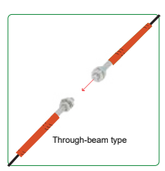
EX-T41N

Detection distance	300
Detection accuracy	⌀ 0.05

EX-T41NTZ

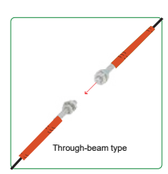
Detection distance	300
Detection accuracy	⌀ 0.05

EX-T61



Detection distance	300
Detection accuracy	⌀ 0.05

EX-T61TZ



Detection distance	300
Detection accuracy	⌀ 0.05

EX-T61N

Detection distance	300
Detection accuracy	⌀ 0.05

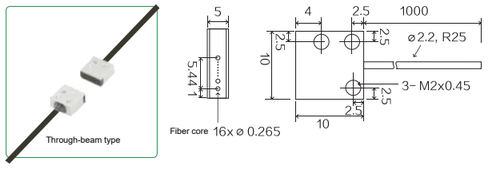
EX-T61NTZ

Detection distance	300
Detection accuracy	⌀ 0.05

Optical fiber element

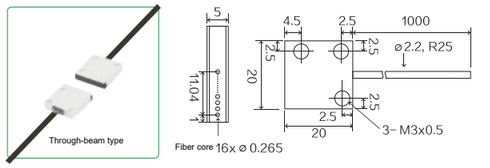
Through-beam optical fiber

EX-FTA10



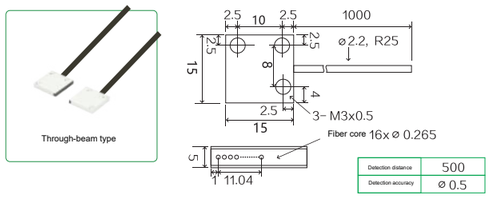
Detection distance	500
Detection accuracy	ø 0.1

EX-FTA20



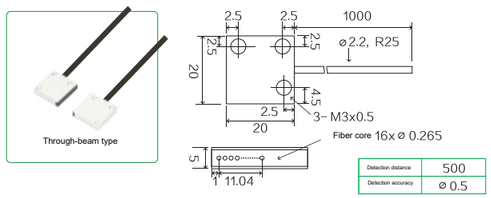
Detection distance	500
Detection accuracy	ø 0.5

EX-LTA15



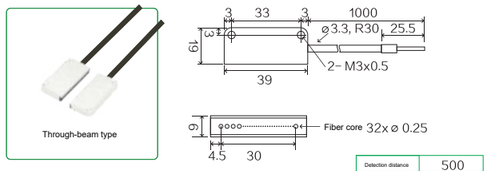
Detection distance	500
Detection accuracy	ø 0.5

EX-LTA20



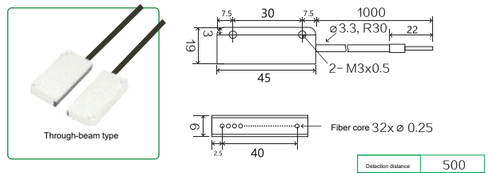
Detection distance	500
Detection accuracy	ø 0.5

EX-LTA40



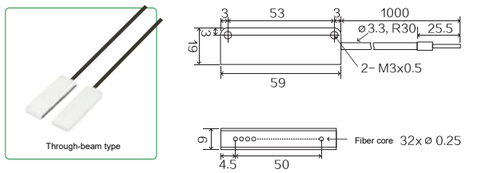
Detection distance	500
Detection accuracy	ø 3

EX-LTA45



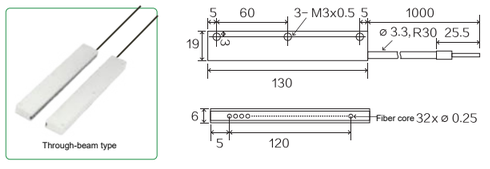
Detection distance	500
Detection accuracy	ø 3

EX-LTA60



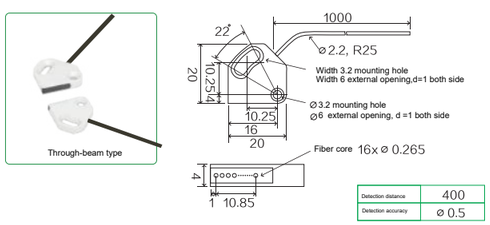
Detection distance	500
Detection accuracy	ø 5

EX-LTA130



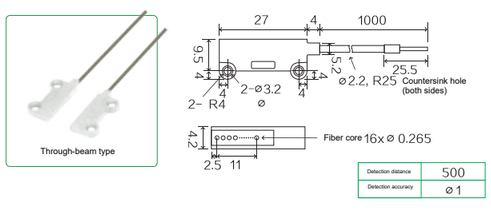
Detection distance	400
Detection accuracy	ø 5

EX-WTA10



Detection distance	400
Detection accuracy	ø 0.5

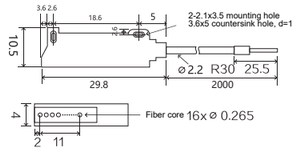
EX-LTE11



Detection distance	500
Detection accuracy	ø 1

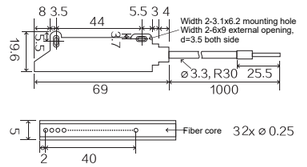
Through-beam optical fiber

EX-LTE11-H



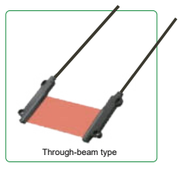
Detection distance	3000
Detection accuracy	Ø 1

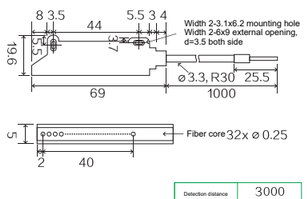
EX-LTE40



Detection distance	500
Detection accuracy	ø 1

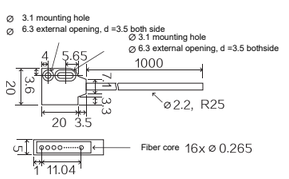
EX-LTE40-H





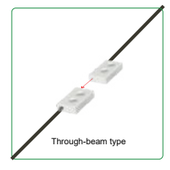
Detection distance	3000
Detection accuracy	Ø 1

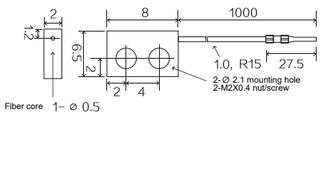
EX-LT12



Detection distance	300
Detection accuracy	ø 1

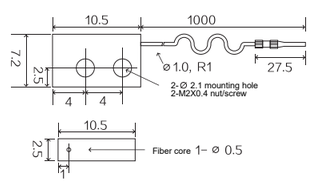
EX-FT44





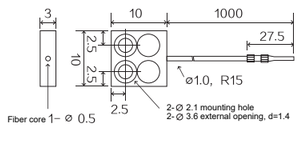
Detection distance	300
Detection accuracy	ø 0.05

EX-LT47



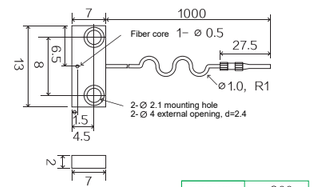
Detection distance	300
Detection accuracy	ø 0.05

EX-FT51



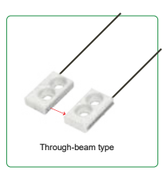
Detection distance	300
Detection accuracy	ø 0.05

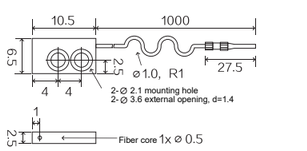
EX-LT53



Detection distance	300
Detection accuracy	ø 0.05

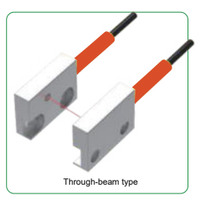
EX-LT57

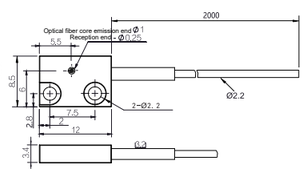




Detection distance	300
Detection accuracy	ø 0.05

EX-FT12





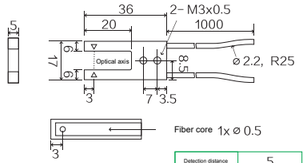
Min. bending radius: R15
Detection distance: 120mm
Min. detectable object size: φ 0.1mm

Detection distance	300
Detection accuracy	ø 0.05

Optical fiber element

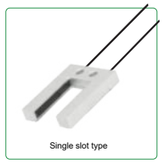
Slotted optical fiber

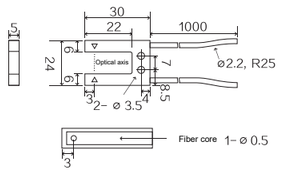
EX-UT0520



Detection distance	5
Detection accuracy	ø 0.2

EX-UT1220

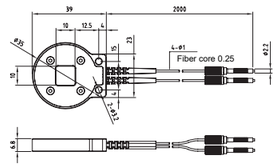




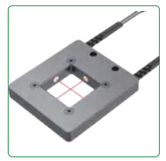
Detection distance	12
Detection accuracy	ø 0.2

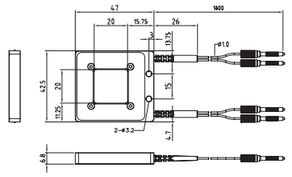
Cross-aligned optical fiber

EX-S4010



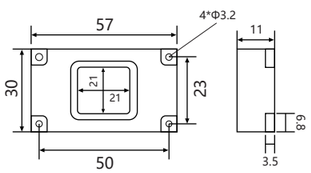
EX-Q4520



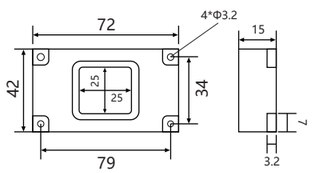


Window optical fiber

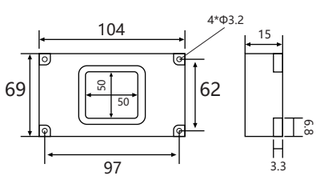
EX-C2121



EX-C2525

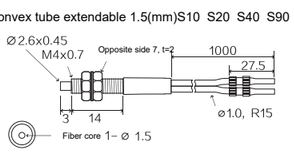


EX-C5050



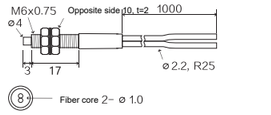
High temperature optical fiber Max. temperature 350¡

EX-D41HT



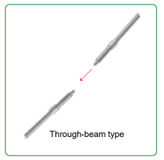
Detection distance	50
Detection accuracy	ø 0.05

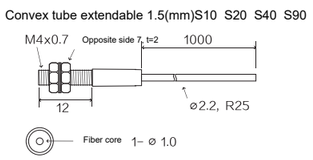
EX-D61HT



Detection distance	50
Detection accuracy	ø 0.05

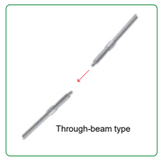
EX-T41HT

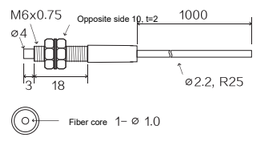




Detection distance	300
Detection accuracy	ø 0.05

EX-T61HT

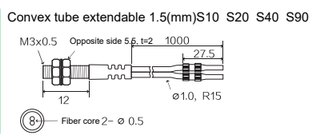




Detection distance	300
Detection accuracy	ø 0.05

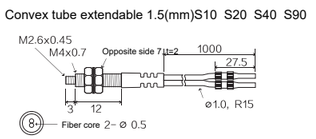
High-flexibility optical fiber

EX-D31GR



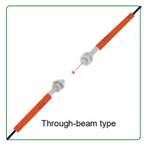
Detection distance	50
Detection accuracy	ø 0.05

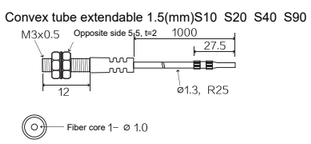
EX-D41GR



Detection distance	50
Detection accuracy	ø 0.05

EX-T31GR

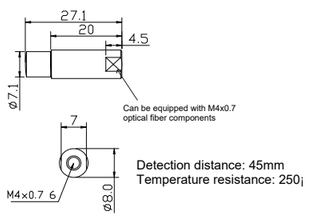




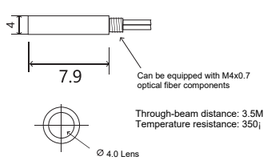
Detection distance	300
Detection accuracy	ø 0.05

High temperature lens

EX-D4RHT



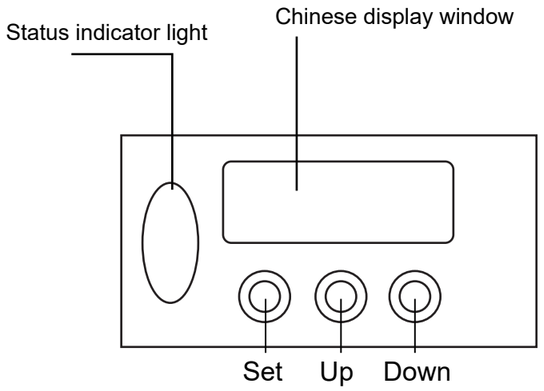
EX-T4SHT



MD LASER DISPLACEMENT SENSOR

Names of components

Repeat accuracy 0.01mm of stable detection
Higher measurement accuracy ±0.1%
Ultra-fast response time max. 1.5ms
Various output modes, pure I/O type/analog type/RS-485



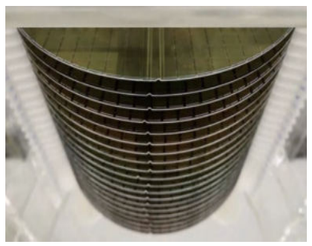
Instruction

● Product surface flatness detection

● Dispensing volume detection

● Chip presence detection

● Wafer stack detection

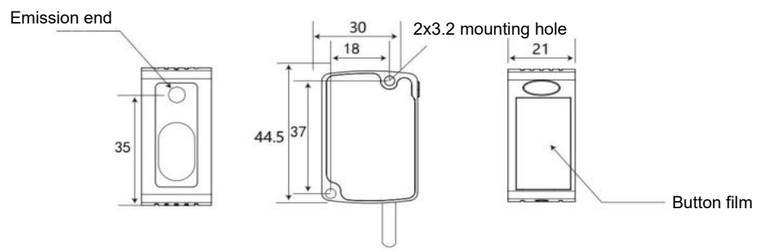


Item \ Model	Category	Micro laser displacement sensor					
		30mm type	50mm type	100mm type	200mm type	400mm type	600mm type
	NPN/PNP + analog MA/V + RS-485	MD-LS030	MD-LS050	MD-LS100	MD-LS200	MD-LS400	MD-LS600
Measurement center distance		30mm	50mm	100mm	200mm	400mm	475mm
Measurement range		±5mm	±15mm	±35mm	±80mm	±200mm	60-950mm
Repeated accuracy		10um	30um	70um	200um	300um (200~400)mm 800um (400~600)mm	600um
Measurement accuracy		±0.1%F.S			±0.2%F.S.	±0.2%F.S. (160~400)mm ±0.3%F.S. (400~600)mm	±0.3%F.S
Response frequency		1.5Ms/5ms/15ms switchable					
Light source		Red laser (655nm)					
Light point diameter		φ100um	φ100um	φ200um	φ500um	φ1mm	
Power supply voltage		12V~24V Dc^ 10%/ pulsation P-P 10% or below					
Light source power		<1W					
Output		Transistor output: NPN/PNP settable Analog output: 0V~5V, OV~10V, 4mA 20mA Communication output: RS-485					
Output action		ON when light-input/ON when no light-input, switchable					
Short circuit protection		Equipped					
Ambient resistance	Protection structure	IP67					
	Operating temperature	-10¡ ~+50¡ (caution: no condensation or icing)					
	Ambient temperature	-20¡ ~+60¡					
	Ambient humidity	35%RH~85%RH					
	Ambient luminance	Incandescent light: lighted surface luminance 3000lux or below					
	Voltage-resistant	1000V/AC/50Hz/60Hz 60s					
	Insulation resistance	¡ 50MΩ(500V DC)					
	Vibration resistant	Frequency 10~50Hz ·Double amplitude 15mm 2 hours in each direction of XYZ (when not energized)					
	Impact resistance	Acceleration 500m/s2 (approx. 50G) 3 times in each direction of XYZ (when not energized)					
Material		Housing: die-cast zinc Window: glass					
Link method		2m cable					

(Note 1) Unspecified measurement conditions are those where the ambient temperature is equal to +23. (Note 2) This product is a laser product, power up and preheat for ten minutes before use.

Dimension diagram (unit: mm)

MD-LS030/050/100/200/400

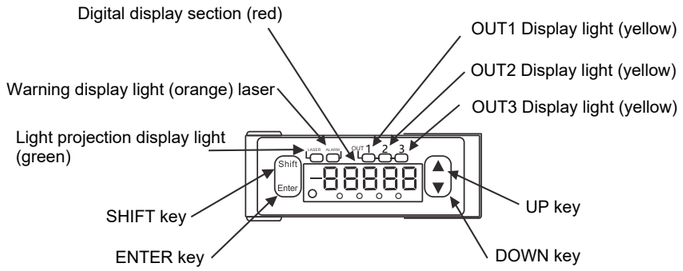


MD SERIES HIGH PRECISION LASER DISPLACEMENT SERIES

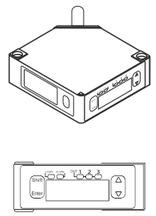
Names of components

Highly precision and stable detection, accuracy up to 0.002mm

Wide measurement range, switching, analog, communication and other output modes can be selected, suitable for more application scenarios



Category

Shape	Measuring center distance and measuring range	Resolution	Light beam diameter	Model
	30±4mm	0.5μm	0.1X1mm	MD-HL030
	50±10mm	1.5μm	0.5X1mm	MD-HL050
	85±20mm	2.5μm	0.75X1.25mm	MD-HL085
	120±60mm	8μm	1.0X1.5mm	MD-HL120
	250±150mm	20μm	1.75X3.5mm	MD-HL250

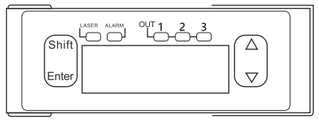
Wiring diagram

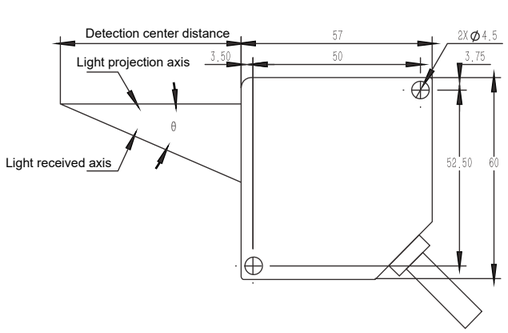
	Name	Function	Wire color	
Analog output wire	A(V)	Analog voltage output	1 core shielding	Black
	AGND	Grounding for analog		
	A(I)	Analog current output	1 core shielding	Gray
	AGND	Grounding for analog		
Input/output wire	OUT1	Judgment output 1	Black	
	OUT2	Judgment output 2	White	
	OUT3	Judgment output 3 or warning output	Gray	
	TM	Timed input	Pink	
	MI	Zeroing, reset, memory switching, demonstration, saving, each input of laser control	Purple	
	NP	NPN type/PNP type switching inputs	Pink/blue or purple*1	
	+SD	Send data	Twisted Pair	Green
	-SD	Send data		Light blue
	+RD	Receive data	Twisted Pair	Orange
	-RD	Receive data		Yellow
	SG	Grounding for signal	Shielded	
	+V	DC 24V input for power supply	Brown	
	oV	Grounding for power supply	Blue	

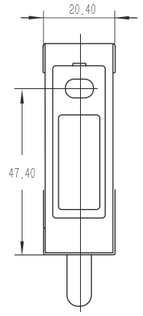
Product parameters

Product Model	MD-HL030	MD-HL050	MD-HL085	MD-HL120	MD-HL250
Measuring method	Diffuse reflective				
Measuring center distance	30mm	50mm	85mm	120mm	250mm
Measuring range	±4mm	±10mm	±20mm	±60mm	+150mm
Light source	Red semiconductor laser level 1 (JIS/EC/GB/KS/FDALaserNoticeNo.50/GB)				
	Max. output: 0.39mW, peak wavelength of light projection: 655nm				
Light beam diameter	0.1×0.1mm	0.5×1mm	0.75×1.25mm	1.0×1.5mm	1.75×3.5mm
(Note 2)	0.1×1mm				
Light received section	CMOS image sensor				
Resolution	0.5μm	1.5μm	2.5μm	8μm	20μm
Linearity	±0.1%F.S.				±0.3%F.S.
Temperature characteristics	±0.08%F.S./C				
	24V DC±10% including pulsation 0.5V(p-p)				
Current consumption	100mA or below				
Sampling period	500μs¡ç1ms¡ç2ms				
Voltage	Output range: 0~10.5V (normal), 11V (warning) output impedance: 100Ω				
Analog output current	Output range: 3.2~20.8mA (normal), 21.6mA (warning) Load impedance: 300Ω or below				
OUT1 OutputOUT2 OutputOUT3 Output	Judgment output or warning output (set switching type)NPN transistor open collector/PNP transistor collector parallel (switching type)				
	<When NPN action setting> ¡æResidual voltage: 2V or less (when inflow current is 50mA) ¡æLeakage current: 0.1mA or below		<When PNP action setting> ¡æMax. output current: 50mA ¡æResidual voltage: 2.8V or less (when outflow current is 50mA) ¡æLeakage current: 0.1mA or below		
Output action	Open when ON (output action)				
Short circuit protection	Equipped (auto-recovery)				
NP switching input	When OV connection: NPN open collector output action				
	When power supply 24V DC connection: PNP open collector output action				
Timed input	When PNP action is setting: when external power supply + is connected or when an action in connection is set (varies depending on setting).				
Multi-way input	Zeroing, reset, memory switching, demonstration, save, laser control according to input time				
	When NPN action setting: based on the time of connecting to 0V				
	When PNP action setting: based on the time of connecting to the external power supply+				
Communication interface (high-function type)	RS-422 or RS-485				
	Baud rate: 9,600/19,200/38,400/115,200bps				
	Data length 8bit, end bit length 1bit, no parity check, with BCC, data differentiation: CR				
Indicator light — Laser / Light projection	Lights on when green light-emitting diode laser projection				
Warning	Orange light-emitting diode with insufficient light amount makes it impossible to measure				
Output	Yellow light-emitting diode (number of display lights: 3) light on when output action				
Digital display section	Red light emitting diode symbol and 5-digit display				
Protection structure	IP67 (except connector section)				
Contamination degree	2				
Insulation resistance	20MΩ or above at DC 250V Megger (between all terminals - housing)				
Voltage-resistant	AC 1,000V for 1 minute (between all terminals and housing)				
Vibration resistant	Endurance frequency: 10~55Hz (cycle 1 minute) double amplitude: 1.5mm 2 hours in each direction of X, Y, Z				
Impact resistance	500m/s² 3 times in each direction of X, Y, Z				
Surrounding luminance (Note 3)	3,000Ex or below (lighted surface luminance at incandescent light)				
Surrounding humidity	-10~+45°C (caution: no condensation or icing) in storage: -20~+60°C				
Ambient humidity	35~85%RH in storage: 35~85%RH				
Service height	2,000m or below				
Material	Body housing: PBT, front cover: acrylic, cable: PVC				
Cable	0.5M				

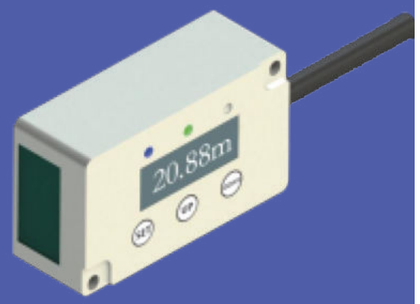
Dimension diagram (unit: mm)







MD LONG DISTANCE LASER SENSOR



Characteristics

- Short, medium and long ranges available
- Supports NPN/PNP switchable
- Supports 485 communication
- OLED Chinese digital display, clear and concise
- All-metal housing for rugged durability
- Small size, small light spot, high precision

Menu description:

Under the main menu of the menu setting interface, press and hold “ SET” for more than three seconds to exit the menu setting interface and save the parameter settings.

Note: Long press to exit operation is not available in the sub-menu of the menu settings interface

After entering the menu setting mode, press the “ UP” key or “ DOWN ” key to switch the menu up or down.

Press the “ SET” key briefly to enter the corresponding menu item.

Working mode: can be switched in standard mode, high-speed mode, high-precision mode

Normally open status: in normal detection mode, the output turns on when the received light intensity is greater than the threshold value; in area detection mode, the output turns on when the received light intensity is within the upper/lower threshold value.Normally close status : normally in detection mode, the output turns on when the received light intensity is less than the threshold value; area detection

Address: as the address code for 485 communication, can be set in the range of 1~100

Selection of outputs: High level (PNP) Low level (NPN)

Reset: initialize the device and changes all parameter settings to default values

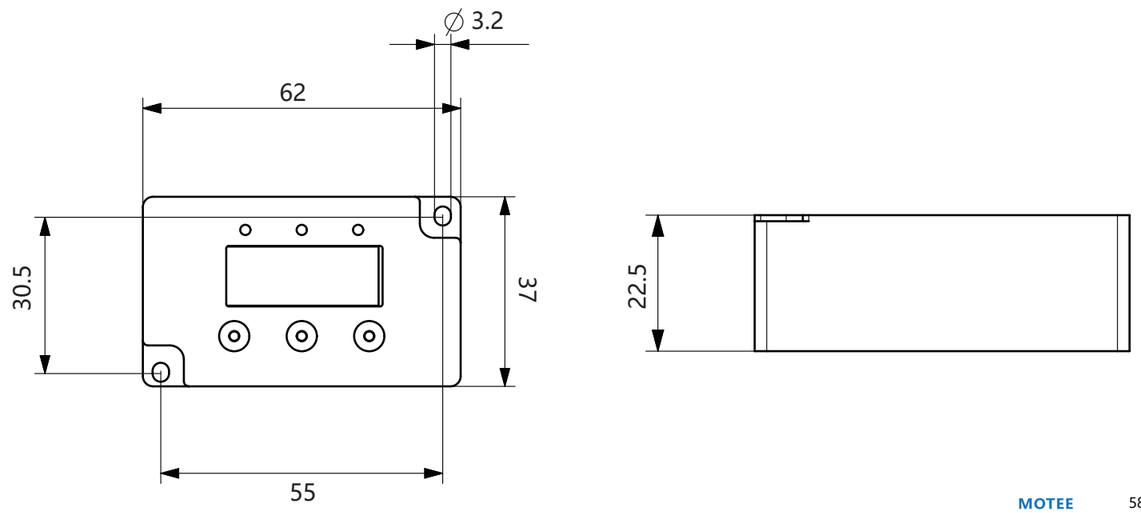
Wiring diagram

Cable number	Function	Outgoing wire core color
1	NPN/PNP	Black
2	Power supply positive	Brown
3	Power supply negative	Blue
4	485A	Yellow
5	485B	Green
6	External input	White

Product parameters

Category	Switching communication type	Switching communication type	Switching communication type	Switching communication type
Model	MD-LG05	MD-LG10	MD-LG20	MD-LG40
Detection range	30mm-5M	30mm-10M	30mm-20M	30mm-40M
Repeated accuracy	±1.5mm	±1.5mm	±2mm	±2.5mm
Output category	NPN output/PNP selectable			
Output method	Dual switching, RS485 Answer type digital quantity			
Communication method	RS485 (supports multi-site output)			
Light beam diameter	Approx. 5mm			
Power supply voltage	12V-24V DC±10% pulsation P-P10%			
Current consumption	100mA or below			
Light source	Red semiconductor laser class 2, Max. output: 1mW, light beam wavelength: 620-650mm			
Short circuit protection	Equipped (auto-recovery type)			
Response frequency	5-20HZ			
Protection structure	IP65(IEC)			
Service ambient temperature	-10°c-+40°c (caution: no condensation or freezing)			
Service ambient humidity	35%-85%RH (no condensation)			
Service ambient luminance	Incandescent light: lighted surface luminance 3,000lx or below			
Cable	Outer diameter 5mm 6-core composite cable 2m/cable length can be customized			
Material	Body housing: aluminum casting part			
Weight	Approx. 35g (without cable) Approx. 85g (with cable)			
Product Size	62*37*23mm			
Applicable specifications	Complies with MC command			

Dimension diagram (unit: mm)

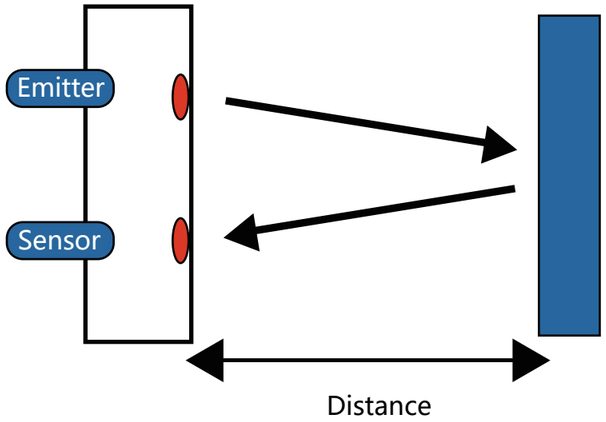


MD TOF LONG DISTANCE LASER SENSOR

Characteristics

TOF (Time-of-Flight), laser distance sensors work on the principle of time-of-flight based ranging technology by emitting laser pulses of a specific wavelength and measuring the time it takes for the pulses to be emitted and reflected back to the sensor, so that the distance can be calculated by measuring the time-of-flight of the pulses.

Currently there are two main algorithms for industrial use, one is pulsed ranging (dTOF) and the other is phase difference ranging (iTOF). Pulsed ranging (dTOF) directly measuring the time-of-flight difference between the emission and reception of light pulses to calculate the distance, relatively easy for circuit implementation, fast measurement frequency, accuracy of about 2-3mm

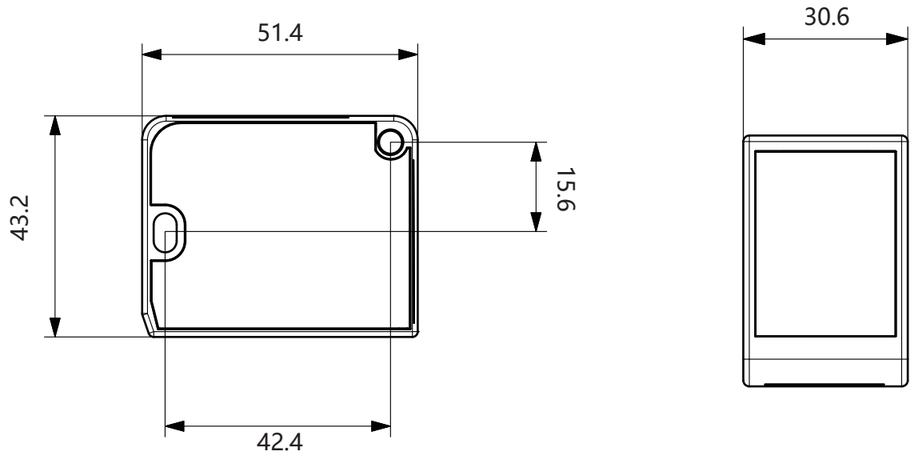


Distance L = Measured Distance = Time T/2 = Photon Travel Time/2 X Speed of light = Speed of light

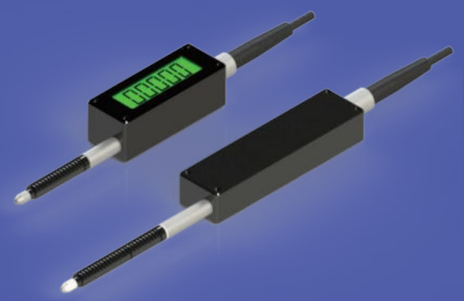
Product parameters

Category / Model	MD-LTB2000	MD-LTB5000
Detection range	30-2000	30-5000
Repeated accuracy	2mm	2mm
Output category	NPN output/PNP selectable	
Output method	Dual switching, RS485Answer type digital quantity	
Communication method	RS485 (supports multi-site output)	
Light beam diameter	Approx. 5mm	
Power supply voltage	12V-24V DC±10% pulsation P-P10%	
Current consumption	100mA or below	
Light source	Red semiconductor laser class 2, Max. output: 1mW, light beam wavelength: 620-650mm	
Short circuit protection	Equipped (auto-recovery type)	
Response frequency	20-1000HZ	
Protection structure	IP65(IEC)	
Service ambient temperature	-10°c-+40°c (caution: no condensation or freezing)	
Service ambient humidity	35%-85%RH (no condensation)	
Service ambient luminance	Incandescent light: lighted surface luminance 3,000lx or below	
Cable	Outer diameter 5mm 6-core composite cable 2m/cable length can be customized	
Material	Body housing: aluminum casting part	
Weight	Approx. 35g (without cable) Approx. 85g (with cable)	
Product Size	62*37*23mm	
Applicable specifications	Complies with MC command	

Dimension diagram (unit: mm)



MD GRATING DISPLACEMENT SENSOR

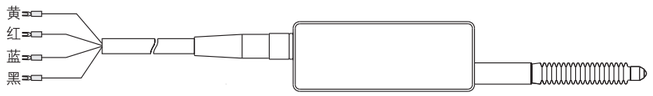


Grating displacement sensor

Product

10 million times rebound test
RS485 communication output, accuracy up to 0.002mm
CMOS Grating measurement principle
High-speed readout via CMOS sensor resolves temperature and tracking errors

Wiring diagram



(0-12.7mm) Lead wire type

RS485 Lead wire type	
Pin number	Function
Blue	B
Black	A
Yellow	DC5V (power supply)
Red	GND (ground)

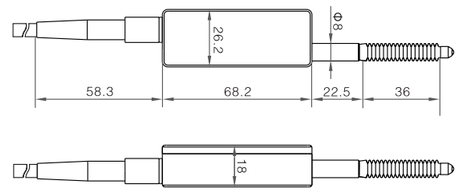
Product parameters

Product name	Model	Measurement range (mm)	Whole process accuracy	Resolution	Waterproof grade
Standard grating displacement sensor	MD-LV1050	0-12.7	¡ 10μm	5μm	IP65
	MD-LV1010		±2μm	1μm	
	MD-LV1005		¡ 2μm	0.5μm	
Digital display grating displacement sensor	MD-LV1050D		¡ 10μm	5μm	
	MD-LV1010D		±2μm	1μm	
	MD-LV1002D		¡ 1.4μm	0.2μm	

Detection system	Grating measurement system, image sensor
Operating voltage	DC5V
Operating current	<50mA
Data update speed	50ms
Lead wire length	2m

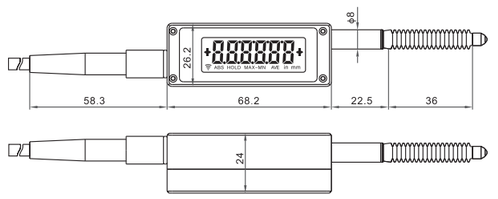
Dimension diagram

MD-LV1050/1010/1005/1002



0–12.7mm

MD-LV1050D/1010D/1005D/1002D

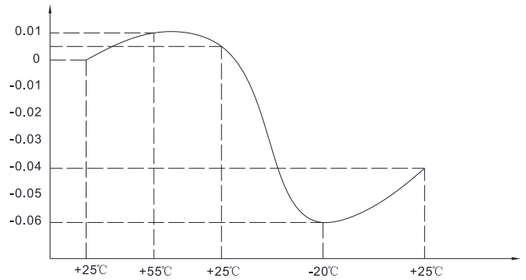


0–12.7mm

MD
CONTACT SENSOR

Product

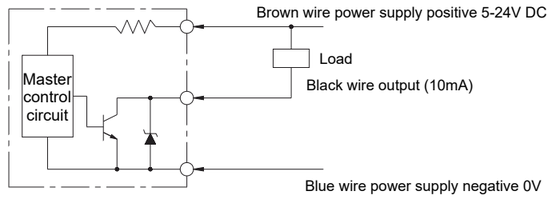
High and low temp. change test curve



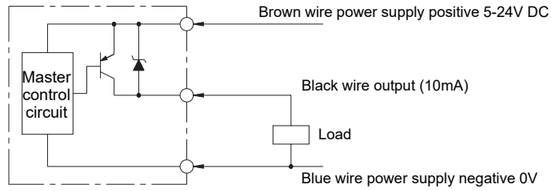
This product is only a general object detection sensor, please do not use for security detection

Wiring diagram

NPN output



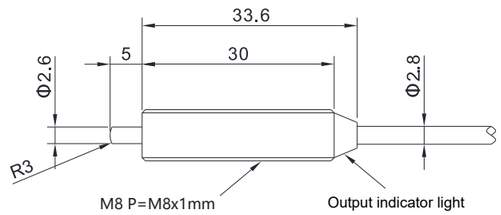
PNP output



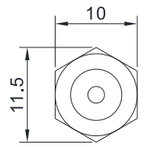
Product parameters

Model	MD-LV83BN	MD-LV83BP
Output	NPN.NO	PNP.NO
Operating voltage	5~24VDC	
Connection method	3-core cable diameter 2.8mm; cable length 3 meters	
Position repeated accuracy	±0.001mm	
Travel	3mm	
Operating force	0.6 N	
Moving PT before action	0.5~0.9 mm	
Hysteresis MD	0.1mm or below	
Action frequency	120 times/min	
Output current	10mA	
Current consumption	¡ 10mA	
Indicator light	Light on at output	
Pressure resistant strength	AC 1000V for 1 min	
Insulation strength	250V DC¡ 20MΩ	
Ambient temperature/humidity	20¡ ~+85¡ (non-freezing) 20%~95%RH (no condensation)	
Installation	M8 nut mounting torque 5N·m	
Protection level	IP67	

Wiring diagram



Unit:mm



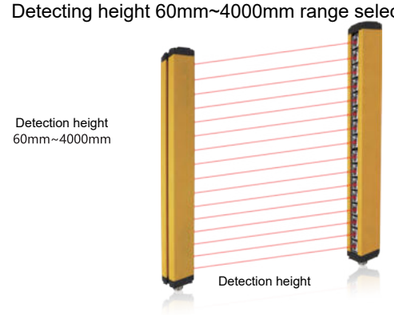
Nut thickness 2.5mm

SAFETY SENSOR

- **Fully certified:**
  All series of safety light grating, safety relay, safety door lock, door magnetic switch products, in line with the national CNAS unified certification standards, obtained ISO9100 quality management system certification, with CE, PLe, Pld, REACH, EMC, ROHS, FCC and other certifications and test reports.
- **CPU self-inspect:**
  Grating using the CPU self-inspection, when the grating itself has a fault (such as : light source is not synchronized, light source intensity is not enough, the light projection drive circuit error, the master control circuit error, cable problems, as well as receiving drive circuit error, the master control circuit error, CPU error), the grating can ensure that not to send an error signal to the controlled equipment, to ensure the grating safety.
- **Dual independent OSSD output:**
  In terms of outputs, in pursuit of better safety, dual independent redundant outputs are adopted to provide a high level of safety against automatic failures, and can directly drive safety relays and safety PLCs.
- **External relay contact bonding protection (EDM) function:**
  When the output signals of the grating need to be connected to the customer's common relay/contactor equipment, in order to ensure the safety of the entire system, the safety grating is equipped with an EDM function to monitor the " external relay contact status" , preventing the loss of safety protection function due to the failure of the external relay bonding.
- **Strong anti-interference ability:**
  Adopts infrared communication and special optical system, with strong anti-interference ability (good anti-interference ability to electromagnetic signal, strobe light, welding arc light and surrounding light source).
- **More responsive:**
  All the grating products of this series have a response time within 5ms; Overload and short circuit protection: When the safety grating output is overloaded or short -circuited, the grating will enter a protective status, and the grating safety system will be shut down; Self-detection: Self-detection is carried out within 2 seconds of the power supply being switched on to make sure that there are no faults in the grating itself.
- **Power-up delay function:**
  After 3 seconds of power-up, the grating can make the equipment work normally, which can give the operator and the equipment a buffer time to improve the safety of the equipment and personnel.
- **With shielding (floating/fixed blanking) function:**
  Customizable automatic shielding and set shielding functions greatly enhance the use of various on-site environments.
- **Optical synchronization technology:**
  Unique optical synchronization technology replaces the traditional data line synchronization, to avoid signal interference, while eliminating the need for longer data line connections.
- **Ultra-high detection accuracy:**
  Standard products provide hardware accuracy of 2mm, software cross algorithm accuracy of 1mm, to realize high-end demand of the safety grating such as small pitch, long distance, high accuracy, long size.

Equipped with a wide range of detection heights

Detecting height 60mm~4000mm range selection



Multiple detection types

There are 3 types commonly used depending on the size of the smallest detected object.

For finger detection
Min. detected object φ15mm
(optical axis pitch of 10mm)

10mm

For palm detection
Min. detected object φ25mm
(optical axis pitch of 20mm)

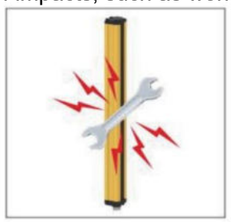
20mm

For arm detection
Min. detected object φ45mm
(optical axis pitch of 40mm)

40mm

Impact-resistant, thick-walled, rugged housing

The product has a rugged metal housing, which reliably protects it from all kinds of impacts, such as workpiece collision and stepped on.



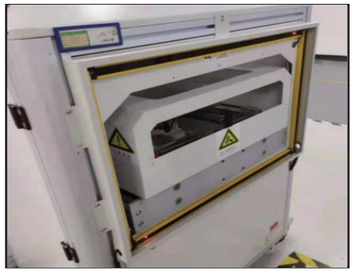
Crash, knock

Tead

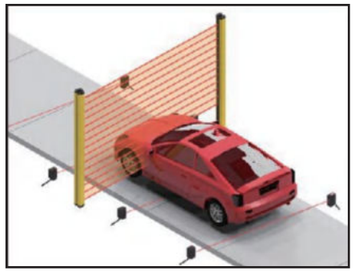
Fall

Application scenario

Detection of production line movement section protection



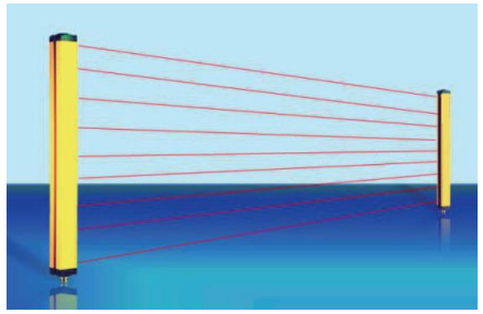
Automated operational protective detection



Assembly line safety protective detection

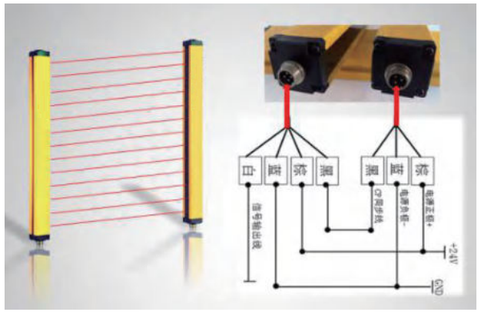
Application scenario

Easy beam-focusig, ultra-long through-beam



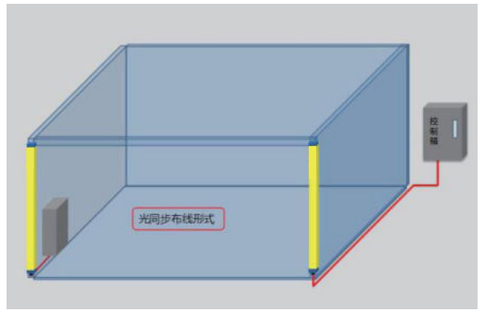
Grating infrared receiving ability is stronger, beam-focusing deviation of 5 degrees can be easily aligned to signal, the farthest distance between the emitter and receiver can be up to 30 meters.

Simple wiring



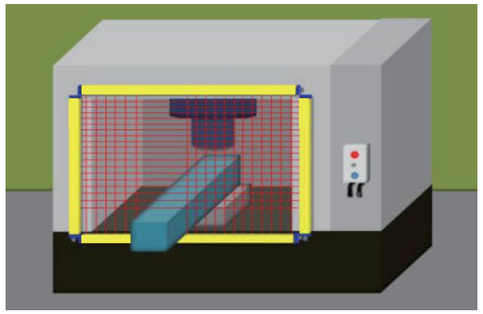
The encoder is developed using the latest technology of phase pulse technology, which has simplified the complexity of wiring, and at the same time achieves the function of simple wiring and stable performance.

Optical synchronization, line synchronization



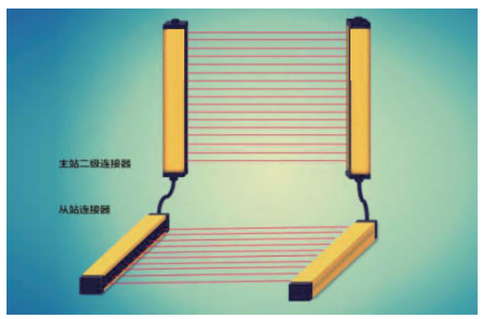
Optical synchronization technology adopts advanced optical principles, which can eliminate the synchronization line between the emitter and receiver, and at the same time, it can be independently accessed to the power supply, so the on-site wiring will be more simple and shorten the operation inspection time.
Main applications: Suitable for all types of machinery and equipment.

Fixed/floating blanking



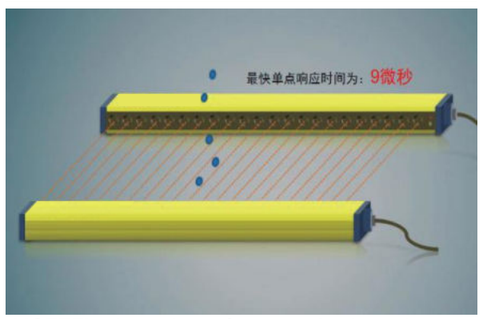
Settable light curtain blind area, integrated time monitoring shielding function, used to make the light curtain temporarily into the shielding state, such as: when the workpiece passing through the protected area, it does not affect the normal operation but play a protective role.
Main applications: Equipment where the workpiece is out of the mold range.

Cascade connection



Master-slave mode consisting of multiple sets of gratings connected in series

Fast response speed



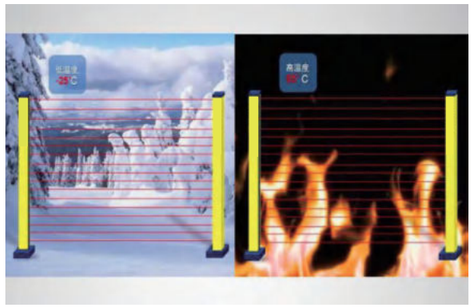
MOTEE's pioneering ¡ fast¡– grating is not just a little faster, but has a high speed response, with a single-point response time of up to 9 microseconds, which is one of the highest speed grating products on the market at present, and allows for the effective detection/measurement of high-speed moving objects, demonstrating the advantages of fast and reliable detection.

Application scenario

Ultra-strong electromagnetic interference, light interference resistant ability

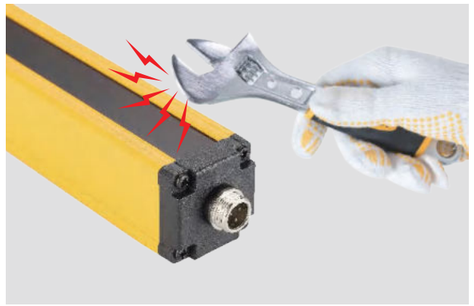
Products adopt the latest anti-interference circuit design from the core, fundamentally solve the problem of interference, for high and low frequency converter, strobe light, welding arc light and peripheral light source has good anti-interference ability.

Operating temperature -25~65¡



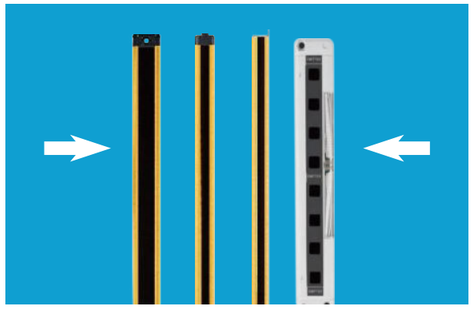
MOTEE full series of grating components are imported, low temperature resistance of -25 degrees, high temperature resistance of 65 degrees, according to different working environment to take different components, so as to meet the requirements of different working environments.

Reinforced collision resistance



Reinforced and thickened grating housing, solid structure, strong vibration resistance, collision resistance, powerful functions, complete self-inspection, easy to use, easy to install. Main applications: for high-speed punching machines, large tonnage press machines and other large equipment.

Adapts to narrow spaces



Ultra-thin series products have the industry's smallest size, a variety of outline options, front light output, side light output, to meet the demanding installation, powerful functions, complete self-inspection, easy to use, truly no blind areas.

Waterproof level up to IP69

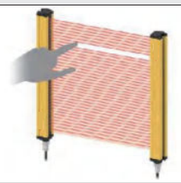
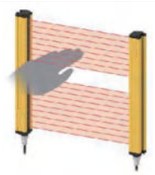
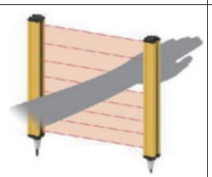
The waterproof grating is IP69 rated and has been proven in the market to work stably in water depths of up to 3 meters.

Non-standard customization

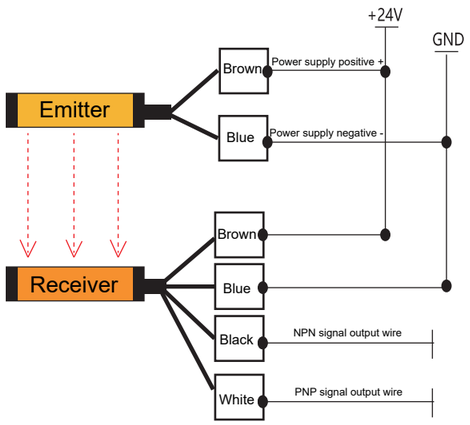
Non-standard customized grating / light curtain is a major advantage of our company, from the customized appearance to the core customization, we have many years of experience, according to customer requirements, there are non-standard products: arc light curtain, T-shaped light curtain, V-shaped light curtain, round light curtain, etc. Main applications: machinery and equipment that can't be installed with ordinary light curtains in general.

Safety light curtain sensor

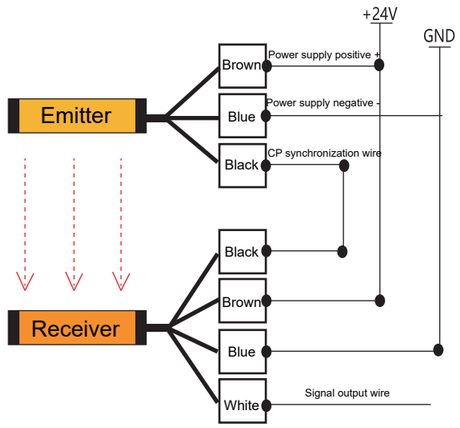
Category

Shape	Application	Optical axis pitch	Series
	When reaching the hazard source in close proximity Detection object φ15mm (finger detection) 	5mm	MT□□05
		10mm	MT□□10
	Most common standard type Detection object φ25mm (palm detection) 	20mm	MT□□20
	When the distance to the hazard source is long Detection object φ45mm (arm, foot, body detection) 	40mm	MT□□40

Product wiring statement



Optical synchronization

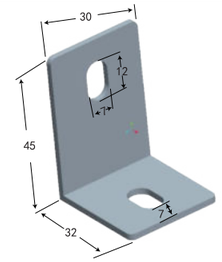


Line synchronization

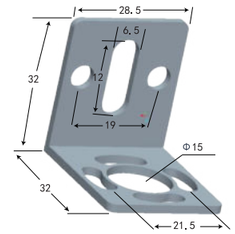
Technical parameters

Product series	MTS	MTC	MTF	MTP	MTL	MTE	MTG
Product characteristics / Cross section dimension	Common type 29X30	Compact type 21X25	Front ultra-thin 13X28	Plastic housing 13X30	Side ultra-thin 16X29	Type 4 no blind area 30X30	Enhanced type 35X35
Optical characteristics							
Optical axis pitch	1mm/2mm/5mm/10mm/20mm/40mm			20mm	10mm/20mm/40mm		
Number of optical axis	4, 6, 8, 10, ...256						
Protection height	Optical axis pitch X (number of optical axis-1)						
Protection width	0.2-7m		0.2-3m			0.2-6m	0.2-30m
Electronic characteristics							
Power supply voltage	24V±10%						
Net power	3~8W						
Response time	¡ 10ms						
Insulation resistance	¡ 100MΩ						
Signal output	NPN, PNP, relay			NPN, PNP			
Operating temperature	-10¡ ~+55¡						
Storage temperature	-40¡ ~+70¡						
Operating humidity	35%RH~85%RH						
Light interference resistant	10000Lux						
Light curtain form	Default optical synchronization, optional line synchronization					Default line synchronization (5M or more optical synchronization)	
Protection level	IP65						
Product certification	CE/FCC/EMC/REACH/SIL3/TYPE 4						
Circuit protection	Reverse-connection protection/output short circuit protection						
Standard wiring	Pigtail aviation plug	Direct outgoing wire 2 meters	?Pigtail aviation plug	Direct outgoing wire 2 meters	Pigtail aviation plug		Direct aviation plug

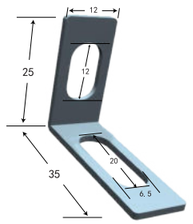
Product installation instruction



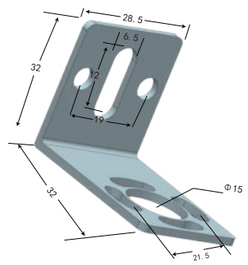
L-type side mounting bracket



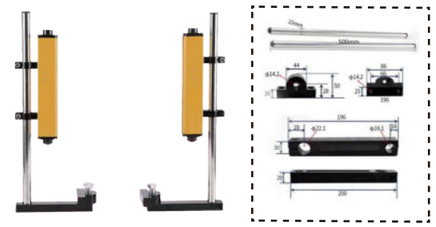
Upper and lower mounting brackets



MTC mounting bracket



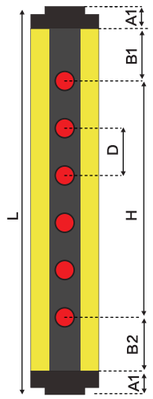
Waterproof light curtain upper and lower bracket

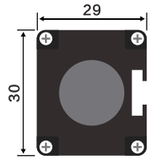


Movable bracket mounting diagram

MTS STANDARD SAFETY GRATING

Dimension diagram





A1: End cover
B1: Upper blind spot
B2: Lower blind spot
D: Optical axis pitch
H: Grating protection height
L: Grating total height

A1=12mm
B1=1/2 optical axis pitch
B2=1/2 optical axis pitc
H=(number of optical axis-1)*optical axis pitch
L=number of optical axis*optical axis pitch+24mm

Side mounting bracket	
Upper and lower mounting brackets	

Selection rule

MTS 20 10 N C 03 E ☐

Cable specification: None=standard pigtail aviation plug 2m S20n=shielded wire type A=straight outgoing aviation plug W=line synchronization X=cross through-beam Cn=wiring length n meters FX= floating blanking GX= fixed blanking

Installation method: E=Upper and lower mounting (default) L= Side mounting bracket T=Steel tube bracket Installation distance: 01=0-1m 03=1-3m 05=1-5m 07 =1-7m

Signal method: " C = normally close" " O = normally open"

Signal output: N=NPN P=PNP R=Relay

Optical axis pitch: 10, 20, 40mm

Number of optical axis: 4, 6, 8, 10, 12, ...256

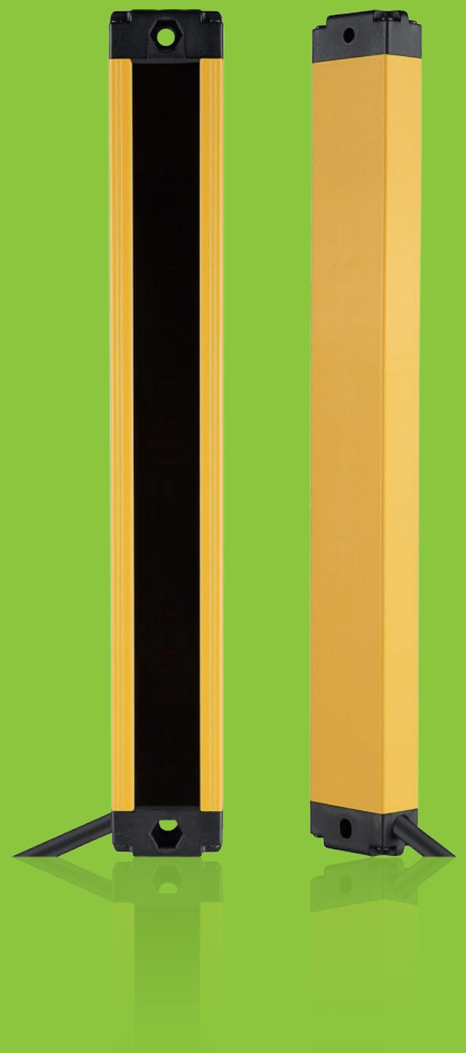
MTS Series Safety Grating

MTS standard grating selection table

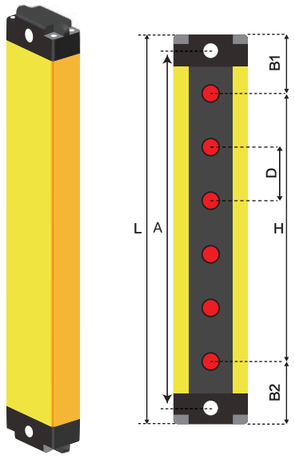
Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
4	MTS0410	30	84	MTS0420	60	104	MTS0440	120	184
6	MTS0610	50	84	MTS0620	100	144	MTS0640	200	264
8	MTS0810	70	104	MTS0820	140	184	MTS0840	280	344
10	MTS1010	90	124	MTS1020	180	224	MTS1040	360	424
12	MTS1210	110	144	MTS1220	220	264	MTS1240	440	504
14	MTS1410	130	164	MTS1420	260	304	MTS1440	520	584
16	MTS1610	150	184	MTS1620	300	344	MTS1640	600	664
18	MTS1810	170	204	MTS1820	340	384	MTS1840	680	744
20	MTS2010	190	224	MTS2020	380	424	MTS2040	760	824
22	MTS2210	210	244	MTS2220	420	464	MTS2240	840	904
24	MTS2410	230	264	MTS2420	460	504	MTS2440	920	984
26	MTS2610	250	284	MTS2620	500	544	MTS2640	1000	1064
28	MTS2810	270	304	MTS2820	540	584	MTS2840	1080	1144
30	MTS3010	290	324	MTS3020	580	624	MTS3040	1160	1224
32	MTS3210	310	344	MTS3220	620	664	MTS3240	1240	1304
34	MTS3410	330	364	MTS3420	660	704	MTS3440	1320	1384
36	MTS3610	350	384	MTS3620	700	744	MTS3640	1400	1464
38	MTS3810	370	404	MTS3820	740	784	MTS3840	1480	1544
40	MTS4010	390	424	MTS4020	780	824	MTS4040	1560	1624
42	MTS4210	410	444	MTS4220	820	864	MTS4240	1640	1704
44	MTS4410	430	464	MTS4420	860	904	MTS4440	1720	1784
46	MTS4610	450	484	MTS4620	900	944	MTS4640	1800	1864
48	MTS4810	470	504	MTS4820	940	984	MTS4840	1880	1944
50	MTS5010	490	524	MTS5020	980	1024	MTS5040	1960	2024
52	MTS5210	510	544	MTS5220	1020	1064	MTS5240	2040	2104
54	MTS5410	530	564	MTS5420	1060	1104	MTS5440	2120	2184
56	MTS5610	550	584	MTS5620	1100	1144	MTS5640	2200	2264
58	MTS5810	570	604	MTS5820	1140	1184	MTS5840	2280	2344
60	MTS6010	590	624	MTS6020	1180	1224	MTS6040	2360	2424

Note: This product model optical axis pitch includes 10mm, 20mm, 40mm etc., selection table is not fully embodied, if your choice is not among them , you could select by selection rule or contact us for your selection.

MTF FRONT ULTRA-THIN SAFETY GRATING



Dimension diagram



B1: Upper blind spot
B2: Lower blind spot
D: Optical axis pitch
H: Grating protection height
L: Grating total height

B1=1/2 optical axis pitch+13mm
B2=1/2 optical axis pitch+13mm
L=number of optical axis*optical axis pitch+26mm
A=L-12mm

Selection rule

MTF | 20 | 10 | N | C | 01 | Z | ☐

Cable specification: None=standard pigtail aviation plug 2m S20n=shielded wire type W=wire synchronization X=cross through-beam Cn=wiring length n meters

Installation method: Z = with mounting holes

Installation distance: 01=0-1 m 02=1-2m 03=1-3m

Signal method: " C = normally close" " O = normally open"

Signal output: N=NPN P=PNP

Optical axis pitch: 5, 10, 20, 40mm

Number of optical axis: 4, 6, 8, 10, 12, ...256

MTF Series Safety Grating

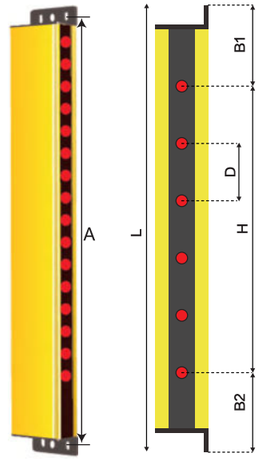
MTL front ultra-thin grating selection table

Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
4	MTF0410	30	86	MTF0420	60	106	MTF0440	120	186
6	MTF0610	50	86	MTF0620	100	146	MTF0640	200	266
8	MTF0810	70	106	MTF0820	140	186	MTF0840	280	346
10	MTF1010	90	126	MTF1020	180	226	MTF1040	360	426
12	MTF1210	110	146	MTF1220	220	266	MTF1240	440	506
14	MTF1410	130	166	MTF1420	260	326	MTF1440	520	586
16	MTF1610	150	186	MTF1620	300	346	MTF1640	600	666
18	MTF1810	170	206	MTF1820	340	386	MTF1840	680	746
20	MTF2010	190	226	MTF2020	380	426	MTF2040	760	826
22	MTF2210	210	246	MTF2220	420	466	MTF2240	840	906
24	MTF2410	230	266	MTF2420	460	506	MTF2440	920	986
26	MTF2610	250	286	MTF2620	500	546	MTF2640	1000	1066
28	MTF2810	270	306	MTF2820	540	586	MTF2840	1080	1146
30	MTF3010	290	326	MTF3020	580	626	MTF3040	1160	1226
32	MTF3210	310	346	MTF3220	620	666	MTF3240	1240	1306
34	MTF3410	330	366	MTF3420	660	706	MTF3440	1320	1386
36	MTF3610	350	386	MTF3620	700	746	MTF3640	1400	1466
38	MTF3810	370	406	MTF3820	740	786	MTF3840	1480	1546
40	MTF4010	390	426	MTF4020	780	826	MTF4040	1560	1626
42	MTF4210	410	446	MTF4220	820	866	MTF4240	1640	1706
44	MTF4410	430	466	MTF4420	860	906	MTF4440	1720	1786
46	MTF4610	450	486	MTF4620	900	946	MTF4640	1800	1866
48	MTF4810	470	506	MTF4820	940	986	MTF4840	1880	1946
50	MTF5010	490	526	MTF5020	980	1026	MTF5040	1960	2026
52	MTF5210	510	546	MTF5220	1020	1066	MTF5240	2040	2106
54	MTF5410	530	566	MTF5420	1060	1106	MTF5440	2120	2186
56	MTF5610	550	586	MTF5620	1100	1146	MTF5640	2200	2266
58	MTF5810	570	606	MTF5820	1140	1186	MTF5840	2280	2346
60	MTF6010	590	626	MTF6020	1180	1226	MTF6040	2360	2426

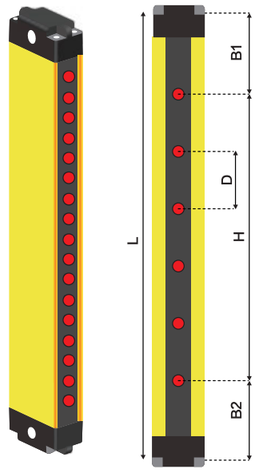
Note: This product model optical axis pitch includes 5mm, 10mm, 20mm, 40mm etc., selection table is not fully embodied, if your choice is not among them, please contact us for your selection.
Total height of all products in this series except 0805 and 0410 = (optical axis pitch * number of optical axes) + 26mm

MTL SIDE ULTRA-THIN SAFETY GRATING

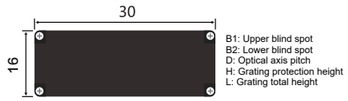
Dimension diagram



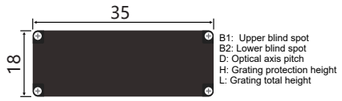
Default type (16*30)



B-type (18*35)

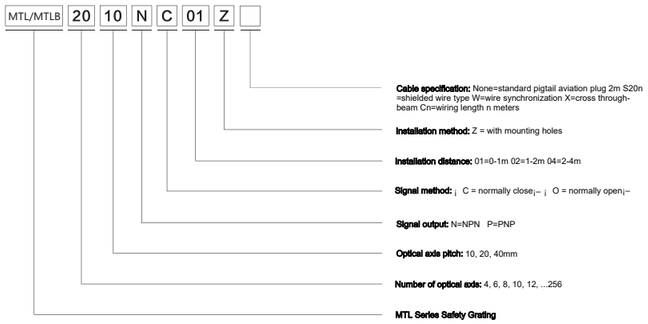


B1=1/2 optical axis pitch+9.5mm
B2 = 1/2 optical axis pitch + 11.5mm (outgoing wire end)
L=number of optical axis*optical axis pitch+21mm
A=L-7mm



B1=1/2 optical axis pitch+12mm
B2 = 1/2 optical axis pitch + 14mm (outgoing wire end)
L=number of optical axis*optical axis pitch+26mm
A=L-12mm

Selection rule



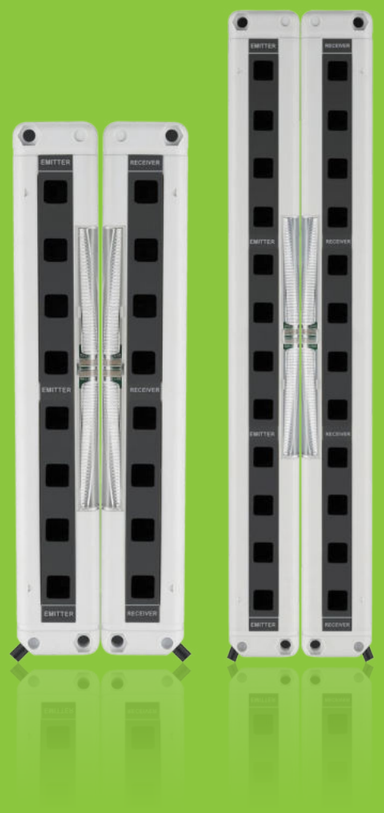
Side ultra-thin safety grating

MTL side ultra-thin grating selection table

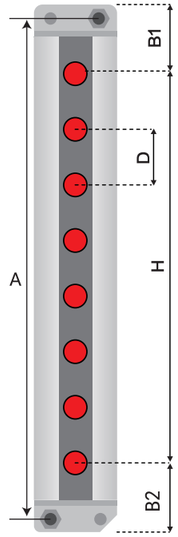
Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
4	MTL0410	30	101	MTL0420	60	101	MTL0440	120	181
6	MTL0610	50	101	MTL0620	100	141	MTL0640	200	261
8	MTL0810	70	101	MTL0820	140	181	MTL0840	280	341
10	MTL1010	90	121	MTL1020	180	221	MTL1040	360	421
12	MTL1210	110	141	MTL1220	220	261	MTL1240	440	501
14	MTL1410	130	161	MTL1420	260	301	MTL1440	520	581
16	MTL1610	150	181	MTL1620	300	341	MTL1640	600	661
18	MTL1810	170	201	MTL1820	340	381	MTL1840	680	741
20	MTL2010	190	221	MTL2020	380	421	MTL2040	760	821
22	MTL2210	210	241	MTL2220	420	461	MTL2240	840	901
24	MTL2410	230	261	MTL2420	460	501	MTL2440	920	981
26	MTL2610	250	281	MTL2620	500	541	MTL2640	1000	1061
28	MTL2810	270	301	MTL2820	540	581	MTL2840	1080	1141
30	MTL3010	290	321	MTL3020	580	621	MTL3040	1160	1221
32	MTL3210	310	341	MTL3220	620	661	MTL3240	1240	1301
34	MTL3410	330	361	MTL3420	660	701	MTL3440	1320	1381
36	MTL3610	350	381	MTL3620	700	741	MTL3640	1400	1461
38	MTL3810	370	401	MTL3820	740	781	MTL3840	1480	1541
40	MTL4010	390	421	MTL4020	780	821	MTL4040	1560	1621
42	MTL4210	410	441	MTL4220	820	861	MTL4240	1640	1701
44	MTL4410	430	461	MTL4420	860	901	MTL4440	1720	1781
46	MTL4610	450	481	MTL4620	900	941	MTL4640	1800	1861
48	MTL4810	470	501	MTL4820	940	981	MTL4840	1880	1941
50	MTL5010	490	521	MTL5020	980	1021	MTL5040	1960	2021
52	MTL5210	510	541	MTL5220	1020	1061	MTL5240	2040	2101
54	MTL5410	530	561	MTL5420	1060	1101	MTL5440	2120	2181
56	MTL5610	550	581	MTL5620	1100	1141	MTL5640	2200	2261
58	MTL5810	570	601	MTL5820	1140	1181	MTL5840	2280	2341
60	MTL6010	590	621	MTL6020	1180	1221	MTL6040	2360	2421

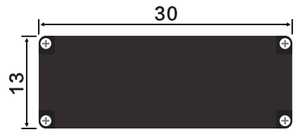
Note: The table shows the parameters of MTLA type, MTLB type protective height is the same as that of A type, total length = A type total length +5mm
The optical axis pitch of this product model includes 10mm, 20mm, 40mm etc. if the selected model is not found in the table, please according to the selection rules or contact us.Safety grating with corresponding protection height can be customized according to customer's needs

MTP PLASTIC HOUSING SAFETY OPTICAL GRATING



Dimension diagram





B1: Upper blind spot
B2: Lower blind spot
D: Optical axis pitch
H: Grating protection height
L: Grating total height

B1=25mm

B2=25mm

Selection rule

MTP 16 20 N C 01 Z □

Cable specification: none=direct outgoing 2 meters J=pigtail plug S20n= Shielded cable type W=line synchronization Cn=wiring length n meters

Installation method: Z = with mounting holes

Installation distance: 01=0-1m 02=1-2m 03=2-3m 05=3-5m

Signal method: " C = normally close" " O = normally open"

Signal output: N=NPN P=PNP

Optical axis pitch: 20mm

Number of optical axis: 6, 8, 12, 16

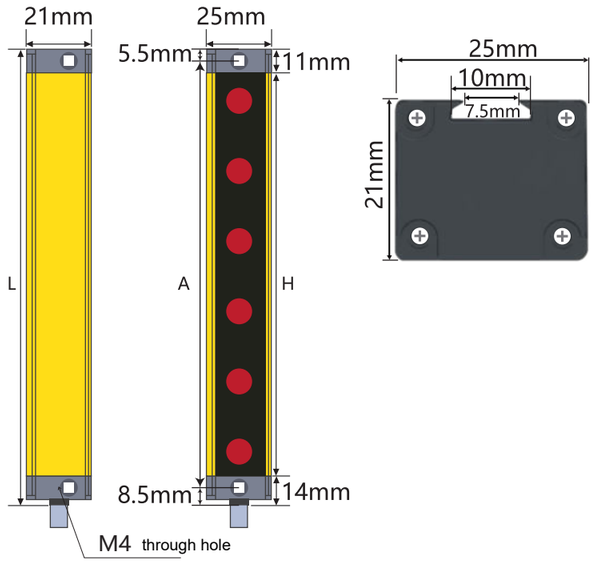
MTP Series Safety Grating

MTP plastic housing grating selection table

Optical axis pitch 20mm			
Number of optical axis	Model	Protection height (mm)	Total height(mm)
6	MTP0620	100	140
8	MTP0820	140	190
12	MTP1220	220	270
16	MTP1620	300	350

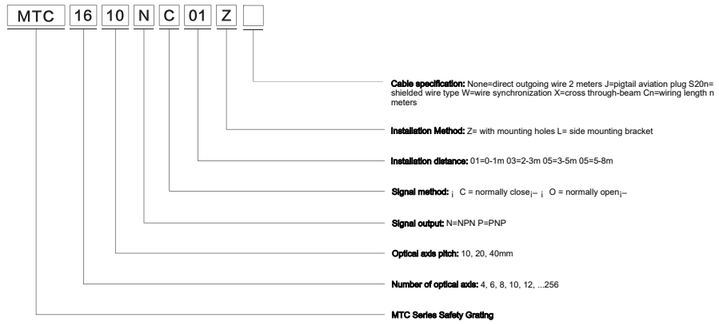
MTC COMPACT SAFETY GRATING

Dimension diagram



L=number of optical axis*optical axis pitch+25mm
A=L-14mm

Selection rule

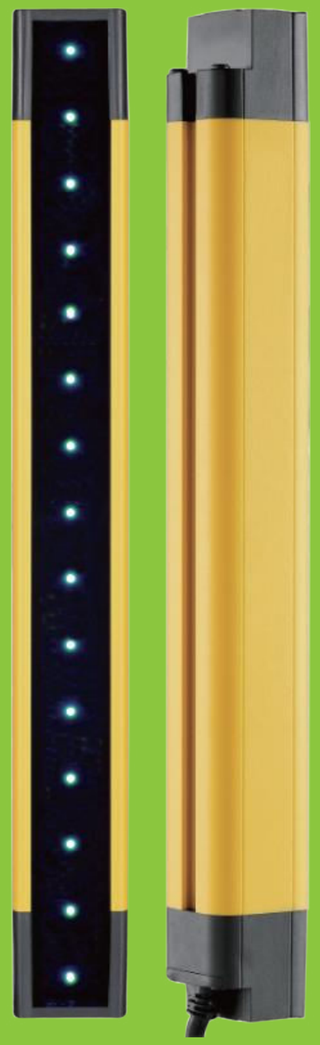


MTC Compact grating selection table

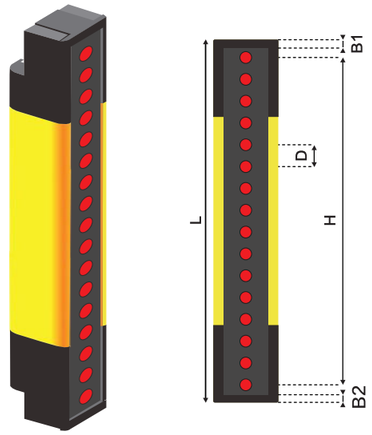
Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
4	MTC0410	30	85	MTC0420	60	105	MTC0440	120	185
6	MTC0610	50	85	MTC0620	100	145	MTC0640	200	265
8	MTC0810	70	105	MTC0820	140	185	MTC0840	280	345
10	MTC1010	90	125	MTC1020	180	225	MTC1040	360	425
12	MTC1210	110	145	MTC1220	220	265	MTC1240	440	505
14	MTC1410	130	165	MTC1420	260	305	MTC1440	520	585
16	MTC1610	150	185	MTC1620	300	345	MTC1640	600	665
18	MTC1810	170	205	MTC1820	340	385	MTC1840	680	745
20	MTC2010	190	225	MTC2020	380	425	MTC2040	760	825
22	MTC2210	210	245	MTC2220	420	465	MTC2240	840	905
24	MTC2410	230	265	MTC2420	460	505	MTC2440	920	985
26	MTC2610	250	285	MTC2620	500	545	MTC2640	1000	1065
28	MTC2810	270	305	MTC2820	540	585	MTC2840	1080	1145
30	MTC3010	290	325	MTC3020	580	625	MTC3040	1160	1225
32	MTC3210	310	345	MTC3220	620	665	MTC3240	1240	1305
34	MTC3410	330	365	MTC3420	660	705	MTC3440	1320	1385
36	MTC3610	350	385	MTC3620	700	745	MTC3640	1400	1465
38	MTC3810	370	405	MTC3820	740	785	MTC3840	1480	1545
40	MTC4010	390	425	MTC4020	780	825	MTC4040	1560	1625
42	MTC4210	410	445	MTC4220	820	865	MTC4240	1640	1705
44	MTC4410	430	465	MTC4420	860	905	MTC4440	1720	1785
46	MTC4610	450	485	MTC4620	900	945	MTC4640	1800	1865
48	MTC4810	470	505	MTC4820	940	985	MTC4840	1880	1945
50	MTC5010	490	525	MTC5020	980	1025	MTC5040	1960	2025
52	MTC5210	510	545	MTC5220	1020	1065	MTC5240	2040	2105
54	MTC5410	530	565	MTC5420	1060	1105	MTC5440	2120	2185
56	MTC5610	550	585	MTC5620	1100	1145	MTC5640	2200	2265
58	MTC5810	570	605	MTC5820	1140	1185	MTC5840	2280	2345
60	MTC6010	590	625	MTC6020	1180	1225	MTC6040	2360	2425

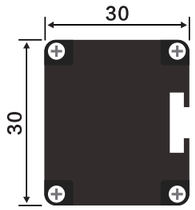
This model includes 10mm, 20mm, 40mm optical axis pitch, if you can not find the selected model in the table, please according to the selection rules or contact us.
Safety grating with corresponding protection height can be customized according to customer's needs

MTE TYPE 4 SAFETY GRATING



Dimension diagram





B1: Upper blind spot
B2: Lower blind spot
D: Optical axis pitch
H: Grating protection height
L: Grating total height

B1=1/2 optical axis pitch+3mm
B2=1/2 optical axis pitch+3mm
L=number of optical axis*optical axis pitch+6mm

Selection rule

MTE 20 10 N C 03 E C

Cable specification: None=standard pigtail aviation plug 2m S20n=shielded wire type

Type 4 certification: default type 4, can add cascade manual reset EDM monitoring auxiliary output and other functions

Installation method: L=Side mounting bracket E= Upper and lower brackets (default)

Mounting distance: 2=0-2 m 3=1-3m6=3-6m 10=5-10m 15=10-15m

Signal method: " C = normally close" " O = normally open"

Signal output: N=NPN P=PNP

Optical axis pitch: 10, 20, 40mm

Number of optical axis: 4, 6, 8, 10, 12, ...256

MTE Series Safety Grating

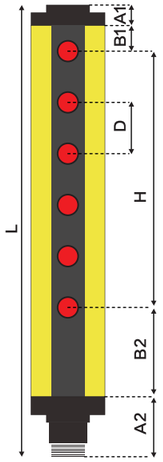
MTE type 4 safety grating selection table

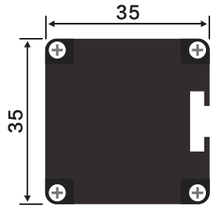
Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
8				MTE0820	140	166	MTE0840	280	326
10				MTE1020	180	206	MTE1040	360	406
12				MTE1220	220	246	MTE1240	440	486
14	MTE1410	130	146	MTE1420	260	286	MTE1440	520	566
16	MTE1610	150	166	MTE1620	300	326	MTE1640	600	646
18	MTE1810	170	186	MTE1820	340	366	MTE1840	680	726
20	MTE2010	190	206	MTE2020	380	406	MTE2040	760	806
22	MTE2210	210	226	MTE2220	420	446	MTE2240	840	886
24	MTE2410	230	246	MTE2420	460	486	MTE2440	920	966
26	MTE2610	250	266	MTE2620	500	526	MTE2640	1000	1046
28	MTE2810	270	286	MTE2820	540	566	MTE2840	1080	1126
30	MTE3010	290	306	MTE3020	580	606	MTE3040	1160	1206
32	MTE3210	310	326	MTE3220	620	646	MTE3240	1240	1286
34	MTE3410	330	346	MTE3420	660	686	MTE3440	1320	1366
36	MTE3610	350	366	MTE3620	700	726	MTE3640	1400	1446
38	MTE3810	370	386	MTE3820	740	766	MTE3840	1480	1526
40	MTE4010	390	406	MTE4020	780	806	MTE4040	1560	1606
42	MTE4210	410	426	MTE4220	820	846	MTE4240	1640	1686
44	MTE4410	430	446	MTE4420	860	886	MTE4440	1720	1766
46	MTE4610	450	466	MTE4620	900	926	MTE4640	1800	1846
48	MTE4810	470	486	MTE4820	940	966	MTE4840	1880	1926
50	MTE5010	490	506	MTE5020	980	1006	MTE5040	1960	2006
52	MTE5210	510	526	MTE5220	1020	1046	MTE5240	2040	2086
54	MTE5410	530	546	MTE5420	1060	1086	MTE5440	2120	2166
56	MTE5610	550	566	MTE5620	1100	1126	MTE5640	2200	2246
58	MTE5810	570	586	MTE5820	1140	1166	MTE5840	2280	2326
60	MTE6010	590	606	MTE6020	1180	1206	MTE6040	2360	2406

Note: This product model optical axis pitch includes 10mm, 20mm, 40mm etc., selection table is not fully embodied, if your choice is not among them, please contact us for your selection.
Total height of all products in this series = (optical axis pitch * number of optical axes) + 6mm.

MTG ENHANCED SAFETY GRATING

Dimension diagram





A1: Upper end cover
A2: Lower end cover + aviation terminal
B1: Upper blind spot
B2: Lower blind spot
D: Optical axis pitch
H: Grating protection height
L: Grating total height

A1=12mm A2=19mm
B1=1/2 optical axis pitc
B2 = 1/2 optical axis pitch + 25mm (02, 05, 10, 20 pitch) 1/2 optical axis pitch + 15mm (40 pitch)
H=(number of optical axis- 1)*optical axis pitch
L= Number of optical axes*optical axis pitch + {25 mm (02, 05, 10, 20 pitch) + 15mm (40 pitch)}+ 31mm

Bracket name and code	Bracket pictures and accessories
Side mounting bracket	
Upper and lower mounting brackets	

Selection rule

MTG | 20 | 10 | N | C | 03 | T | | |

- **Cable specification:** none=direct aviation plug with 2 meter cable J=pigtail aviation plug S20=shielded wire type X= cross through-beam Cn= wiring length n meters K= sunlight and vibration resistance FX= floating blanking
- **Synchronization method:** None = default line synchronization G = optical synchronization (default optical synchronization above 5M)
- **Installation method:** E=Upper and lower mounting (default) L= Side mounting bracket T=Steel tube bracket
- **Installation distance:** 03=1-3 m 05=3-5m 10=5-10m 30=10-30m
- **Signal method:** "C" = normally close "O"= normally open
- **Signal output:** N=NPN P=PNP R=Relay
- **Optical axis pitch:** 2, 5, 10, 20, 40mm
- **Number of optical axis:** 4, 6, 8, 10, 12, ...256
- **MTG Series Safety Grating**

MTG series enhanced grating selection table

Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
4	MTG0410	30	116	MTG0420	60	136	MTG0440	120	206
6	MTG0610	50	116	MTG0620	100	176	MTG0640	200	286
8	MTG0810	70	136	MTG0820	140	216	MTG0840	280	366
10	MTG1010	90	156	MTG1020	180	256	MTG1040	360	446
12	MTG1210	110	176	MTG1220	220	296	MTG1240	440	526
14	MTG1410	130	196	MTG1420	260	336	MTG1440	520	606
16	MTG1610	150	216	MTG1620	300	376	MTG1640	600	686
18	MTG1810	170	236	MTG1820	340	416	MTG1840	680	766
20	MTG2010	190	256	MTG2020	380	456	MTG2040	760	846
22	MTG2210	210	276	MTG2220	420	496	MTG2240	840	926
24	MTG2410	230	296	MTG2420	460	536	MTG2440	920	1006
26	MTG2610	250	316	MTG2620	500	576	MTG2640	1000	1086
28	MTG2810	270	336	MTG2820	540	616	MTG2840	1080	1166
30	MTG3010	290	356	MTG3020	580	656	MTG3040	1160	1246
32	MTG3210	310	376	MTG3220	620	696	MTG3240	1240	1326
34	MTG3410	330	396	MTG3420	660	736	MTG3440	1320	1406
36	MTG3610	350	416	MTG3620	700	776	MTG3640	1400	1486
38	MTG3810	370	436	MTG3820	740	816	MTG3840	1480	1566
40	MTG4010	390	456	MTG4020	780	856	MTG4040	1560	1646
42	MTG4210	410	476	MTG4220	820	896	MTG4240	1640	1726
44	MTG4410	430	496	MTG4420	860	936	MTG4440	1720	1806
46	MTG4610	450	516	MTG4620	900	976	MTG4640	1800	1886
48	MTG4810	470	536	MTG4820	940	1016	MTG4840	1880	1966
50	MTG5010	490	556	MTG5020	980	1056	MTG5040	1960	2046
52	MTG5210	510	576	MTG5220	1020	1096	MTG5240	2040	2126
54	MTG5410	530	596	MTG5420	1060	1136	MTG5440	2120	2206
56	MTG5610	550	616	MTG5620	1100	1176	MTG5640	2200	2286
58	MTG5810	570	636	MTG5820	1140	1216	MTG5840	2280	2366
60	MTG6010	590	656	MTG6020	1180	1256	MTG6040	2360	2446

Note: This product model optical axis accuracy includes 2mm, 5mm, 10mm, 20mm, 40mm etc., selection table is not fully embodied, if your choice is not among them, please contact us for your selection.
Total height of all products in this series = optical axis accuracy * number of optical axes + 57mm.

MTM MEASURING SAFETY OPTICAL GRATING

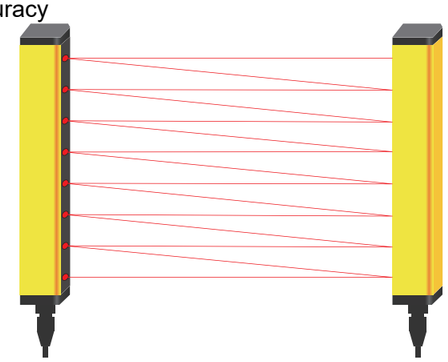
Product overview

¡ High-precision MTMF series measuring gratings are applicable to high-precision detection and measurement.

¡ Includes online detection, dimensional measurement, profile detection, accuracy correction, hole diameter detection, outline detection, edge and center positioning, tension control, parts counting, online product dimensional detection, and similar detection and measurement as above

Scanning method

Parallel scan (default): scans all beams, the emitter's emission corresponds to the receiver's reception.
Cross scan: It consists of parallel scanning and tilted beams, and the tilted beams are sent from the second channel of the emitter corresponding to the first channel of the receiver; the third channel of the emitter corresponds to the second channel of the receiver until the last channel of the emitter corresponds to the penultimate channel of the receiver, completing the whole scanning. Therefore cross scanning improves detection accuracy



MTM F

(13mmx28m ultra-thin design)

MTM G

(35mmx35mm standard design)

Control output type

1. Analog output M: Output is 4-20MA current
Type I MA: Masking the highest point effectively defaults to full masking below the highest point
Type II MB: Masking the highest and lowest point effectively default to full masking between highest and lowest points
Type III MC: Number of blocked optical axis effective defaults to the actual blocked optical axis
2. RS485 communication function RS: adopts the standard MODBUS protocol to communicate with the upper computer
Type I RSA: Answer type - requires the upper computer to read the grating data;
Default configuration: Address 1 Baud rate 9600 BPS Data byte format: 1 start bit, 8-bit data bit, no parity check, 1-bit stop bit.Type III MC: Number of blocked optical axis effective defaults to the actual blocked optical axis
A. Lowest point, address 0X40H
B. Highest point, address 0X41H
C. The number of light curtains blocked, address 0X42H
D. The status value of all light points in the light curtain, address 0X00H
Type II RSB: Active type - grating actively sends data to the upper computer
Default configuration: baud rate: 9600BPS
Data format: 1 start bit, 8 data bits, no parity check, 1-bit stop bit.
The read data type is optional:
RSBA, output the status of all light points in the light curtain
Scanning one frame to send one frame of data, the format is 0Xaaaa 0Xxx 0Xxx...xx
Start code Grating address Grating data
RSBB, output light curtain blocked lowest point and highest point
Scanning one frame to send one frame of data, the format is
0Xaaaa 0Xxx 0Xxx 0Xxx 0Xxx
Starting code Grating address Lowest point Highest point

Selection rule

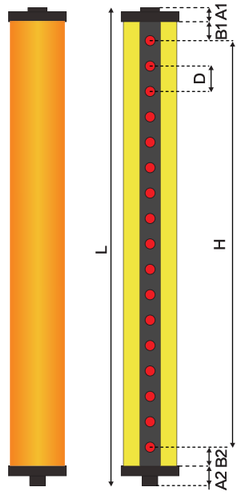
MTM | F | 20 | 10 | MA | | 01 | Z | W

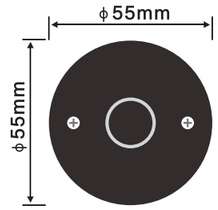
Synchronization method: W=Line synchronization
Installation Method: Z= with mounting holes L= side mounting bracket
Installation distance: 01=0.1-0.4m 02=0.4-1m 03=1-3m 20 =3-20m
Detection method: default parallel scanning ¡ x_{j-} = cross
Signal output: MA MB MC RSA RSB, etc.
Optical axis pitch: 2, 5, 10, 20, 40mm
Number of optical axis: 4, 6, 8, 10, 12, ...256
Cross section size: F:13*28mm high precision (5mm pitch only) G: 35*35mm high precision
MTM Series Measuring Grating

MTR WATERPROOF SAFETY GRATING

*The pioneering domestic IP69 waterproof and dustproof safety grating
*Can be submerged up to 10 meters for normal use
*Anti-electromagnetic, optical interference passes the CE / FCC certification
*Internal self-inspection, LED indicator and fault lights

Dimension diagram

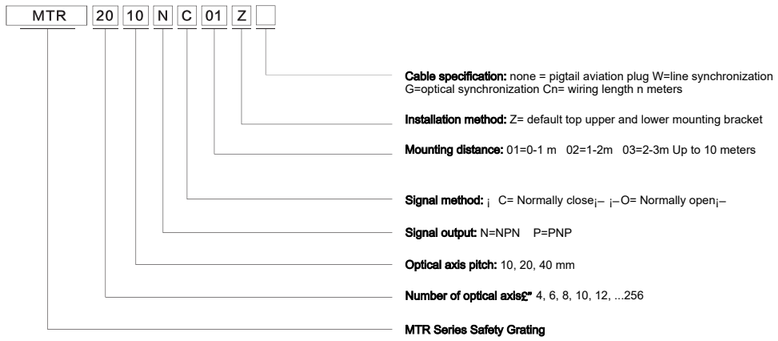




A1: Upper end cover
A2: Lower end cover
B1: Upper blind spot
B2: Lower blind spot
D: Optical axis pitch
H: Grating protection height
L: Grating total height

A1=15mm A2=15mm
B1=1/2 optical axis pitc
B2=1/2 optical axis pitch + 25mm (10, 20 pitch) 1/2 optical axis pitch + 15mm (40 pitch)
H=(number of optical axis-1)*optical axis pitch
L= Number of optical axes * optical axis pitch +30mm +25mm (10, 20 pitch) +15mm (40 pitch)

Selection rule

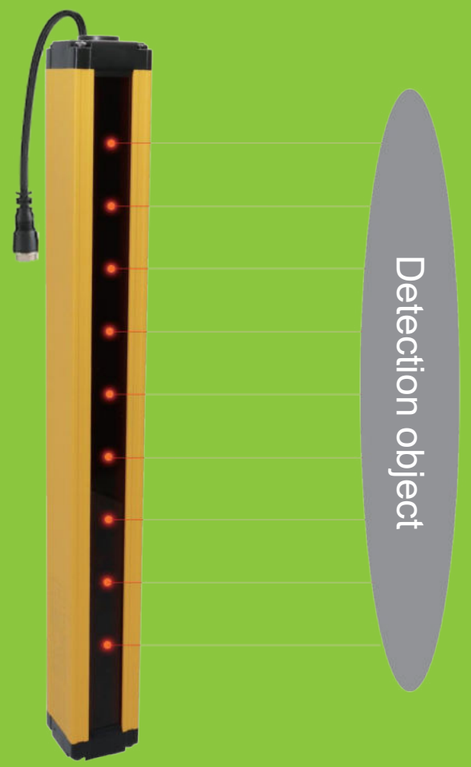


MTR waterproof grating selection table

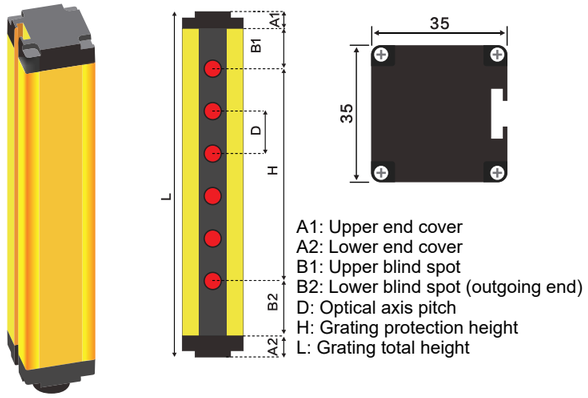
Optical axis pitch	10mm			20mm			40mm		
Number of optical axis	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)	Model	Protection height (mm)	Total height (mm)
4	MTR0410	30	115	MTR0420	60	135	MTR0440	120	205
6	MTR0610	50	115	MTR0620	100	175	MTR0640	200	285
8	MTR0810	70	135	MTR0820	140	215	MTR0840	280	365
10	MTR1010	90	155	MTR1020	180	255	MTR1040	360	445
12	MTR1210	110	175	MTR1220	220	295	MTR1240	440	525
14	MTR1410	130	195	MTR1420	260	335	MTR1440	520	605
16	MTR1610	150	215	MTR1620	300	375	MTR1640	600	685
18	MTR1810	170	235	MTR1820	340	415	MTR1840	680	765
20	MTR2010	190	255	MTR2020	380	455	MTR2040	760	845
22	MTR2210	210	275	MTR2220	420	495	MTR2240	840	925
24	MTR2410	230	295	MTR2420	460	535	MTR2440	920	1005
26	MTR2610	250	315	MTR2620	500	575	MTR2640	1000	1085
28	MTR2810	270	335	MTR2820	540	615	MTR2840	1080	1165
30	MTR3010	290	355	MTR3020	580	655	MTR3040	1160	1245
32	MTR3210	310	375	MTR3220	620	695	MTR3240	1240	1325
34	MTR3410	330	395	MTR3420	660	735	MTR3440	1320	1405
36	MTR3610	350	415	MTR3620	700	775	MTR3640	1400	1485
38	MTR3810	370	435	MTR3820	740	815	MTR3840	1480	1565
40	MTR4010	390	455	MTR4020	780	855	MTR4040	1560	1645
42	MTR4210	410	475	MTR4220	820	895	MTR4240	1640	1725
44	MTR4410	430	495	MTR4420	860	935	MTR4440	1720	1805
46	MTR4610	450	515	MTR4620	900	975	MTR4640	1800	1885
48	MTR4810	470	535	MTR4820	940	1015	MTR4840	1880	1965
50	MTR5010	490	555	MTR5020	980	1055	MTR5040	1960	2045
52	MTR5210	510	575	MTR5220	1020	1095	MTR5240	2040	2125
54	MTR5410	530	595	MTR5420	1060	1135	MTR5440	2120	2205
56	MTR5610	550	615	MTR5620	1100	1175	MTR5640	2200	2285
58	MTR5810	570	635	MTR5820	1140	1215	MTR5840	2280	2365
60	MTR6010	590	655	MTR6020	1180	1255	MTR6040	2360	2445

Note: This product model optical axis pitch includes 10mm, 20mm, 40mm etc., selection table is not fully embodied, if your choice is not among them, please contact us for your selection.

MTD DIFFUSE SAFETY GRATING



Dimension diagram



A1: Upper end cover
A2: Lower end cover
B1: Upper blind spot
B2: Lower blind spot (outgoing end)
D: Optical axis pitch
H: Grating protection height
L: Grating total height

A1=12mm A2=12mm

A1=12mm A2=12mm
B1=1/2 optical axis pitch
B2=1/2 optical axis pitch+25mm
H= number of optical axis*optical axis pitch
L=number of optical axis*optical axis pitch+49mm

Product overview

LED indicator light
Equipped with distinctive green LED power indicator light, red signal indicator light and large size digital display

Multiple gears
According to the actual use of the distance to match the number 1 ~ 9 gears, select the appropriate distance and gear, long press for 1S to save the gear or for 30S to save automatically

Independent learning
When the using environment has a fixed background, default 0 gear long press the button for 2S, grating self-learning distance, automatically select the appropriate emission intensity, green light blinking in self-learning process. This mode is not suitable for applications where the brightness of the background varies considerably or where the position of the background changes frequently

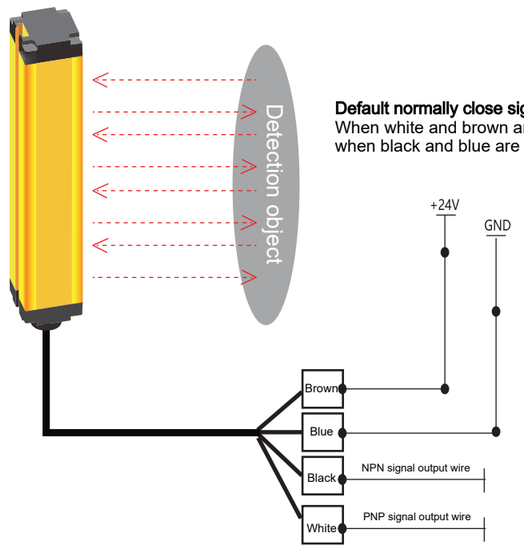
Extra-long distance
Realizes ultra-long detection distance, the longest can reach more than 2000mm, pigtail type wiring, more compact size and smaller blind area

Dual-way signal
Default NPN/PNP dual-way signal output, normally open and close can be switched, supports the number of light points customized (even) Note: This series of reflective grating is recommended only for area detection, can not be used for security purposes.

MTD diffuse grating selection table

Number of optical axis	Model	Protection height (mm)	Total height (mm)
4	MTD0440	160	209
6	MTD0640	240	289
8	MTD0840	320	369
10	MTD1040	400	449
12	MTD1240	480	529
14	MTD1440	560	609
16	MTD1640	640	689
18	MTD1840	720	769
20	MTD2040	800	849
22	MTD2240	880	929
24	MTD2440	960	1009
26	MTD2640	1040	1089
28	MTD2840	1120	1169
30	MTD3040	1200	1249
32	MTD3240	1280	1329
34	MTD3440	1360	1409
36	MTD3640	1440	1489
38	MTD3840	1520	1569
40	MTD4040	1600	1649
42	MTD4240	1680	1729
44	MTD4440	1760	1809
46	MTD4640	1840	1889
48	MTD4840	1920	1969
50	MTD5040	2000	2049

Wiring method

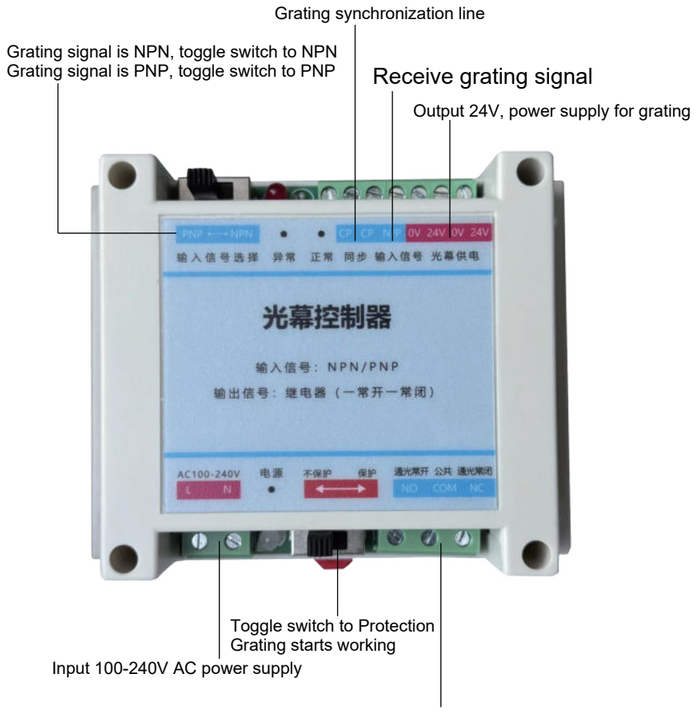


Default normally close signal output
When white and brown are shorted, black outputs NPN normally open signal; when black and blue are shorted, white outputs PNP normally open signal.

MT-KQ BUILT-IN CONTROLLER

Characteristics

- Wide range voltage
- High power relay
- Customized procedure
- Easy installation
- Industrial-grade standard
- Wide range of applications

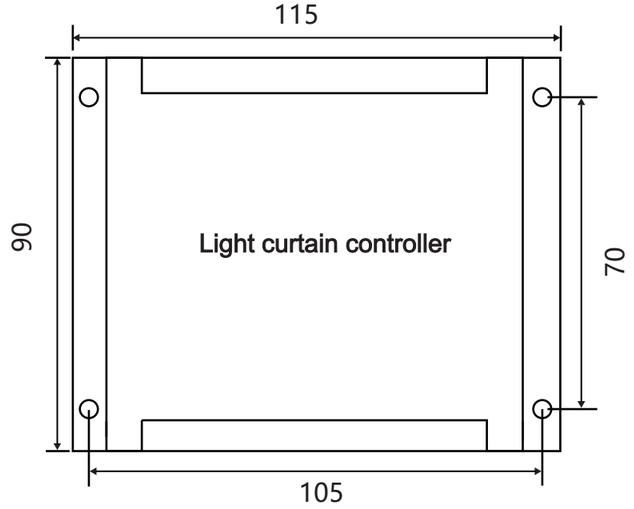


When grating is light-input: NC and COM are closed, NO and COM are disconnected
When the grating is darkening: NC and COM are disconnected, NO and COM are closed

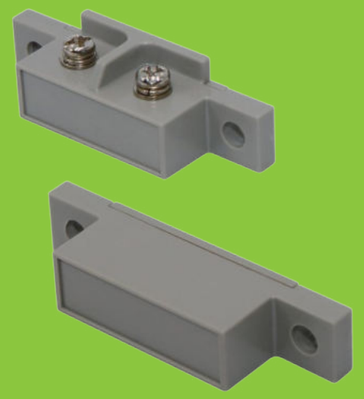
Product parameters

Apperance	
Model	MT-KQ
Protection function	✓
Key switch	✓
Number of connectable gratings	1 or 2 sets
Mounting position	Side of the machine body
Self-protection function	✓
Matching grating specifications	Full series
Signal output	Normally open/close relay signal
Power supply voltage	110V/220V
Operating temperature	-25¡ ~65¡
Insulation resistance	>100MΩ
Circuit protection	Reverse-connection protection/output short circuit protection
Interference resistant ability	10000Lux
Relay service life	2 million times
Power consumption	5W

Dimension diagram (unit: mm)



MT DOOR MAGNETIC SWITCH



Characteristics

Magnetosphere type, square type, terminal block type, response distance 15mm
Proximity switches with permanent magnet activated reeds or switching contacts
Suitable for detecting the opening and closing of doors and suction parts

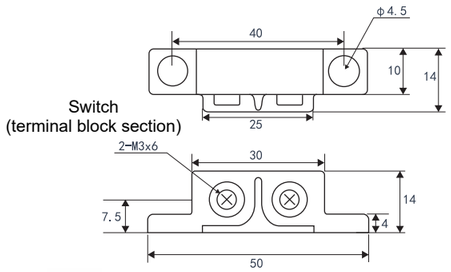
Cylindrical detection header size	50mm×14mm×14mm
Type	Square type, magnetosphere
Detection distance	type 15mm

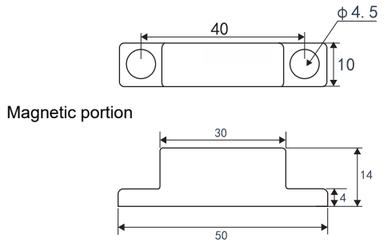
Product parameters

Appearance			
Model	MT-GLS	MT-GLS-NP	MT-AZC
Detection header size	50mm×14mm×14mm	50mm×14mm×14mm	59.5mm×38mm×16.2mm
Type	Magnetic reed switch/proximity conduction	NPN/PNP dual channel output	Magnetostriction contact/1 normally open 1 normally close
Detection distance	15mm		
Response frequency	20Hz or below		
Service temperature range	-20~60¡		
Storage temperature range	-20~60¡		
Service humidity range	35~85%RH		
Storage humidity range	35~85%RH		
Withstand voltage	Between each terminal and housing: AC1000V 50/60Hz 1min		
Vibration (durable)	Durability: 10~55Hz double amplitude 1.5mm 2h in each direction of X, Y, Z Durability:		
Impact (durable)	300m/s2 3 times in each direction of X, Y, Z		
Protection level	IEC:IP40		
Connection method	Terminal block type		
Material	Sensor: ABS Magnet: ABS		

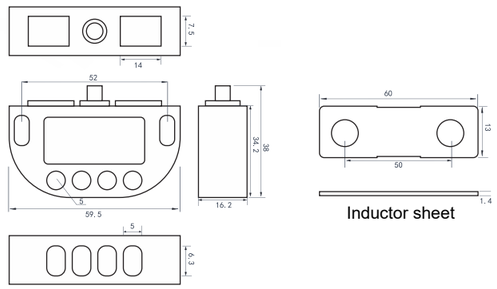
Dimension diagram (unit: mm)

MT-GLS





MT-AZC



Magnetic portion

Inductor sheet

MT-RE13 SERIES NON-CONTACT MAGNETIC ENCODING SAFETY SWITCH

Functional characteristics

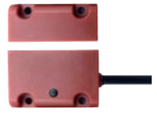
The MT-RE13 series safety switches are designed using the principles of RFID technology, with high safety and confidentiality (can provide a unique code), strong anti-interference, stable and reliable and so on. Alternatively, a magnetic code combining several magnetosensitive elements with a recognition logic that must be triggered in a specific sequence in order to function properly. Non-contact actuation with high misalignment tolerance, large detection range, easy to install, multiple cascades, MT-RE13-NP/MT-RE13-10 can be used in conjunction with the MSR-N/P safety module to achieve safety level 4, CE certified, compliant with ISO13849-1 SIL3PLe.category 4.

Model description

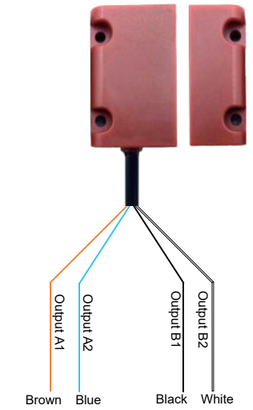
MT-RE13 — NP — ☐

- MT-RE13: Non-contact safety switch
- NP: magnetic coding scheme
  RFO: radio frequency, general code
  RF1: radio frequency, unique code
  IO: two-way normally close contact
- ☐: None: default direct outgoing wire 2M
  -J: Pigtail plug
  -Cn: Customized outlet length n meters
  -CS: Cascade function

Technical parameters

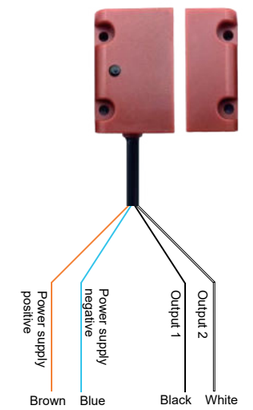
Appearance				
Model	MT-RE13-NP	MT-RE13-RF0	MT-RE13-RF1	MT-RE13-IO
Signal method	Magnetic encoding	High frequency RFID radio frequency technology		Tongue tube contact
Output method	NPN normally close + PNP normally close			Two sets of independent normally open contact
Safety standard	ISO13849-1,IEC/EN60947-5-3			
Wire outgoing method	2 meters direct outgoing wire, outgoing wire with navigation plug (-J)			
Working distance	Conducting Min:8mm; Breaking Max:17mm			
Typical tolerance	Top or side			
Output current (max.)	100mA			
Response time	5ms			
Protection level	IP67			
Operating frequency	10Hz			
Operating temperature	-10~+55℃			
Relative humidity	5%~95%			
Material	ABS+PC			

Wiring diagram



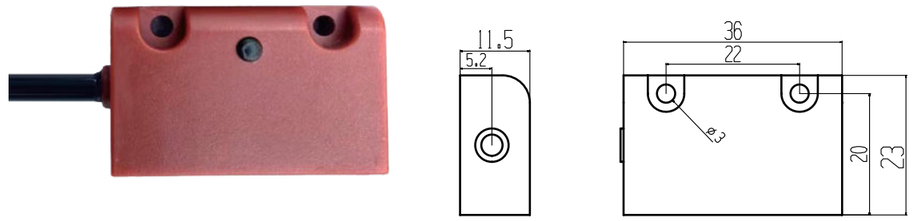
No.	Wiring definition	Color
1	Output A1	Brown
2	Output A2	Blue
3	Output B1	Black
4	Output B2	White

※ A/A2 is a set of contact outputs
B1/B2 is a set of contact outputs

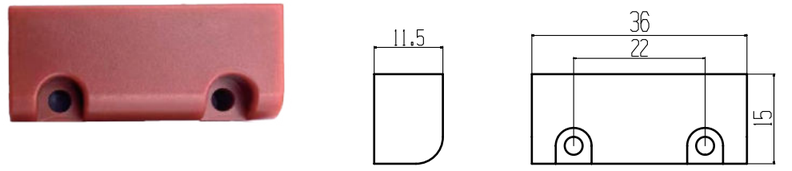


No.	Wiring definition	Color
1	Power supply 24V	Brown
2	Power supply OV	Blue
3	NPN normally close output	Black
4	PNP normally close output	White

Dimension diagram (unit: mm)



Inductor



Actuator

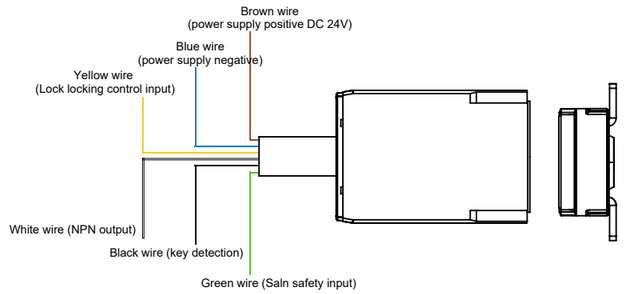
※ Subject to the product configuration and manufacturing process, the actual product size and weight may vary, please refer to the actual product.

MT SERIES ELECTROMAGNETIC LOCKING SAFETY DOOR LOCK

Characteristics

Easy and tight locking by electromagnetic force
The product has a flat electromagnetic locking structure, which can effectively solve the problem of door shift and with dual-way Hall recognition,The MT-M50 series is not only keyless, but also has a simple structure that greatly improves safety.
Easy to install, ultra-small body
No need to worry about the installation location, even if the space is small.

Wiring diagram



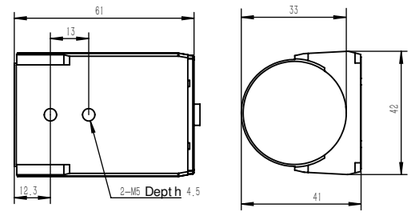
Working status:

1. When Ena, Lock is grounded:
When the key terminal is detected, a green light on, the electromagnet is energized, and the black and white wires NPN output signals;
When the key terminal is not detected, a red light on, the electromagnet is de-energized, and there is no output from the black and white wires.
2. When Ena is grounded and Lock is not grounded:
When the key terminal is detected, the green light flashes (once a second), the electromagnet is de-energized, the black wire outputs NPN, and the white wire has no output ;When the key terminal is not detected, a red light on, the electromagnet is de-energized, and there is no output from the black and white wires.
3. When Ena is not grounded and Lock is grounded:
When the key terminal is detected, the yellow light on, the electromagnet is energized, the black wire outputs NPN, and the white wire has no output;
When the key terminal is not detected, a red light on, the electromagnet is de-energized, and there is no output from the black and white wires.
4. when Ena is not grounded and Lock is not grounded:
When the key terminal is detected, the yellow light flashes (once a second), the electromagnet is de-energized, the black wire outputs NPN, and the white wire has no output ;When the key terminal is not detected, a red light on, the electromagnet is de-energized, and there is no output from the black and white wires

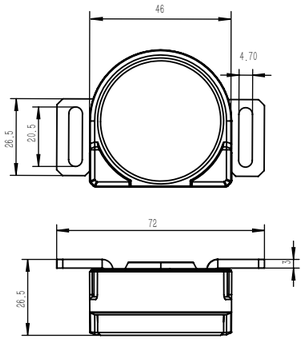
Technical parameters

Magnetic code identification model		MT-M50N	MT-M50P
RFID radio frequency identification model		MT-M50N-RF	MT-M50P-RF
Signal		Dual channel NPN Dual channel PNP	
Type		Electromagnetic locking safety door lock	
Retentivity when locked		450 N	
Retentivity when lock released		Approx. 1N	
Working distance	£¤OFF ¡œON£'	2mm	
Response time (ms)	Locking ¡œLock released	250ms	
	Lock released ¡œLocked	50ms	
Control output (OSSD output)	Output type	Transistor output × 2	
	Max. carry current	100mA	
	Residual voltage (when ON)	Max. 2V£¤at 2m cable£'	
	Voltage when OFF	Max. 2.0V£¤at 5m cable£'	
External input	Enable input	Approx. 2mA	
	Locking control input	Approx. 2.5mA	
Safety certification		CE SIL3	
Protection circuit		Power reverse connection protection, each output short circuit protection, each output surge protection, output reverse connection protection	
Power supply	Power supply voltage	24 VDC ±20% including ripple (P-P) 10% Class2	
	Power consumption	5W	
Environmental resistance	Housing protection level	IP65	
	Service ambient temperature	-20 to 55°C£¤no icing£'	
	Storage ambient temperature	-25 to 70°C£¤no icing£'	
	Service ambient humidity	5% to 95%RH	
	Seismic defenses	10 to 55 Hz, dual amplitude 2.0 mm, 5 minutes in each direction of X, Y , Z (IEC 60947-5-3)	
	Impact resistance	30G 6 times in each direction of X, Y, Z (IEC 60947-5-3)	

Product dimensions



Lock body



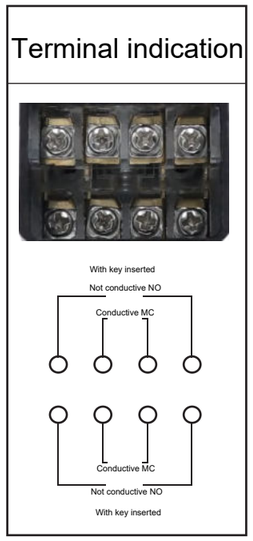
Lock head

MT SERIES SAFETY DOOR LOCK

Characteristics

This series contains gold-plated contacts with SIL 3 and PLe mechanical safety certification Safety door lock for standard loads and small loads.
Simple wiring, labor saving and easy to replace.
A variety of metal heads are available.

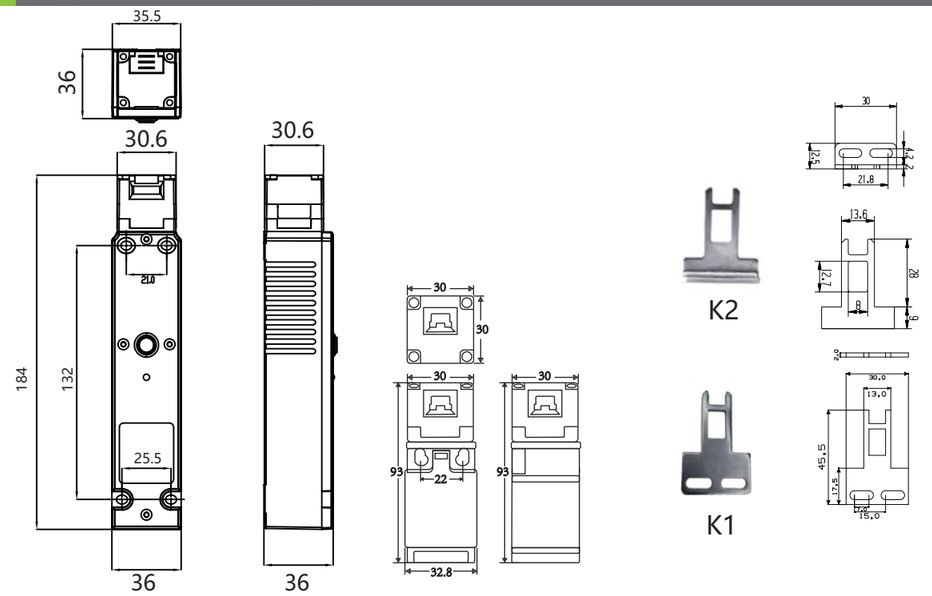
Wiring diagram



Technical parameters

Model		MT-D3NS	MT-D3SL-DS	MT-D3SL-DK	MT-D4NL-DS
		Small Safety Door Switch	Electromagnetic locking safety door switch	Electromagnetic locking safety door switch	Electromagnetic locking safety door switch
Interlocking type		2 sets of normally open 2 sets of normally close contacts	2 sets of normally open 2 sets of normally close contacts	2 sets of normally open 2 sets of normally close contacts	2 sets of normally open 2 sets of normally close contacts
Locking method		»	Electromagnetic locking mechanical release	Mechanical locking electromagnetic release	Electromagnetic locking mechanical release
Power supply voltage		Solenoid DC24V/Indicator light DC24V/Contact DC, AC10-230V			
Service life	Mechanical	1 million times			
	Electronic	<Standard type>More than 500,000 times (AC250V 3A, resistive load)*3 More than 300,000 times (AC250V 10A, resistive load)		<Strong Tensile Type>More than 100,000 times (AC250V 10A, resistive load)	
Certification standards		Complies with CE, PLe certification			
Forcible disconnect force		Locking force 1300N or above			
Forced disconnect pre-travel		10 mm or above			
Contact resistance		25MΩ or below			
Min. applicable load		DC5V 1mA resistive load (N level reference value)			
Rated insulation voltage (Ui)		300V			
Rated frequency		50/60 Hz			
Protection level against electric shock		Class I (double insulation)			
Pollution degree (using environment)		3(EN60947-5-1)			
Pulse withstand voltage	Between same polarity terminals	2.5kV			
	Between opposite polarity terminals	4kV			
	Between each terminal and non-energized metal parts	6kV			
Insulation resistance		100MΩ or above			
Contact interval		2×2mm or above			
Vibration-resistant	Misoperation	10~55Hz, single amplitude 0.75mm			
Impact resistance	Durable	1,000m/s2 or above			
	Misoperation	300m/s2 or above			
Conditional short-circuit current		100A(EN60947-5-1)			
Rated open thermal current (Ith)		10A(EN60947-5-1)			
Service ambient temperature		-30~70°C (no icing)			
Service ambient humidity		95% or below			
Weight		Approx. 96g			

Product dimensions



MT SERIES MAGNETIC ENCODING ELECTRONIC SAFETY DOOR LOCK

Characteristics

MT-GS51 series security door locks are based on magnetically encoded induction technology with monitored stainless steel latch structure, used for door guarding devices involving the safety of persons or machines.Safety level SIL3 or PLe can be achieved with the safety double-channel output technology, which can be used in conjunction with safety relays.

Wiring diagram

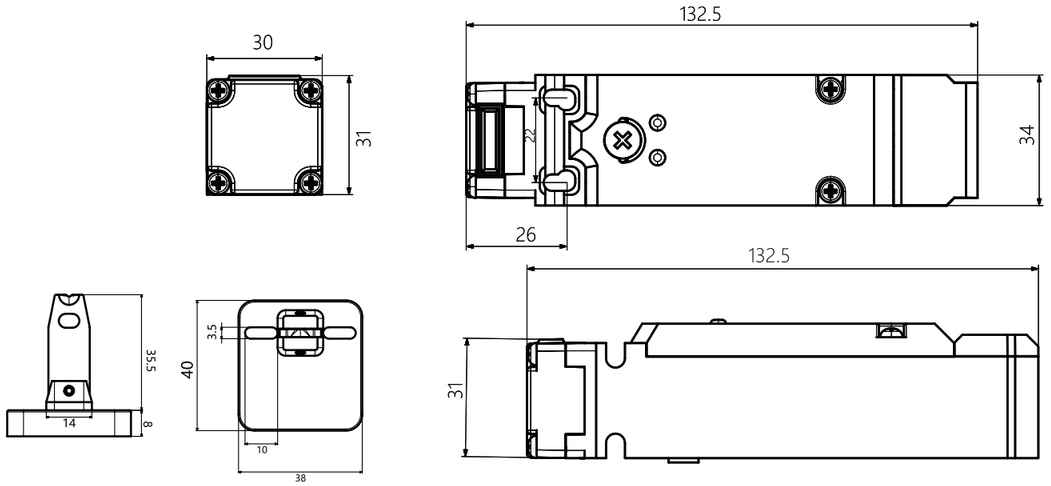
Magnetic Encoding Electronic Lock Safety Door Switch
VCC: power supply positive 24VDC
GND: Power supply negative 0V
UNLOCK: If the default is not connected, the door lock is locked; if 0V is connected, the door lock is unlocked.
0V: Common source with power supply negative
OUT1 and OUT2: Dual NPN normally close output
OUT3 and OUT4: Dual-way PNP Normally close outputs

VCC	UNLOCK	OUT1	OUT3	Null
GND	0V	OUT2	OUT4	Null

Technical parameters

Safety level	
Standard	SO 13849-1 IEC/EN60947-5-3
Safety classification	ISO 13849-1 compliant Class 4 switch/SIL3 dual channel interlock suitable for PLe/PLd
Certification	CE SIL3
Protection	
Safety short-circuit protection, overheating protection stop and restart, current limiting, reverse polarity protection, overload protection, transient noise protection, overvoltage protection, failure pulse protection	
Output	
Safe output	2-way redundant PNP and 2-way NPN Normally close signal output
Input	1-way 0V output (door open-close/door locking/fault indication, etc.)
Technical parameters	
Lock bolt insertion deviation	Max.:±2mm
Locking retention force Fmax (ISO 14119)	Above 1300N
Locking retention force Fzh (ISO 14119)	Above 1300N
Min. radius of use for revolving door	¡ 220mm
Operating voltage	DC 24V±15%
Rated Power	4.6W (no load)¡ø
Output current	Max.:200mA
Output conductive voltage drop	<2.5V@200mA
Leakage current	<100uA
Operating frequency	0.5 Hz
Response time	100ms (independent working)
Risk time	100ms
Starting time	3.5s
Protection level	Ip65
Operating temperature	0¡› +55¡
Relative humidity	5.¡› .95%
Material	Nylon/Zinc Alloy/Stainless Steel

Product dimensions



MT SERIES DOOR LOCK HANDLE

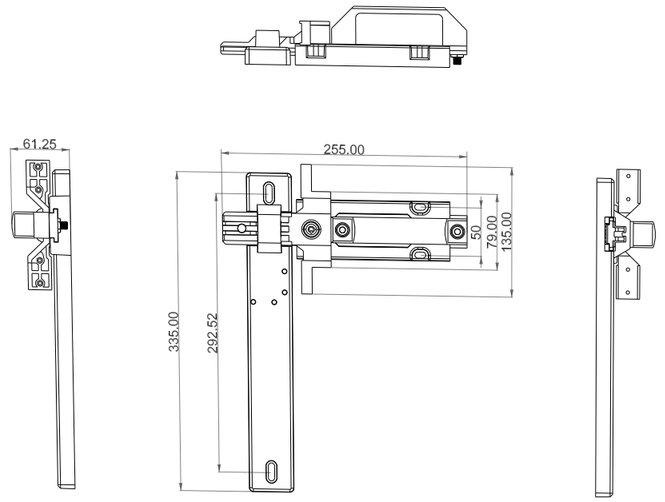
Characteristics

Can be matched with normal security door locks, can also be matched with electromagnetic locking safety door locks, with the exclusive key, can effectively prevent misopening Two levels of protection to safely maintain locked or opened door status Optional left or right handles

Specification

Appearance	Specification	Content	Model	Applicable door switch
	Weight: about 0.6kg Mechanical service life: more than 20, 000 times	Slide key: 1 (not yet installed) Door lock mounting plate: 1 Mounting screws for door switch: 4 Operating key: 1 Door switch pull handle: 1 Locking key: 2	MT-NSK10	MT-D4NS MT-D4SL

Dimension diagram



MSR SERIES
SAFETY RELAY

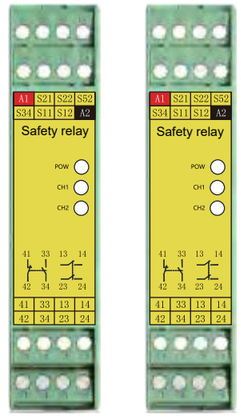
Technical parameters

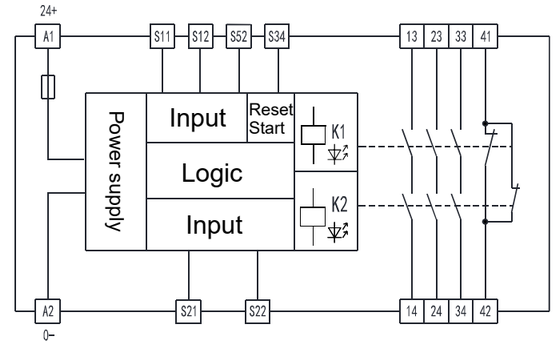
MOTEE Smart Safety Relay MSR-P and MSR-N are safety relays with 3 normally open (NO) safety output contacts and 1 Normally close (NC) auxiliary output contact for use on safety gratings. It supports single and double channel operation, manual or automatic reset, and has built-in self-diagnostics for detecting faults.

Technical parameters

Model		MSR-N	MSR-P
Type		Matching NPN grating	Matching PNP grating
Standards-compliant		EN ISO 13849-1	
		EN ISO 13849-2	
		EN 62061	
		IEC 61508	
		IEC 62061	
Conformity performance index (PL)		e(EN ISO 13849-1)	
Safety integrity level (SIL)		3(IEC6150¡¢IEC62061)	
Corresponding security categories		4(EN ISO 13849-1)	
Rated power supply voltage		24V AC/DC-15%+10%	
Module power consumption		At ¡ 3W (24VDC)	
Overcurrent protection		Built-in, electronic	
Min. applicable load (reference value)		5VDC/10mA (initial value)	
Release buffer time		Emergency stop switch 30ms or below	
Rated insulation voltage		250V AC	
Rated pulse withstand voltage		6KV (1.2/50us) (input-output)	
6KV vibration resistant		10~55Hz single amplitude 0. 35mm	
Overvoltage category		III	
Contamination degree		2	
Protection level		IP20	
Safety output contact	Number of contacts	3NO+1NC	
	Contact type	Compulsory orientation	
	Contact fuse protection	10AgL/gG (normally open contact)	
		6AgUgG (normally close contacts)	
Mechanical durability		More than 10 million times	
Output contact rated value	AC-15	5A/230V AC	
	DC-13	5A/24V DC	
Service ambient temperature		-20~+60°C (no icing)	
Storage ambient temperature		-40~+85°C (no icing)	
Service ambient humidity		10~90%RH (no condensation)	
Storage ambient humidity		10~90%RH (no condensation)	

Technical parameters

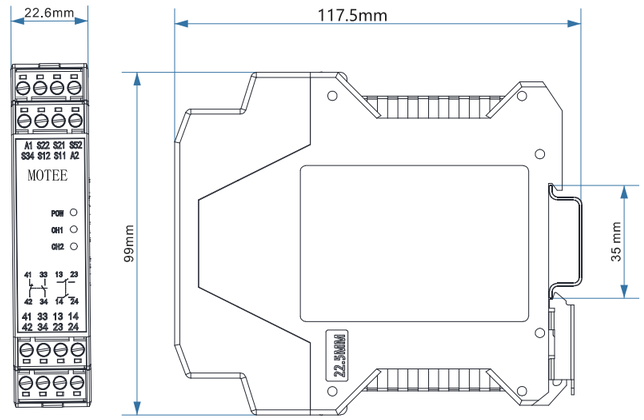




Panel display	Description		Note
A1	Power supply +24V DC input	Power supply 24V AC input	
A2	Power supply OV DC input		
S11	Satey Input 1		Connectable to contact output devices only
S12			
S52			
S21	Satey Input 2		
S22			
S34	Reset Start Input		
13-14	3-way normally open safety output contact (NO)		Rrating value AC-15,5A 230V DC-13,5A 24V
23-24			
33-34			
41-42	1-way normally close safety output contact (NC)		
POW	Green LED, light on at power-up		
Ch1	Green LED, safety relay K1 closed light up		
Ch2	Green LED, safety relay K2 closed light up		

Product dimensions

Outline dimensions: 117.5mm*99mm*22.6mm



MT LASER OBSTACLE AVOIDANCE RADAR

Laser obstacle avoidance radar

Characteristics

MT-LR10 series is the latest industrial obstacle avoidance laser radar, which has a 270° scanning angle, can divide 64 independent channels, and can support serial (Type-C interface) communication.

Excellent resistance to light interference

Max. resistance to light interference up to 80,000 Lux

±2cm Detecting distance accuracy

Advanced light path design for high precision ranging

Compact and flexible

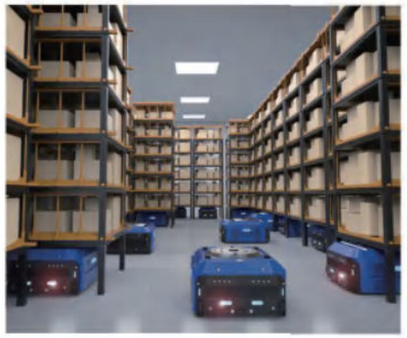
Volume is 50mm*50mm*72mm

IP65 protection level

Applicable to many complex environments

Application scenario

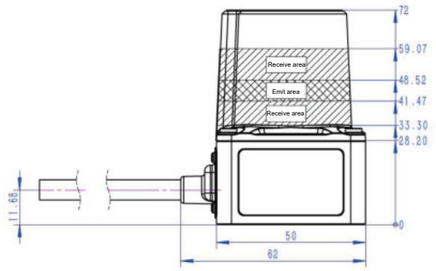
Suitable for AGV obstacle avoidance, forklift obstacle avoidance, industrial safety protection and other scenes.

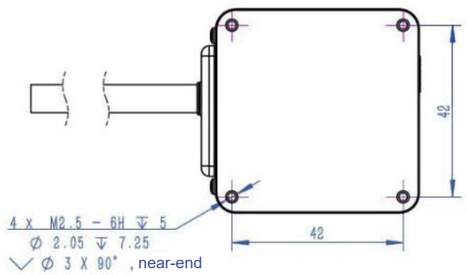


Technical parameters

Category	Laser obstacle avoidance radar	
Model	MT-LR10N	MT-LR10P
Signal	NPN	PNP
Detection range	270°	
Scanning frequency	25 Hz	
Detecting distance accuracy	±2cm	
Starting time	<10s	
Detection output delay	0~2s range can be set	
Detection size	Settable in 0~5° range	
Operating temperature	-10¡ ~50¡	
Environmental humidity	80% or below, no condensation	
Protection level	IP65	
Data sampling rate	18KHz/54KHz	
Angular resolution	0.5°	
Response time	40ms	
Communication interface	USB-TYPE C (serial port)	
Detection hold delay	0~2s range can be set	
Switching input	6 (NPN)	
Storage temperature	-20¡ ~70¡	
Ambient light resistant	80000Lux	
Power supply source	DC 9V~28V	
Communication interface	USB-TYPE C (serial port)	
Detection hold delay	0~2s range can be set	
Switching input	6 (NPN)	
Storage temperature	-20¡ ~70¡	
Equipment size	50mm(L)*50mm(W)*72mm(H)	
Equipment power consumption	Rated power: <1W (no load) Starting power: <3W (no load)	
Switching output	4 (3 area signal, 1 fault signal)	
Indicator light	4 (3 area signal, 1 fault signal)	
Number of channels	64 (each channel contains 3 detection areas)	

Dimension diagram

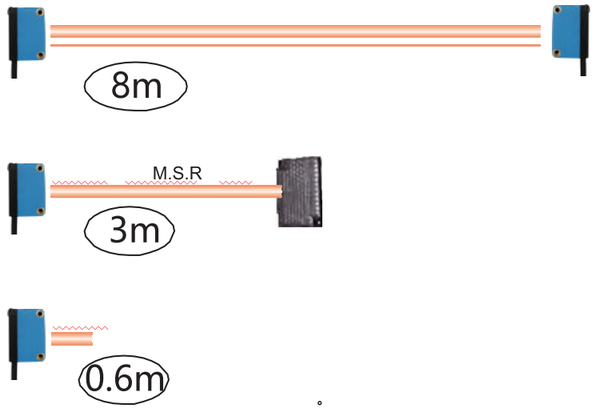




EZ NORMAL SQUARE PHOTOELECTRIC SENSOR

Amplifier built-in type with industry top class detection distance

Through-beam type (red light source type, detection distance 8m) product is equipped with a filters to prevent mutual interference. Various reflective products (2 units) are equipped with a function to prevent mutual interference.
A long-range through-beam type with a detection distance of 30 meters (response time 2ms) is also available.

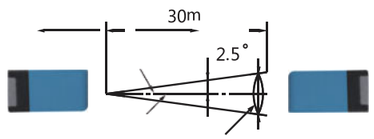


Guaranteed low-temperature performance, even in refrigerated warehouses

Extended ambient temperature range of -40 to +55 degrees Celsius

Improved consistency between optical axis and mechanical shafts

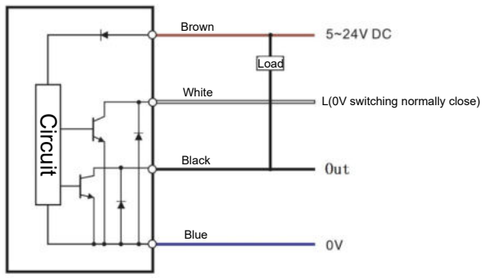
The deviation between the optical axis and mechanical axis is controlled within +-2.5 degrees, and only needs to be mounted in conjunction with the mechanical shafts to achieve high-precision alignment with the optical axis. Longer detection distances are realized (through-beam type, regression reflection type).



It protects sensors even if wiring is wrong

Equipped with output reverse connection protection function. (Diodes for reverse connection protection added to output lines)

Wiring diagram



Category

Detection method	Shape	Detection distance	Light source	Model	
				NPN output	PNP output
Through-beam type (light projector + light receiver)		8m	Red light (640nm)	EZ-T61	EZ-T61P
			Infrared light (950nm)	EZ-T51	EZ-T51P
Regression reflection type (specular type)		3m	Red light (640nm)	EZ-R61	EZ-R61P
				EZ-R61S	EZ-R61PS
Diffuse reflection type		10CM	Red light (640nm)	EZ-D61	EZ-D61P
			Infrared light (950nm)	EZ-D51	EZ-D51P
Diffuse reflection type		30CM	Red light (640nm)	EZ-D62	EZ-D62P
			Infrared light (950nm)	EZ-D52	EZ-D52P

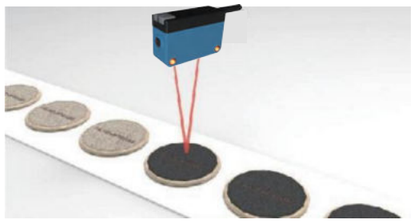
Rated specification and performance

Detection method Through-beam type				Regression reflection type	Diffuse reflection type
Model	NPN output	Wire lead	EZ-T61	EZ-R61 EZ-R61S	EZ-D61 EZ-D62
Detecting objects		Opaque objects ¡ 12mm in diameter		Opaque objects ¡ 5mm in diameter	100X100 white drawing paper
Light source (wavelength)		640nm red light			
Power supply voltage		DC12-24V pulsation (p-p) 10% or below (DC10-30)			
Current consumption		¡ 25mA ¡ 45mA			
Control output		Load power supply current 100mA or below (residual voltage 1V or below)			
Circuit protection		Surge protection, short circuit protection, reverse polarity protection			
Response time		Action/reply under 1.0ms each			
Indicator light		Action indicator light (red)			
Ambient temperature		In action: -25¡ ~+55¡ (no icing, non-frosting) In storage: -40¡ ~+70¡ (no icing, non-frosting)			
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000Lx or below			
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH			
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1%			
Insulation resistance		20MΩ or above (DC500 megohmmeter) between the charging part and housing			
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing			
Vibration (durable)		10~50Hz,1.5mm double amplitude, reaches 1h in each direction of X, Y, Z			
Impact (durable)		500m/s² double amplitude, 3 times in each direction of X, Y, Z			
Protection structure		IP65			
Connection method		Wire lead type (standard 2m)			
Housing material		PC			

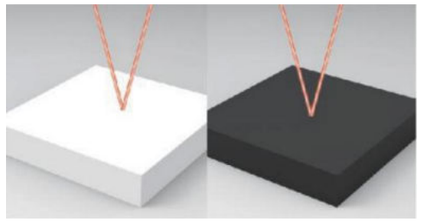
EZ-BG BACKGROUND SUPPRESSION PHOTOELECTRIC SENSOR

Perfect application of BGS function

Black and white workpieces can be detected at almost equal distances. There is no need to adjust the detection distance even when changing production on a line where different-colored workpieces are circulating.

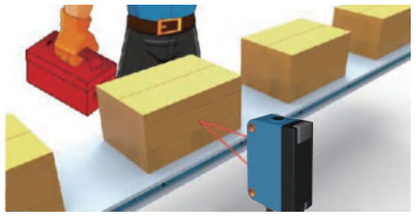


Hardly affected by changes in the color of the object to be detected, both black and white can be detected at almost the same distance.



When no background

When the workpiece is separated from the background object



Interference resistant

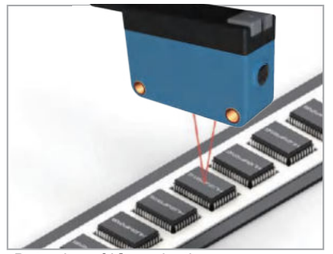
According to the unique external anti-light interference avoidance algorithm, it can effectively avoid the same-frequency light interference, and can also be resistant to variable frequency fluorescent lights.

High precision

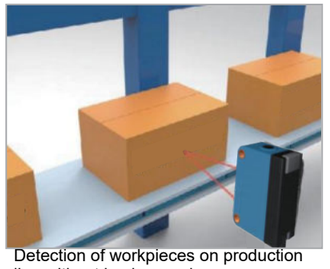
Small laser spot, high repeat accuracy

Background suppression photoelectric sensor

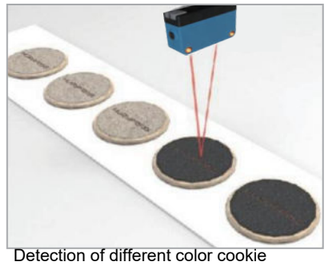
Application Examples



Detection of IC production



Detection of workpieces on production line without background



Detection of different color cookie production line

Category

Detection method	Light source	Shape (mm)	Detection range	NPN type	PNP type
Distance detection type	Laser		120mm	EZ-L61-BG	EZ-L61P-BG
			300mm	EZ-L62-BG	EZ-L62P-BG
	Red light LED		100mm	EZ-D61-BG	EZ-D61P-BG
			300mm	EZ-D62-BG	EZ-D62P-BG
			500mm	EZ-D66-BG	EZ-D66P-BG

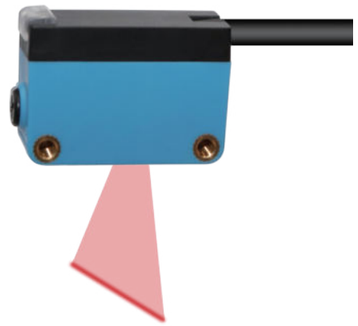
Technical parameters

Item \ Model	Category	Outgoing wire type				
	NPN output	EZ-L61-BG	EZ-L62-BG	EZ-D61-BG	EZ-D62-BG	EZ-D66-BG
		Laser light spot 2mm	Laser light spot 2mm	Min. light spot 1mm	Light spot 8-12 mm	Collimated light spot 8mm
Detection distance		10-120mm	30-300mm	5-100mm	10-600mm (Within 300mm of BG function)	10-1500mm (Within 500mm of BG function)
Output mode		NPN/PNP open integrated electrode, ¡ 100mA/30V DC				
Switching mode		L.on(light-input action)/D.on(light-darkening action) can be switched				
Indicator light		Operating indicator: green, output indicator: orange				
Response time		<2ms				
Sensitivity adjustment		Multi-turn potentiometers				
Light source		Laser, red light LED (660nm)				
Operating voltage		10~30V DC±10%				
Current consumption		¡ 30mA				
Ambient light		Daylight: 10000LX or below Incandescent light: 3000LX or below				
Ambient temperature		-25¡ -+55¡				
Environmental humidity		-35% 85% no icing				
Protection level		IP65				
Material		ABS (Housing); PC (Lens)				

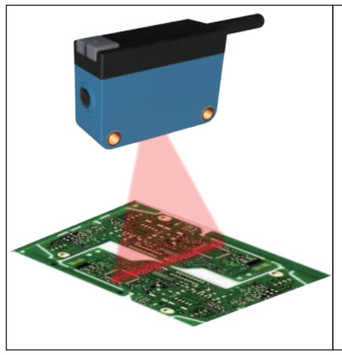
EZ DIFFUSE STRIP PHOTOELECTRIC SENSOR

Characteristics

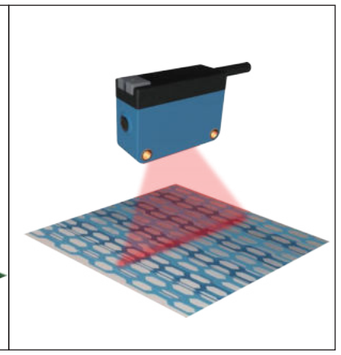
Stabilized detection light spot of 5×30mm with strip light design
Comes with BG function, especially suitable for detection of products with hollow or concave-convex surfaces
Intuitive high brightness red light high speed response
Default outgoing line of 2 meters, supports customization



Application scenario



Detection of hollow circuit boards



Detecting irregular hardware

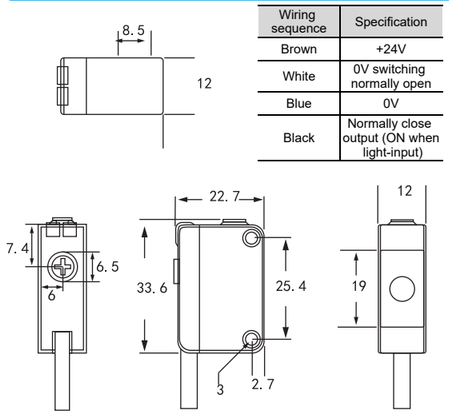
Product parameters

Limited reflection type (diffused light type)

Diffuse strip photoelectric sensor			
Category	NPN signal output	EZ-D461	EZ-D561
	PNP signal output	EZ-D461P	EZ-D561P
Detection distance		5Mm~200mm, light spot 4mm	5Mm ‘ 100mm, light spot 1mm
Light source		640nm red light	640nm laser
Min. detected object		φ2mm copper wire (setting distance 100mm), can filter up to 5mm gap or perforation	
Repeated accuracy		1mm or below	
Power supply voltage		12-24V DC±10%	
Pulsation		P-P 10% or below	
Current consumption		13mA or below	
Output		· Default NPN signal, Max. inflow current: 50mA	
		· Impressed voltage: 30V DC or below (between output and OV)	
		· Residual voltage: 2V or below (inflow current 50mA)	
Short circuit protection		Equipped	
Response time		0.5ms or below	
Working status indicator light		Power-on green LED, sensing orange LED (light on when output is ON)	
Environmental performance	Protection structure	IP67(IEC)	
	Service ambient temperature	-25~+55¡ (Note: no condensation or icing), in storage: -30~+70¡	
	Service ambient humidity	35~85%RH, in storage: 35-85%RH	
	Service ambient luminance	Incandescent light: lighted surface luminance 3000R or below	
Light projection component		640nm red LED	
Material		Housing: PC	
Cable		Rubber cable outer diameter 2.8mm, length 2m, customized extensions available	
Weight		Body weight: about 50g	

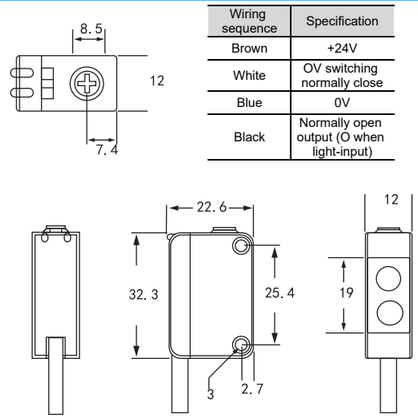
Dimension diagram (unit: mm)

EZ-R61/T61



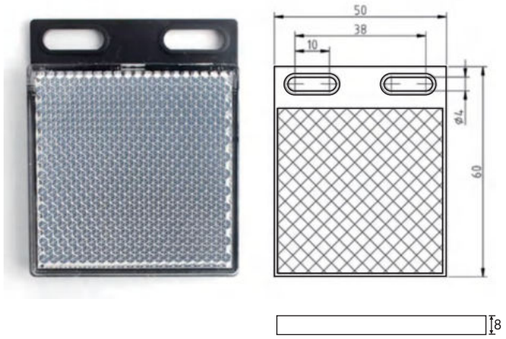
Wiring sequence	Specification
Brown	+24V
White	0V switching normally open
Blue	0V
Black	Normally close output (ON when light-input)

EZ-D62/D62-BG

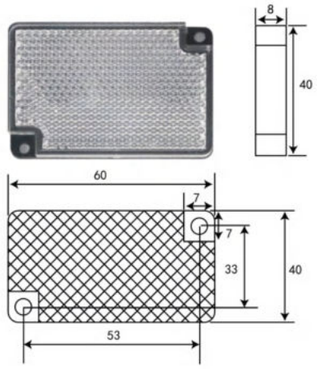


Wiring sequence	Specification
Brown	+24V
White	OV switching normally close
Blue	0V
Black	Normally open output (O when light-input)

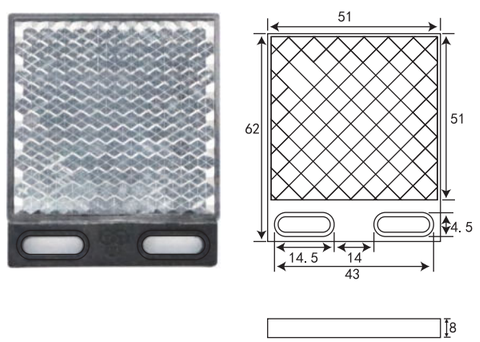
EZ-TD08



EZ-TD09



EZ-TD08B (large honeycomb)



EZ LIMITED REFLECTION TYPE PHOTOELECTRIC SENSOR

Characteristics

Limited reflection type that is not easily affected by colors and materials
Mirrors, black and transparent objects are also detected

Color stability

- Stable detection of a wide range of objects such as mirrors, black and transparent objects
- Independently of the background, effectively detects the desired objects

Distance stability

- Wide detection range and therefore strong resistance to object positional shifts
- Designed to be less susceptible to external interference

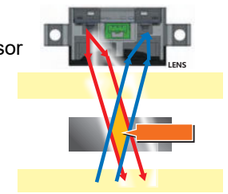
Wiring

- UX1008 4-core cable

Principle

Principle of limited reflection type sensor

Accepts reflected light from the detection object to detect the presence of the object. With an optical system that limits the projected beam and the light-receiving area, only objects that are a certain distance away from the sensor (within the range where the projected beam and the light-receiving area coincide) can be detected.



Application scenario

Detect printing paper

Printing equipment

Detect dispensing bag

Pharmaceutical dispensation machine

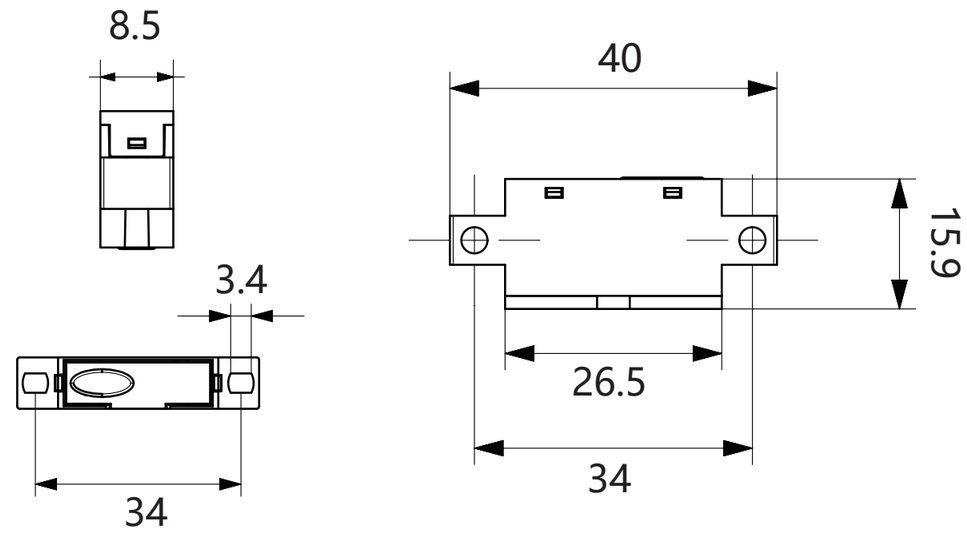
Detection container

Analytical equipment

Product parameters

Detection method		Limited reflection type			
Item		Plug-in		Outgoing wire type	
	Model	EZ-B5W	EZ-B5WP	EZ-B6W	EZ-B6WP
	Signal	NPN	PNP	NPN	PNP
					
Detection distance	White paper	2~50 mm			
	Black paper	5~45 mm			
Min. detected object (reference value)		φ0.5mm			
Hysteresis		20% or below			
Light source (luminous wavelength)		Infrared light emitting diode (850nm)			
Power supply voltage		DC 24V±10% pulsation (p-p)10% or below			
Current consumption		15mA or below (when DC26.4V)			
Control output		Load power supply voltage DC26.4V or below, load current 50mA or below (residual voltage 0.8V or below (at 50mA load current), residual voltage 0.32V or below (at 10mA load current) open collector output (NPN output)			
Response time		Action· reset: under 1ms each			
Service ambient luminance		Lighted surface luminance incandescent light: 3,000lx or below, sunlight: 10,000lx or below			
Ambient temperature range		Operating: -10~+60℃ , in storage: -25~+80℃ (no icing, condensation)			
Vibration (durable)		10~55Hz double amplitude 1.5mm 2h in each direction of X, Y, Z			
Impact (durable)		500m/s² 3 times in each direction of X, Y, Z			
Protection structure		IP50 (IEC60529 standard class 2) (except terminal section)			
Connection method		Connector type		Wire lead type	
Weight (body only)		Approx. 1.6g			
Material	Housing	Polycarbonate (PC)			
	Lens section	Acrylic resin (PMMA)			
	Cover board	Polycarbonate (PC)			

Dimension diagram (unit: mm)

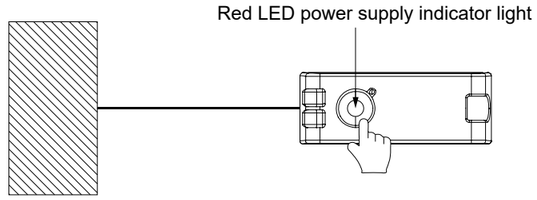


EZ
TIME OF FLIGHT SENSOR

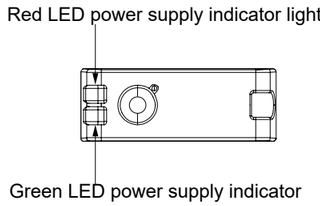
Demonstration

Single point mode:
The sensor is aligned with the object to be detected and the object is placed at the farthest detection distance, press the SET key for 1 second and then release it, the green light blinks slowly for twice at this time so that distance is set successfully.
Attention: 3 slow flashes of the green light indicates a setting failure.
Area mode:
Align the sensor with the object to be detected and place the object at the closest detection distance
Press the SET key and wait for the green light to flash rapidly and then release the key, then place the detection object at the farthest detection distance and press the SET key and wait for the green light to flash rapidly and then release it, the green light will flash slowly for twice at this time, then the area mode is set successfully.Attention: 3 slow flashes of the green light indicates a setting failure.

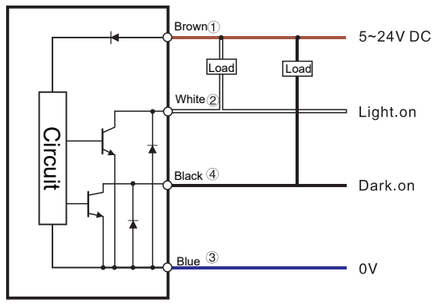
(1) Place the object to be detected at the position you want to locate and press the demonstrator.



(2) Press the demonstration key for more than 3 seconds until the red and green lights flash alternately, release the key and the demonstration is completed.



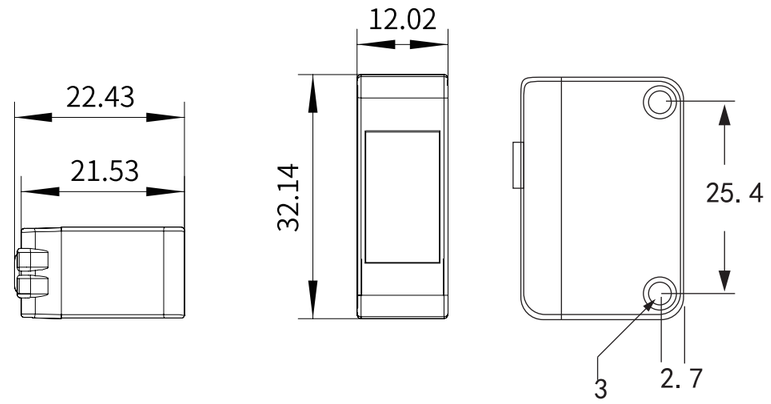
Output circuit diagram



Product parameters

Detection method		Reflexive type		
Model	NPN output	EZ-TOF2N	EZ-TOF4N	EZ-TOF2RS
	PNP output	EZ-TOF2P	EZ-TOF4P	Standard RS485 communication
Standardized detecting object		100x100mm white drawing paper		
Action mode		One-key setting TOF principle		
Detection distance		50~1500 mm	50‘ 4000mm	
Light source		Infrared LED (940nm) IEC CLASS1		
Power supply voltage		DC 12‘ 24V±10% with fluctuation (P-P)10%		
Electricity consumption		Power consumption 480mW or below (power supply voltage DC 24V, current consumption 20mA or below)		
Control output		Load power supply voltage DC26.4V or less, load current 80mA or less Open collector output (NPN/PNP output varies by model)		
Output residual voltage		Residual voltage below 1V (load current less than 10mA) Residual voltage below 2V (load current less than 10~80mA)		
Protection circuit		Power reverse connection protection/load short circuit protection/output reverse connection protection		
Answer time		Action· reset: under 100ms each		
Surrounding humidity		In action: -20~+50¡ , in In storage: -40~+70¡ (no icing or frosting)		
Ambient humidity		In action: 35‘ 85% RH, in In storage: 35‘ 95% RH (no icing or frosting)		
Ambient luminance		Sunlight: 10.000lx or below		
Protection structure		IEC60529 specification IP65		

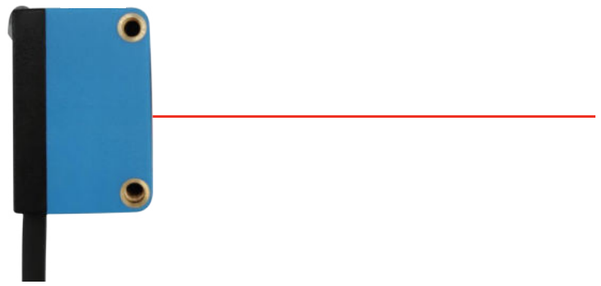
Dimension diagram



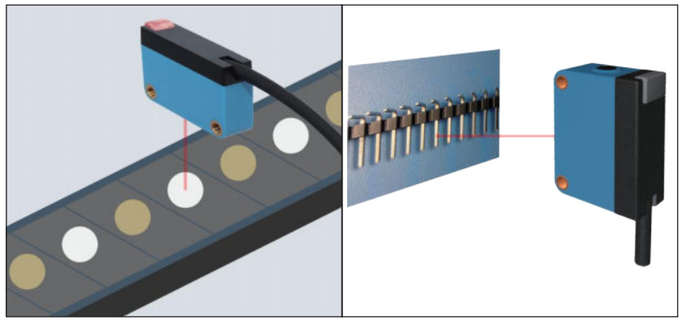
EZ LASER PHOTOELECTRIC SENSOR

Characteristics

Advantage: fast response, high precision, suitable for detecting fine objects.
Light spot: 1~2mm light point
Light source: visible red laser light source (660nm)



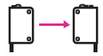
Application scenario



Detection of fine objects in high-speed assembly lines

Electronics product counting

Category

Detection method	Shape	Detection distance	Light source	Model	
				NPN output	PNP output
Through-beam type		Wire lead type (2m)	30m	EZ-LT61	EZ-LT61P
Specular reflection type		Wire lead type (2m)	5m	EZ-LR61	EZ-LR61P
Diffuse reflection type		Wire lead type (2m)	300mm	EZ-LD61	EZ-LD61P

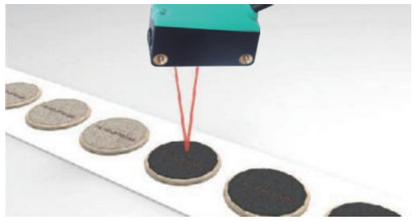
Product parameters

	Output	Through-beam type	Specular reflection type	Diffuse reflection type
Model	NPN	EZ-LT61	EZ-LR61	EZ-LD61
	PNP	EZ-LT61P	EZ-LR61P	EZ-LD61P
Detecting objects		10x10mm white drawing paper	10x10mm white drawing paper	Opaque objects ¡ 2mm in diameter
Light source (wavelength)		660nm red laser		
Power supply voltage		DC12-24V pulsation (p-p) 10% or below (DC10-30)		
Current consumption		¡ 55mA	¡ 45mA	
Control output		Load power supply current 150mA or below (residual voltage 1V or below)		
Circuit protection		Surge protection, short circuit protection, reverse polarity protection		
Response time		Action/reply under 1.0ms each		
Indicator light		Action indicator light (red)		
Ambient temperature		-25¡ ~+55¡		
Ambient illumination effect		Incandescent: 3000Lx or below		
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH		
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1%		
Insulation resistance		20MΩ or above (DC500 megohmmeter) between the charging part and housing		
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing		
Vibration (durable)		10~50Hz,1.5mm double amplitude, reaches 1h in each direction of X, Y, Z		
Impact (durable)		500m/s² double amplitude, 3 times in each direction of X, Y, Z		
Protection structure		IP65		
Connection method		Wire lead type (standard 2m)		
Housing material		ABS		

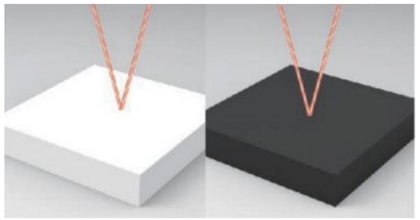
EZ HIGH-END BACKGROUND SUPPRESSION PHOTOELECTRIC SENSOR

Perfect application of BGS function

Black and white workpieces can be detected at almost equal distances. There is no need to adjust the detection distance even when changing production on a line where different-colored workpieces are circulating.



Hardly affected by changes in the color of the object to be detected, both black and white can be detected at almost the same distance.



When no background

When the workpiece is separated from the background object

It is also unaffected if the background color is changed or if someone passes by.

Interference resistant

Inverter fluorescent lights can also be countered according to a unique external interference light avoidance algorithm.

High precision

Small dynamic difference distance, can detect small segment difference.

Protection structure

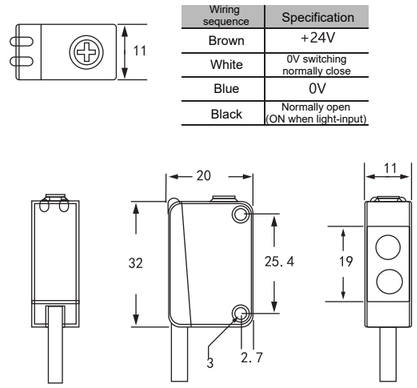
The IP65 protective structure, which prevents mutual interference, conforms to EN standard.

High-end background suppression sensor

Technical parameters

Item \ Model	Category	Red light background suppression	Laser background suppression	Strip light background suppression
	NPN output	EZ-MR100	EZ-ML100	EZ-MS100
	PNP output	EZ-MR100P	EZ-ML100P	EZ-MS100P
Light spot size		8-12mm	1-2mm	5*60mm
Detection distance		10-300mm	10-200mm	10-200mm
Output mode		NPN/PNP open integrated electrode, ¡ 100mA/30V DC		
Switching mode		L.on(light-input action)/D.on(light-darkening action) can be switched		
Indicator light		Operating indicator: green, output indicator: orange		
Response time		<2ms		
Sensitivity adjustment		Multi-turn potentiometers		
Light source		Red light LED (660nm)		
Operating voltage		10~30V DC±10%		
Current consumption		¡ 30mA		
Ambient light		Daylight: 10000LX or below Incandescent light: 3000LX or below		
Ambient temperature		-25¡ ~+55¡		
Environmental humidity		-35%-85% no icing		
Protection level		IP65		
Material		ABS (Housing); PC (Lens)		

Dimension diagram (unit: mm)



Wiring sequence	Specification
Brown	+24V
White	0V switching normally close
Blue	0V
Black	Normally open (ON when light-input)

EZ ONE-KEY SETTING PHOTOELECTRIC SENSOR

Characteristics

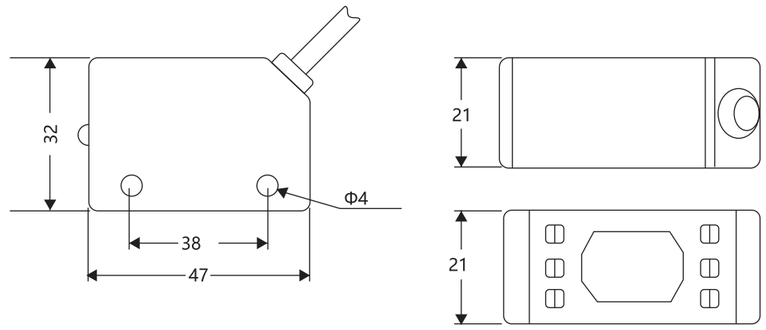
Built-in optical lens, visible red light detection status intuitive detection distance of up to 1 meter, with background elimination effect, high-speed response, one-key setting.Simple operation for transparent object detection with fixed backgrounds and product identification with large color differences

One-key setting bckground eimination photoelectric sensor

Product parameters

	Product category	One-key setting background elimination			
Model	Wire lead	Output	NPN	EZ-DG2OS	EZ-D61S
			PNP	EZ-DG20SP	EZ-D61SP
Detection distance		50-1000mm			10-100mm
Light source (wavelength)		640nm red light			
Power supply voltage		DC12-24V pulsation (p-p) 10% or below (DC10-30)			
Current consumption		¡ 45mA			
Control output		Load power supply current 100mA or below (normally open and normally close switchable)			
Circuit protection		Surge protection, short circuit protection, reverse polarity protection			
Response time		Action/reply under 1.0ms each			
Indicator light		Action indicator light (red)			
Ambient temperature		-25¡ ~+55¡			
Ambient illumination effect		Incandescent: 3000Lx or below			
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH			
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1 %			
Insulation resistance		20MΩ or above (DC500 megohmmeter) between the charging part and housing			
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing			
Vibration (durable)		10~50Hz,1.5mm double amplitude, reaches 1h in each direction of X, Y, Z			
Impact (durable)		500m/s² double amplitude, 3 times in each direction of X, Y, Z			
Protection structure		IP65			
Connection method		Wire lead type (standard 2m)			
Housing material		ABS			

Dimension diagram (unit: mm)

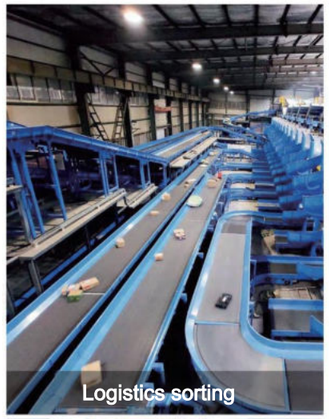


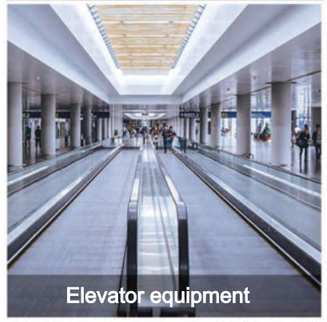
EZ LONG DISTANCE PHOTOELECTRIC SENSOR

Characteristics

Built-in optical lens, visible red light detection status intuitive
Detection distance up to 2 meters with background suppression effect High speed response, multi-turn adjustment, easy operation

Application scenario

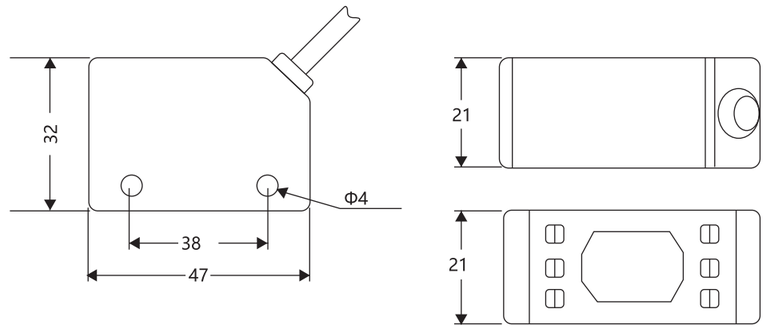




Product parameters

	Product category	Long range red light background suppression			Long range laser background suppression
Model	Wire lead	Output	NPN	EZ-DG10	EZ-LDG10
			PNP	EZ-DG10P	EZ-LDG10P
Detection distance		30-2000mm (background suppression distance 1000mm)			
Light source (wavelength)		640nm red light			660nm red laser
Power supply voltage		DC12-24V pulsation (p-p) 10% or below (DC10-30)			
Current consumption		¡ 45mA			¡ 55mA
Control output		Load power supply current 150mA or below (residual voltage 1V or below)			
Circuit protection		Surge protection, short circuit protection, reverse polarity protection			
Response time		Action/reply under 1.0ms each			
Indicator light		Action indicator light (red)			
Ambient temperature		-25¡ ~+55¡			-10¡ ~+45¡
Ambient illumination effect		Incandescent: 3000Lx or below			
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH			
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ± 1%			
Insulation resistance		20MΩ or above (DC500 megohmmeter) between the charging part and housing			
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing			
Vibration (durable)		10~50Hz,1.5mm double amplitude, reaches 1h in each direction of X, Y, Z			
Impact (durable)		500m/s² double amplitude, 3 times in each direction of X, Y, Z			
Protection structure		IP65			
Connection method		Wire lead type (standard 2m)			
Housing material		ABS			

Dimension diagram (unit: mm)



EZ THIN PHOTOELECTRIC SENSOR

Characteristics

Rugged body

Adopts PBT rugged body for durability and long service life

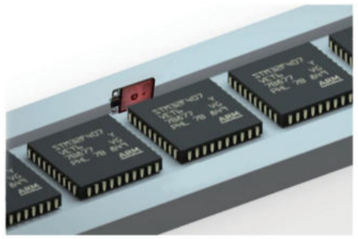
Ultra-small volume

Small size, small detection blind area range, detectable closing to the detection window

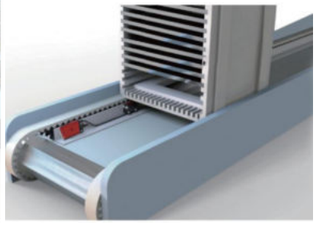
Simple installation

Easy mounting with standard M2 screws

Application scenario



Chip detection or counting

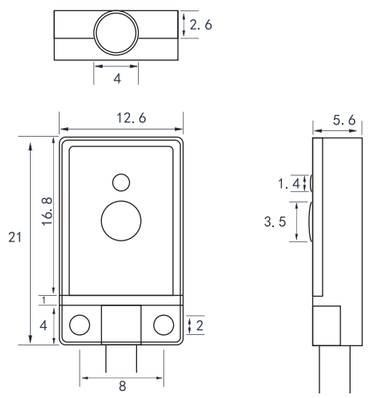


Original point in-place signal

Product parameters

Appearance diagram (The picture is for reference only, the specific in kind shall prevail)			
Outline		Flat F-type	
Model	NPN	EZ-FT11	EZ-FD11
	PNP	EZ-FT11P	EZ-FD11P
	Type	Through-beam type	Reflexive type
Detection distance		0.6M	2~30 mm
Light point diameter		3~8mm (the farther the larger)	Approx. 5mm (at 30mm)
Light source		Point light source red LED (650nm)	
Response time		Max. 1ms	
Indicator light		Output: red; stabilized operation; green; transmissive emitter power supply: green	
Power supply voltage		10~30VDC with ripple current(P-P)10%	
Current consumption		15mA	20mA
Control output		NPN output type: NPN open collector 30VDC or below, 50mA or below; Residual voltage: below 10mA, below 1.5V for 10~30mA, below 2.0V for 30~50mA	

Dimension diagram (unit: mm)



EZ ULTRA-THIN PHOTOELECTRIC SENSOR

Ultra-thin and ultra-small specifications

Ultra-thin and ultra-small size can be installed anywhere with just a little space

Flexible installation

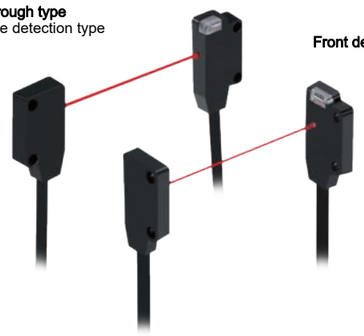
Diffuse reflection type sensors are front detection type and can be used as if they were glued to the wall.
Through-beam is equipped with two types of front detection and side detection, which can be installed flexibly

Red: working status indicator light
Green: stable indicator light

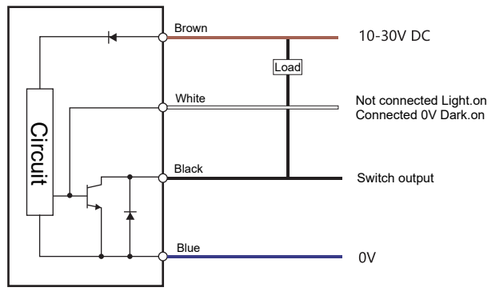
Clearly visible two-color indicator light

Through type
Side detection type

Front detection type



Compatible signal switching

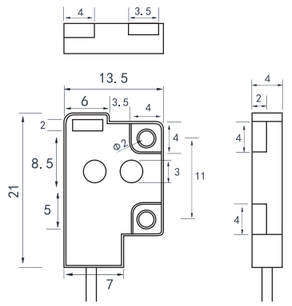


Product parameters

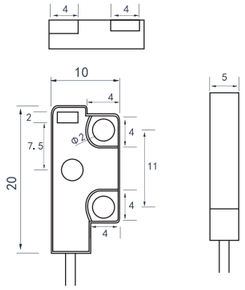
Product schematic					
Type	Diffuse reflection type	Front through-beam		Side through-beam	
NPN output	EZ-FD14	EZ-FT13	EZ-FT19	EZ-LT13	EZ-LT19
PNP output	EZ-FD14P	EZ-FT13P	EZ-FT19P	EZ-LT13P	EZ-LT19P
Detection distance	25mm (BGS function)	500mm	1000mm	500mm	1000mm
Light source (wavelength)	650nm red LED				
Detecting objects	Opaque objects over 4mm in diameter				
harshness	20% or above of the detection distance				
Control output	Black is the signal output line, normally open and normally close can be switched by the white line.				
Answer frequency	1ms or below				
Power supply voltage	DC12-24 pulsation (p-p) 10% or below (DC10-30)				
Current consumption	¡ 25mA				
Control output — Switching capacity	¡ 3W				
Control output — Residual voltage	1V or below (load current 100mA)				
Circuit protection	Surge protection, short circuit protection, reverse polarity protection				
Indicator light	Action indicator light (red)				
Ambient temperature	In action -25¡ ~+70¡ (no icing, non-frosting) In storage: -40¡ ~+85¡ (no icing, non-frosting)				
Ambient illumination effect	Daylight: 10000LX or below Incandescent light: 3000LX or below				
Service ambient humidity	In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH				
Voltage effect	When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1%				
Insulation impedance	50MΩ or above between the charging part and housing				
Dielectric strength	AC1000V or above at 50/60Hz for 1min between the charging part and housing				
Vibration (durable)	10-55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z				
Impact (durable)	500m/s² double amplitude, 10 times in each direction of X, Y, Z				
Protection structure	IP65				
Connection method	Wire lead type (standard 2m)				
Housing material	PC				

Dimension diagram (unit: mm)

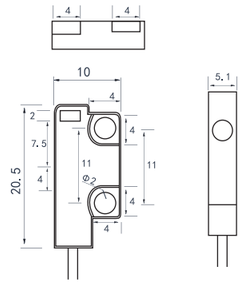
EZ-FD14



EZ-FT13



EZ-LT13



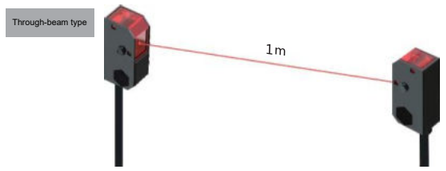
EZ SMALL PHOTOELECTRIC SENSOR

Ultra-small type specification

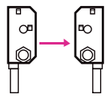
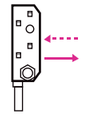
The sensor is only the size of a fingertip, ultra-small and ultra-thin, suitable for installation in a variety of narrow spaces.

Long distance detection

Despite its small size, the EZ series is capable of detecting long distances and can therefore also be useful in wide conveyor devices.



Category

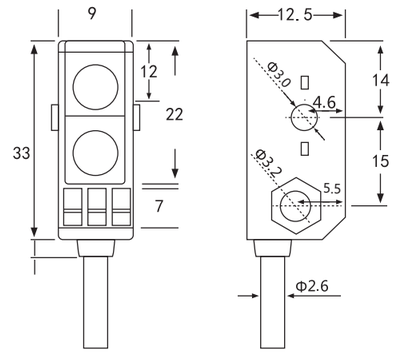
Detection method	Shape	Type	Detection distance	Model	
				NPN output	PNP output
Through-beam		Infrared light (940nm)	1m	EZ-T21	EZ-T21P
Diffuse reflective		Infrared light (940nm)	100mm	EZ-D21	EZ-D21P

Product parameters

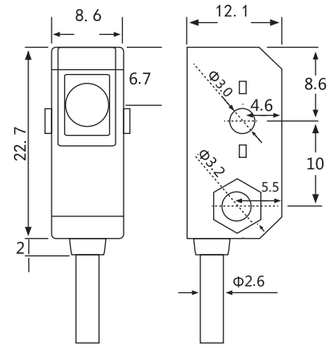
Model		Detection method	Through-beam type	Diffuse reflection type
	NPN output	Wire lead	EZ-T21	EZ-D21
Detection distance		1m		100mm
Detecting objects		Opaque objects over 4mm in diameter		
harshness		20% or above of the detection distance		
Control output		Simultaneous matching of two independent outputs NPN/PNP transistor collector outputs		
Answer frequency		1ms or below		
Power supply voltage		DC12-24 pulsation (p-p) 10% or below (DC10-30)		
Current consumption		¡ 25mA		
Control output	Switching capacity	¡ 3W		
	Residual voltage	1V or below (load current 100mA)		
Circuit protection		Surge protection, short circuit protection, reverse polarity protection nm		
Light source		infrared modulated light		
Indicator light		Action indicator light (red)		
Ambient temperature		In action -25¡ ~+70¡ (no icing, non-frosting) In storage: -40¡ ~+85¡ (no icing, non-frosting)		
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000LX or below		
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH		
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1 %		
Insulation impedance		50MΩ or above between the charging part and housing		
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing		
Vibration (durable)		10-55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z		
Impact (durable)		500m/s² double amplitude, 10 times in each direction of X, Y, Z		
Protection structure		IP65		
Connection method		Wire lead type (standard 2m)		
Housing material		PC		

Dimension diagram (unit: mm)

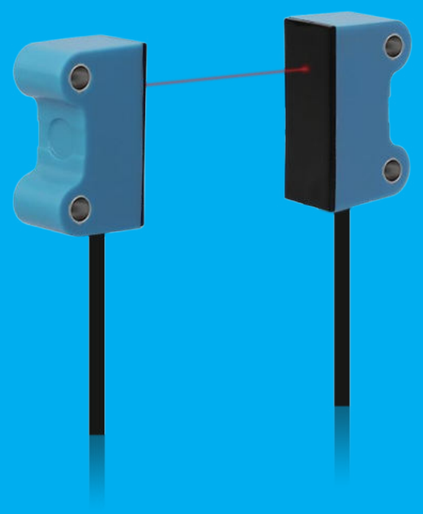
EZ-D21



EZ-T21



EZ MICRO PHOTOELECTRIC SENSOR



Characteristics

Ultra-small body

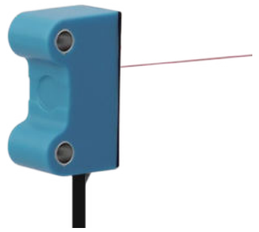
International common 15mm hole spacing

Complete category

Through-beam reflective, full range of detection methods

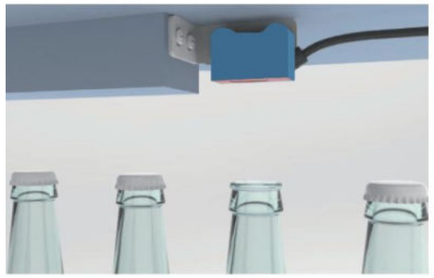
Optical lens

Built-in optical lens for detecting 0.5mm fine objects



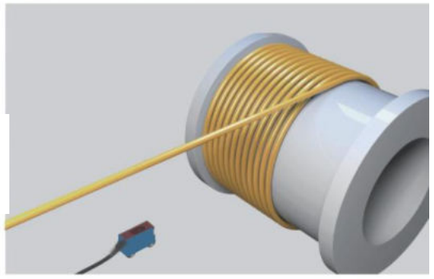
Application scenario

Scenario application



Bottle cap detection

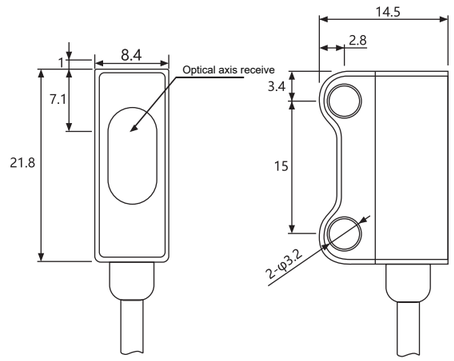
Copper wire detection



Product parameters

Model		Through-beam type	Diffuse reflection type
NPN.NO lead wire type		EZ-T31	EZ-D31
PNP.NO lead wire type		EZ-T31P	EZ-D31P
Detection distance		1500mm	100mm
Detecting objects		Opaque objects over 4mm in diameter	
harshness		20% or above of the detection distance	
Control output		Normally open and normally close switchable	
Answer frequency		1ms or below	
Power supply voltage		DC12-24 pulsation (p-p) 10% or below (DC10-30)	
Current consumption		¡ 25mA	
Control output	Switching capacity	¡ 3W	
	Residual voltage	1V or below (load current 100mA)	
Circuit protection		Surge protection, short circuit protection, reverse polarity protection nm	
Light source		960nm Infrared light	
Indicator light		Action indicator light (red)	
Ambient temperature		In action -25¡ ~+70¡ (no icing, non-frosting) In storage: -40¡ ~+85¡ (no icing, non-frosting)	
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000LX or below	
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH	
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1 %	
Insulation impedance		50MΩ or above between the charging part and housing	
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing	
Vibration (durable)		10-55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z	
Impact (durable)		500m/s² double amplitude, 10 times in each direction of X, Y, Z	
Protection structure		IP65	
Connection method		Wire lead type (standard 2m)	
Housing material		PC	

Dimension diagram (unit: mm)



EZ MICRO PHOTOELECTRIC SENSOR

Characteristics

Ultra-small body

Metal mounting holes, hole spacing 13~18mm flexible installation

Complete category

Diffuse reflection of red light with BGS function, full range of detection methods

Optical lens

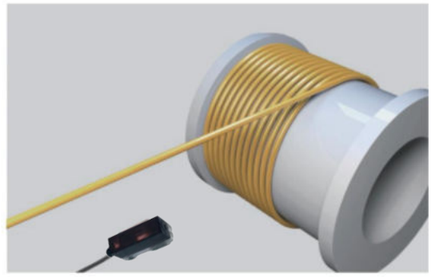
Built-in optical lens for detecting 0.5mm fine objects

Application scenario

Scenario application

Bottle cap detection

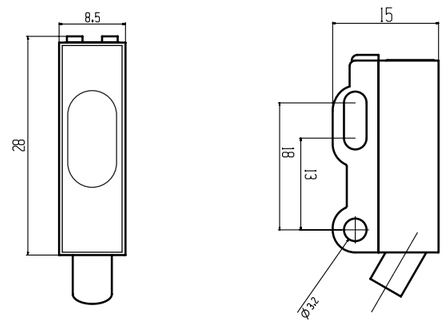
Copper wire detection



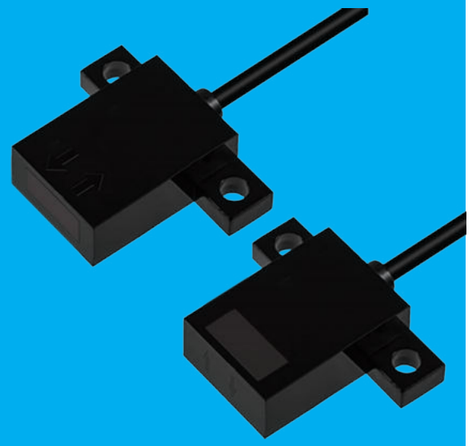
Product parameters

Model		Through-beam type	Diffuse reflection type	Laser reflection type
NPN		EZ-T41	EZ-D41	EZ-LD41
PNP		EZ-T41P	EZ-D41P	EZ-LD41P
Detection distance		5000mm	100mm	
Light spot size		6mm	2-5mm	2mm Non-diffusion
Detecting objects		Opaque objects over 1mm in diameter		
harshness		20% or above of the detection distance		
Control output		Normally open and normally close individual models		
Answer frequency		1ms or below		
Power supply voltage		DC12-24 pulsation (p-p) 10% or below (DC10-30)		
Current consumption		¡ 25mA		
Control output	Switching capacity	¡ 3W		
	Residual voltage	1V or below (load current 100mA)		
Circuit protection		Surge protection, short circuit protection, reverse polarity protection nm		
Light source		640nm red light		660nm red laser
Indicator light		Motion indicator		
Ambient temperature		In action -25¡ ~+70¡ (no icing, non-frosting) In storage: -40¡ ~+85¡ (no icing, non-frosting)		
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000LX or below		
Service ambient humidity		In action - 45% to 85% (no icing) RH In In storage: 35% to 85% (no icing) RH		
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1 %		
Insulation impedance		50MΩ or above between the charging part and housing		
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing		
Vibration (durable)		10-55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z		
Impact (durable)		500m/s² double amplitude, 10 times in each direction of X, Y, Z		
Protection structure		IP65		
Connection method		Wire lead type (standard 2m)		
Housing material		PC		

Dimension diagram (unit: mm)



EZ FLAT PHOTOELECTRIC SENSOR

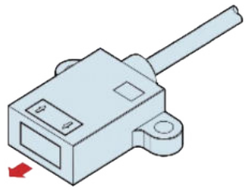


Ultra-small and space-saving

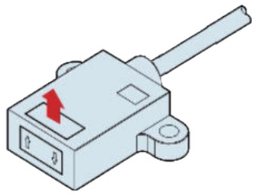
Ultra-small size, suitable for installation in various narrow spaces.

Equipped with two detection methods

There are 2 types of detection methods available, from which you can select the model that meets your installation conditions.



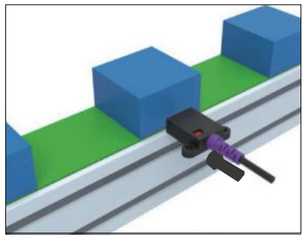
Front detection



Top detection

Application scenario

Detecting capacitance in trays



Positioning and pass detection of workpieces

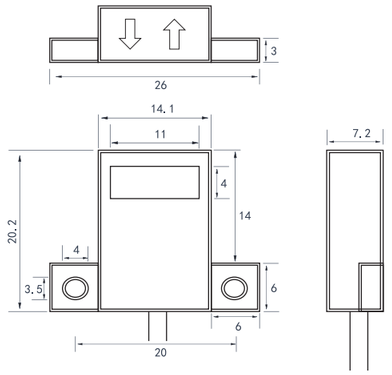
Confirmation of cardboard positioning and passing detection

Product parameters

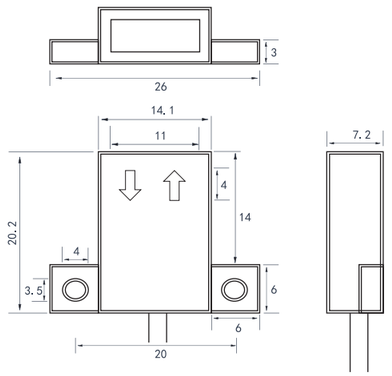
Product schematic		 EZ-WD05	 EZ-QD05
Model	NPN output	Up detection	Front detection
Detection distance		Black larger than 5mm White larger than 10mm	
Detection method		Diffuse reflection type	
Detection light source		940nm Infrared light	
Detecting objects		Opaque objects over 4mm in diameter	
harshness		20% or above of the detection distance	
Control output		Light-input ON	
Answer frequency		1ms or below	
Power supply voltage		DC12-24 pulsation (p-p) 10% or below (DC10-30)	
Current consumption		¡ 25mA	
Circuit protection		Surge protection, short circuit protection, reverse polarity protection	
Indicator light		Action indicator light (red)	
Ambient temperature		In action -25¡ ~+70¡ (no icing, non-frosting) In storage: -40¡ ~+85¡ (no icing, non-frosting)	
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000LX or below	
Protection structure		IP65	
Link method		Wire lead type (standard 2m)	
Housing material		PC	

Dimension diagram (unit: mm)

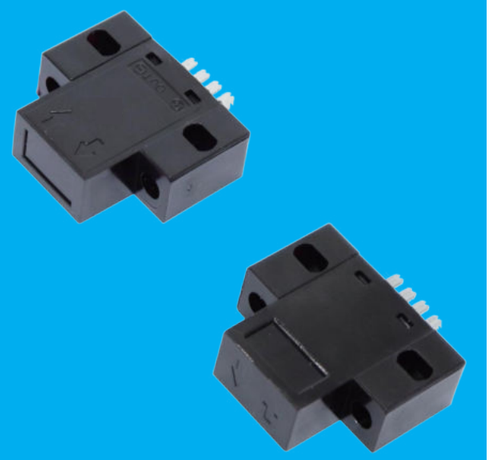
EZ-WD05



EZ-QD05



EZ FLAT PHOTOELECTRIC SENSOR

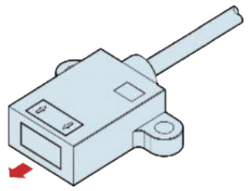


Ultra-small and space-saving

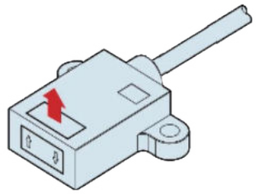
Ultra-small size, suitable for installation in various narrow spaces.

Equipped with two detection methods

There are 2 types of detection methods available, from which you can select the model that meets your installation conditions.



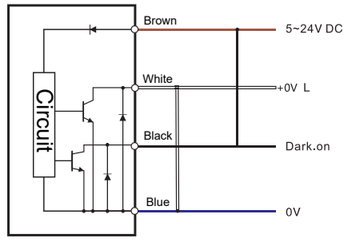
Front detection



Top detection

Wiring method

DC line 4-wire NPN output



Connection cable

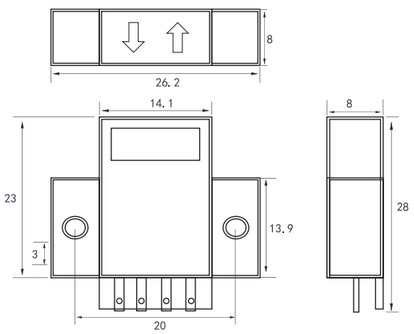
UX1006

Product parameters

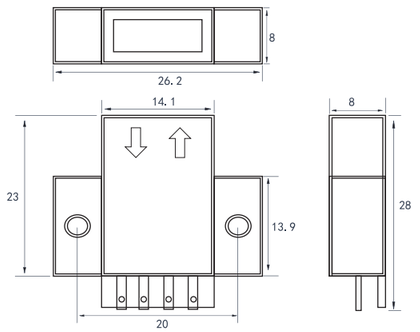
Product schematic		 EZ-WD15	 EZ-QD15
Model	NPN Output	Up detection	Front detection
Detection distance		Black larger than 5mm White larger than 10mm	
Detection method		Diffuse reflection type	
Detection light source		940nm Infrared light	
Detecting objects		Opaque objects over 4mm in diameter	
harshness		20% or above of the detection distance	
Control output		Light-input ON	
Answer frequency		1ms or below	
Power supply voltage		DC12-24 pulsation (p-p) 10% or below (DC10-30)	
Current consumption		¡ 25mA	
Circuit protection		Surge protection, short circuit protection, reverse polarity protection	
Indicator light		Action indicator light (red)	
Ambient temperature		In action -25¡ ~+70¡ (no icing, non-frosting) In storage: -40¡ ~+85¡ (no icing, non-frosting)	
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000LX or below	
Protection structure		IP65	
Link method		Wire lead type (standard 2m)	
Housing material		PC	

Dimension diagram (unit: mm)

EZ-WD15



EZ-QD15



E3F CYLINDRICAL PHOTOELECTRIC SENSOR

Cost effective

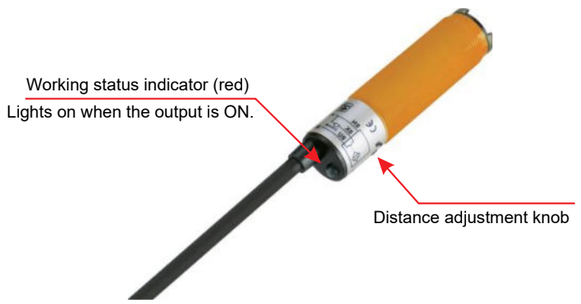
Complete variety of specifications, cost-effective
.

Rugged body

Default plastic housing, optional metal housing-J

Adjustable detection distance and clearly visible working status indicator light.

Adjustable detection distance, easy installation, space saving, suitable for small installation space.



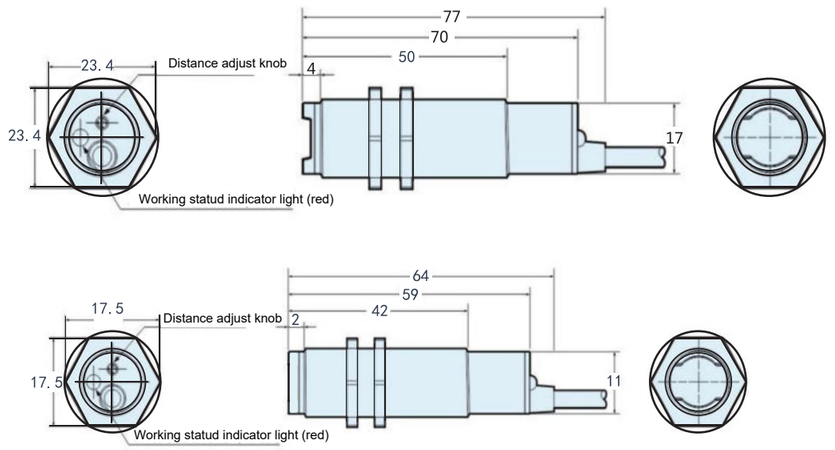
Selection rule

Detection method	Shape (mm)	Light source	Detection distance	NPN type	Dimension
Background suppression		Red light	100mm	E3F-DM18BG	M18
Diffuse reflective		Infrared light	100mm	E3F-DM12	M12
			400mm	E3F-DM18	M18
Through-beam			5m	E3F-TM12	M12
			10m	E3F-TM18	M18
Through-beam		Laser	20m	E3F-LTM12	M12
			40m	E3F-LTM18	M18

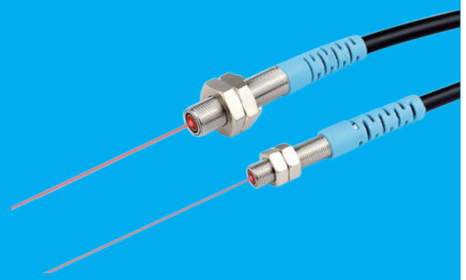
Product parameters

Model	NPN output	Detection method	Diffuse reflection type		Through-beam type			
		Wire lead	E3F-DM12	E3F-DM18	E3F-TM12	E3F-TM18	E3F-LTM12	E3F-LTM18
Detection distance		100mm		400mm	5m	10m	20m	40m
Detecting objects		100X100mm white drawing paper			Opaque objects over 12mm in diameter			
harshness		Less than 20% of detection distance						
Light source (wavelength)		GaAs infrared light emitting diodes (850nm)			660nm red laser			
Power supply voltage		DC12-24V pulsation (p-p) 10% or below (DC10-30)						
Current consumption		¡ 25mA			¡ 45mA			
Control output		Load power supply current 100mA or below (residual voltage 1V or below)						
Response time		Action/reply under 1.0ms each						
Circuit protection		Surge protection, short circuit protection, reverse polarity protection						
Indicator light		Action indicator light (red)						
Ambient temperature		In action: -25¡ ~+55¡ In storage: -30¡ ~+70¡ (no icing)						
Ambient illumination effect		Daylight: 10000LX or below Incandescent light: 3000Lx or below						
Service ambient humidity		In action - 45% to 95% (no icing) RH In In storage: 35% to 85% (no icing) RH						
Voltage effect		When the rated power supply voltage fluctuates within ±15%, the detection distance changes within ±1%						
Insulation resistance		50MΩ or above (DC500 megohmmeter) between the charging part and housing						
Dielectric strength		AC1000V or above at 50/60Hz for 1min between the charging part and housing						
Vibration (durable)		10~55Hz,1.5mm double amplitude, reaches 1h in each direction of X, Y, Z						
Impact (durable)		500m/s² double amplitude, 3 times in each direction of X, Y, Z						
Protection structure		IP67						
Connection method		Wire lead type (standard 2m)						
Housing material		Housing: Metal light projecting section/Light receiving section: PC						

Dimension diagram (unit: mm)



E3F LASER OPTICAL FIBER PHOTOELECTRIC SENSOR



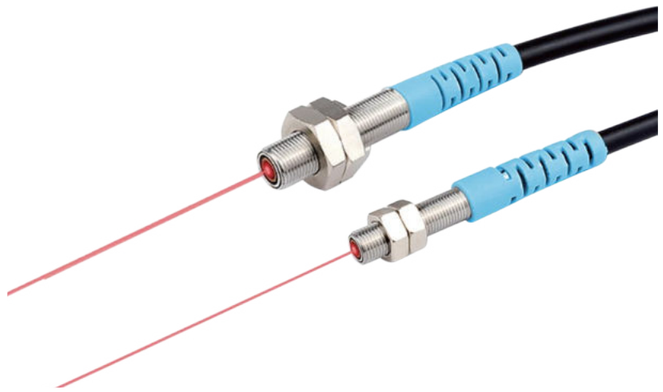
Characteristics

Rugged body

Laser diffuse optoelectronic sensor in small volume

Visible laser

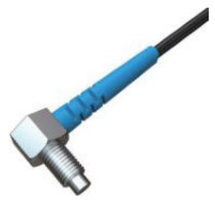
(660nm) Visible red light is intuitive, compact and stable



Multiple models

M5 diffuse

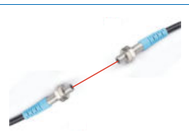
M5 through-beam



Right-angle M5 Diffuse Z

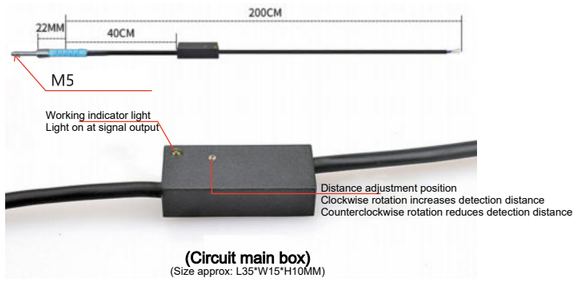
Right-angle M5 Through-beam Z

Product parameters

Appearance				
NPN Model PNP Model	E3F-LDM5 E3F-LDM5P	E3F-LDM5Z E3F-LDM5ZP	E3F-LTM5 E3F-LTM5P	E3F-LTM5Z E3F-LTM5ZP
Detection distance	0-100mm		0-3000mm	
Output method	NPN/PNP Normally Open/Normally close Standard 2.			
Light spot size	0MM or so			
Operating voltage	10-30VDC			
No load current	<10mA			
Max. load	150mA			
Leakage current	<0.01mA			
Voltage drop	<1.5V			
Switching frequency	100 Hz			
Response time	5ms			
Switch hysteresis	<15%(Sr)			
Repeated accuracy	<5-10%(Sr)			
Protection level	P65			
Working environment	0¡ -50¡			
Temperature drift	<10%(Sr)			
Short circuit protection	YES			
Overload protection	100mA			
Standard wire length	2m			

Dimension diagram (unit: mm)

E3F Series



E3F PHOTOELECTRIC LIQUID LEVEL SENSOR

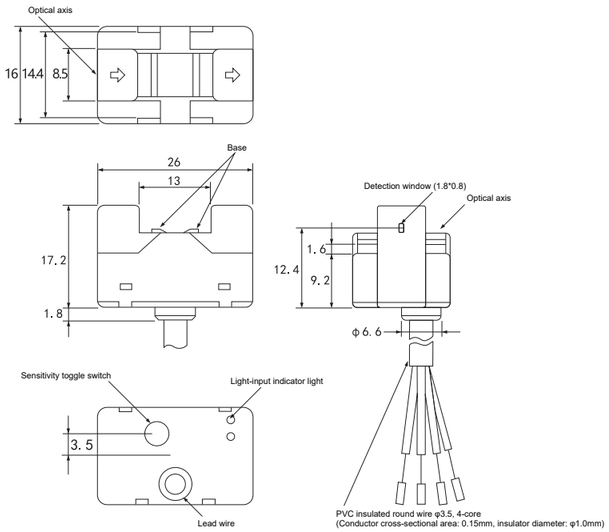
Characteristics

- Liquid level sensor with output action switching function and sensitivity switching function for easier use
- More intelligent sensors with one-key setting
- Suitable for transparent and semi-transparent tubes of φ6~13mm and 1mm thickness
- Use of environmentally friendly wires (no powder strippers)

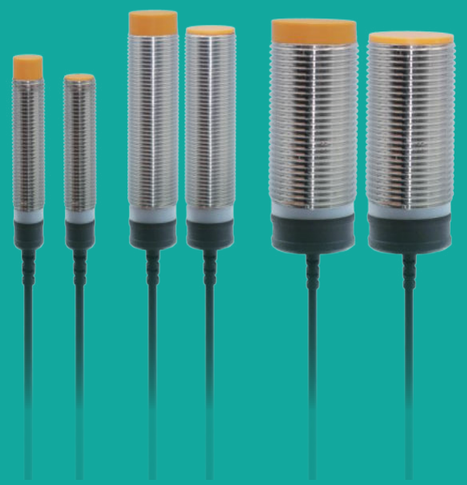
Shape	Detection method	Output form	Action mode	Wire length	Model
	Through-beam	NPN	ON when light-darkening ON when light-input	2m	E3F-SPX613
		PNP			E3F-SPX613P

Product parameters

Item model		E3F-SPX613 E3F-SPX613P
Applicable tube		Transparent tube with outer diameter φ6~13mm (thickness 1mm) (FEP (Fluorocarbon Polymer) or material with equivalent transparency)
Standardized detecting object		Fluid in tube (If the liquid is highly viscous or mixed with suspended matter, it may not be detected)
Light source (Max. luminous wavelength)		GaAs infrared light emitting diodes (940nm)
Motion indicator		Light on GaP when light-input (red LED: Max. wavelength 700nm)
Power supply voltage		DC12~24V±10% Ripple(p-p)5% or below
Current consumption		Average value 30mA or below, Max. value 80mA or below
Control output		Load power supply voltage DC5~24V, load current below 100mA NPN open collector output type
Service ambient luminance		Incandescent light, sunlight: below 3,000lx each
Ambient temperature range		Operating: -10~+55¡ In storage: -25~+65¡ (no icing or frosting)
Ambient humidity range		In operating: 5~85% RH storage: 5~95% RH (no condensation)
Vibration (durable)		10~500Hz single amplitude 1.0mm or acceleration 150m/s 3 sweeps frequency in each direction of X, Y, Z (11min/sweep frequency)
Impact (durable)		500m/s 3 times in each direction of X, Y, Z
Protection structure		IEC specification IP50
Connection method		Wire lead type (standard wire length 1m)
Quality (after packaging)		Approx. 55g
Material	Housing	ABS+PC
	Cover cap	



EB-M 3-WIRE CYLINDRICAL PROXIMITY SENSOR



Complete category

The product specification is complete in size, and the model can be selected according to the installation requirements.

Quality assurance

Adopts specialized IC for longer service life.

Protection circuit

Surge protection circuit, short circuit protection, reverse polarity protection.

Protection level IP67

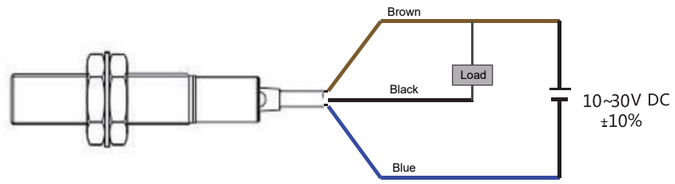
Realizes IP67 protective construction, excellent resistance to water and oil.

Selection rule

EB – M 30 KN 20 N C – □

- Dimension: standard body length (default not written) C2= wire length 2m (default not written)
- Output: O= normally open (default not written) C= normally closed
- Signal: N=NPN P=PNP
- Distance: 1, 2, 4, 8, 10, 15, 20
- Convex header: KN non-flush KS flush LN double non-flush LS double flush
- Diameter: 5, 8, 12, 18, 30
- Shape: M threaded cylinder Q square front W square top
- Category: EB= Inductive proximity EB-DR= Capacitive proximity

Connection diagram



Category

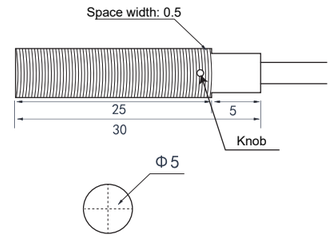
	Category	Dimension	Detection distance	NPN type	PNP type	Output action
Standard distance type	Flush	M5	1mm	EB-M05KS01N	EB-M05KS01P	Normally open
				EB-M05KS01NC	EB-M05KS01PC	Normally close
	Flush	M8	1.5mm	EB-M08KS01N	EB-M08KS01P	Normally open
				EB-M08KS01NC	EB-M08KS01PC	Normally close
	Non-flush	M8	2mm	EB-M08KN02N	EB-M08KN02P	Normally open
				EB-M08KN02NC	EB-M08KNO2PC	Normally close
	Flush	M12	2mm	EB-M12KSO2N	EB-M12KS02P	Normally open
				EB-M12KSO2NC	EB-M12KS02PC	Normally close
	Non-flush	M12	4mm	EB-M12KN04N	EB-M12KN04P	Normally open
				EB-M12KN04NC	EB-M12KN04PC	Normally close
	Flush	M18	4mm	EB-M18KS04N	EB-M18KS04P	Normally open
				EB-M18KS04NC	EB-M18KS04PC	Normally close
	Non-flush	M18	8mm	EB-M18KN08N	EB-M18KN08P	Normally open
				EB-M18KN08NC	EB-M18KN08PC	Normally close
	Flush	M30	10mm	EB-M30KS10N	EB-M30KS10P	Normally open
				EB-M30KS10NC	EB-M30KS10PC	Normally close
	Non-flush	M30	16mm	EB-M30KN16N	EB-M30KN16P	Normally open
				EB-M30KN16NC	EB-M30KN16PC	Normally close

Product parameters

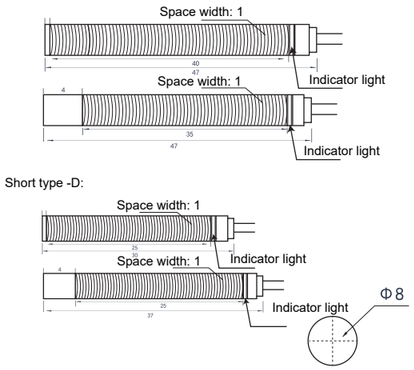
Item \ Model	Category				
					
	EB-M05KS	EB-M08KS EB-M08KN	EB-M12KS EB-M12KN	EB-M18KS EB-M18KN	EB-M30KS EB-M30KN
Outer diameter size	5mm	8mm	12mm	18mm	30mm
Detection distance	1.0mm±10%	2mm±10%	4mm±10%	8mm±10%	15mm±10%
Setting distance	0~1.2mm	0~1.6mm	0~4mm	0~8mm	0~14mm
Detecting objects (iron)	8x8x1mm	12x12x1mm	18x18x1mm	30x30x1mm	54x54x1mm
Answer frequency	1KHZ			500HZ	
Repeated accuracy	0.01mm				
Detecting objects	Magnetic metal (reduced detection distance for non-magnetic metal)				
Hysteresis distance	Less than 10% of detection distance				
Power supply voltage	10~30VDC				
Current consumption	10mA or below				
Control output	Load power supply current 100mA or below (residual voltage 1V or below)				
Indicator light	Action indicator light (red)				
Motion form	NO: Normally open NC: Normally close				
Protection circuit	Surge protection circuit, short circuit protection, reverse polarity protection				
Ambient temperature	In action: -25 to +70°C In storage: -40 to 85°C (no icing)				
Environmental humidity	In action, in storage: 35-90% RH each (non-frosting)				
Temperature effect	Temperature range -25~70¡ , detection distance changes within ±15% for every 23¡ difference.				
Voltage effect	When the rated power supply voltage fluctuates within +15%, the detection distance changes within +1%				
Insulation impedance	50MΩ or above (DC500 megohmmeter) between the charging part and housing				
Voltage-resistant	AC1000V or above at 50/60Hz for 1min between the charging part and housing				
Vibration (durable)	10~55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z				
Impact (durable)	500m/s² double amplitude, 10 times in each direction of X, Y, Z				
Protection structure	IP67				
Link method	Wire lead type (standard 2m)				
Material – Housing	Copper plating				
Material – Detection surface	PBT				
Material – Fastening nut	Brass plating				
Material – Washer with teeth	Ferrous plating				

Dimension diagram (unit: mm)

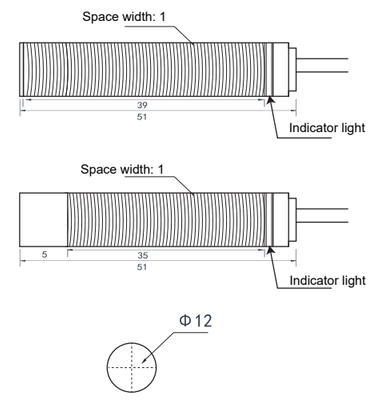
EB-M05KS/KN



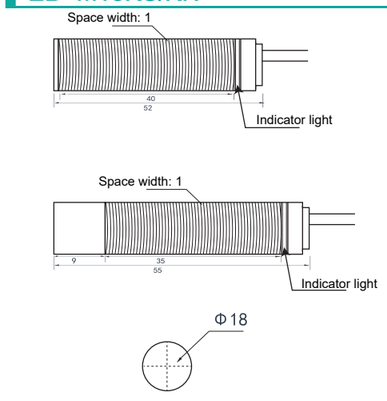
EB-M08KS/KN



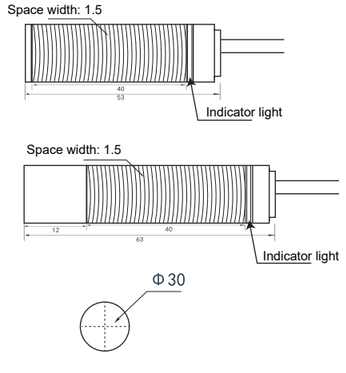
EB-M12KS/KN



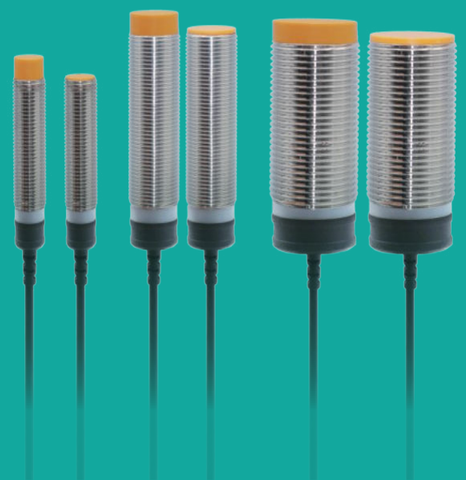
EB-M18KS/KN



EB-M30KS/KN



EB-M DOUBLE DISTANCE CYLINDRICAL PROXIMITY SENSOR



Complete category

The product specification is complete in size, and the model can be selected according to the installation requirements.

Quality assurance

Adopts specialized IC for longer service life.

Protection circuit

Surge protection circuit, short circuit protection, reverse polarity protection.

Protection level IP67

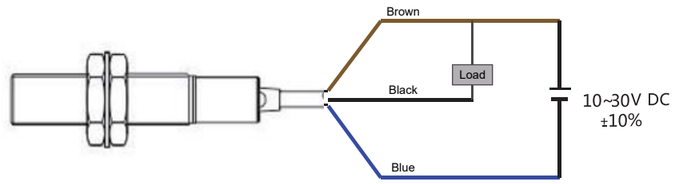
Realizes IP67 protective construction, excellent resistance to water and oil.

Selection rule

EB – M 30 KN 20 N C –

- Dimension: standard body length (default not written) C2= wire length 2m (default not written)
- Output: O= normally open (default not written) C= normally closed
- Signal: N=NPN P=PNP
- Distance: 1, 2, 4, 8, 10, 15, 20
- Convex header: KN non-flush KS flush LN double non-flush LS double flush
- Diameter: 5, 8, 12, 18, 30
- Shape: M Threaded cylinder S Unthreaded cylinder Q Square front W Square top
- Category: EB= Inductive proximity EB-DR= Capacitive proximity

Connection diagram



Category

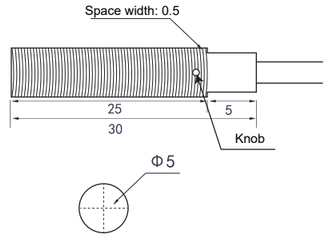
	Category	Dimension	Detection distance	NPN type	PNP type	Output action
Double distance type	Flush	M5	1.5mm	EB-M05LS015N	EB-M05LS015P	Normally open
				EB-M05LS015NC	EB-M05LS015PC	Normally close
	Flush	S6	2mm	EB-S06LSO2N	EB-S06LSO2P	Normally open
				EB-S06LSO2NC	EB-S06LS02PC	Normally close
	Non-flush	S6	4mm	EB-S06LN04N	EB-S06LN04P	Normally open
				EB-S06LN04NC	EB-S06LN04PC	Normally close
	Flush	M8	2mm	EB-M08LSO2N	EB-M08LSO2P	Normally open
				EB-M08LS02NC	EB-M08LS02PC	Normally close
	Non-flush	M8	4mm	EB-M08LN04N	EB-M08LN04P	Normally open
				EB-M08LN04NC	EB-M08LN04PC	Normally close
	Flush	M12	4mm	EB-M12LS04N	EB-M12LS04P	Normally open
				EB-M12LS04NC	EB-M12LS04PC	Normally close
	Non-flush	M12	8mm	EB-M12LN08N	EB-M12LN08P	Normally open
				EB-M12LN08NC	EB-M12LN08PC	Normally close
	Flush	M18	8mm	EB-M18LS08N	EB-M18LS08P	Normally open
				EB-M18LS08NC	EB-M18LS08PC	Normally close
	Non-flush	M18	15mm	EB-M18LN15N	EB-M18LN15P	Normally open
				EB-M18LN15NC	EB-M18LN15PC	Normally close
	Flush	M30	15mm	EB-M30LS15N	EB-M30LS15P	Normally open
				EB-M30LS15NC	EB-M30LS15PC	Normally close
	Non-flush	M30	25mm	EB-M30LN25N	EB-M30LN25P	Normally open
				EB-M30LN25NC	EB-M30LN25PC	Normally close

Product parameters

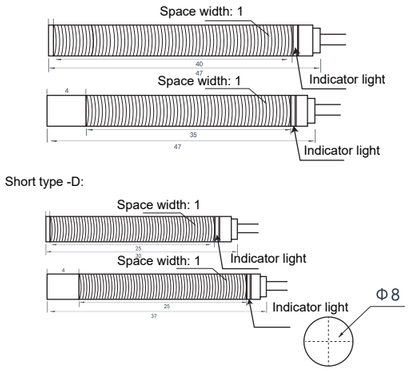
Item \ Model	Category					
						
	EB-M05LS	EB-M08LS EB-M08LN	EB-M12LS EB-M12LN	EB-M18LS EB-M18LN	EB-M30LS EB-M30LN	
Outer diameter size	5mm	8mm	12mm	18mm	30mm	
Detection distance	1.5mm±10%	2mm±10%	4mm±10%	8mm±10%	15mm±10%	25mm±10%
Setting distance	0~1.2 mm	0~1.6 mm	0~4 mm	0~8 mm	0~14 mm	0~14 mm
Detecting objects (iron)	8×8x1mm	12×12x1mm	15×15×1mm	18×18x1mm	30×30x1mm	54x54x1mm	54x54x1mm
Answer frequency	1KHZ			500HZ		
Repeated accuracy	0.01mm					
Detecting objects	Magnetic metal (reduced detection distance for non-magnetic metal)					
Hysteresis distance	Less than 10% of detection distance					
Power supply voltage	10~30VDC					
Current consumption	10mA or below					
Control output	Load power supply current 100mA or below (residual voltage 1V or below)					
Indicator light	Action indicator light (red)					
Motion form	NO: Normally open NC: Normally close					
Protection circuit	Surge protection circuit, short circuit protection, reverse polarity protection					
Ambient temperature	In action: -25 to +70°C In storage: -40 to 85°C (no icing)					
Environmental humidity	In action, in storage: 35-90% RH each (non-frosting)					
Temperature effect	Temperature range -25~70¡ , detection distance changes within ±15% for every 23¡ difference.					
Voltage effect	When the rated power supply voltage fluctuates within +15%, the detection distance changes within +1%					
Insulation impedance	50MΩ or above (DC500 megohmmeter) between the charging part and housing					
Voltage-resistant	AC1000V or above at 50/60Hz for 1min between the charging part and housing					
Vibration (durable)	10~55Hz,1.5mm double amplitude, reaches 2h in each direction of X, Y, Z					
Impact (durable)	500m/s² double amplitude, 10 times in each direction of X, Y, Z					
Protection structure	IP67					
Link method	Wire lead type (standard 2m)					
Material	Housing	Copper plating				
	Detection surface	PBT				
	Fastening nut	Brass plating				
	Washer with teeth	Ferrous plating				

Dimension diagram (unit: mm)

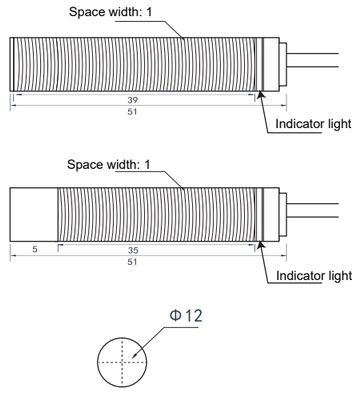
EB-M05LS/LN



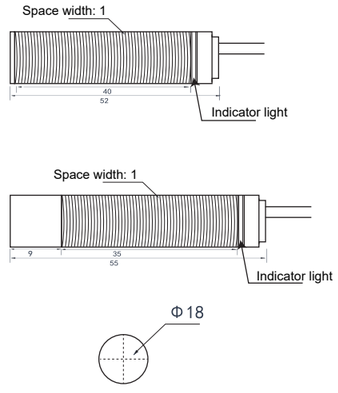
EB-M08LS/LN



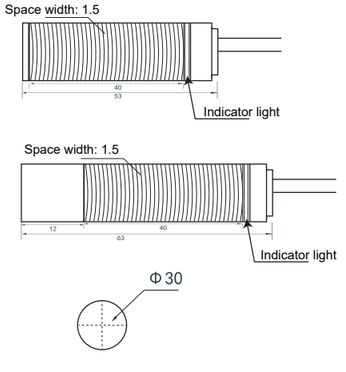
EB-M12LS/LN



EB-M18LS/LN



EB-M30LS/LN



EB SQUARE PROXIMITY SENSOR

Complete category

A wide range of products are available for a variety of limiting control, counting control, etc. Models can be selected according to installation requirements.

Quality assurance

Adopts specialized IC for longer service life.

Easy installation

Easy to install and can be used for high-speed pulse generators, high-speed rotary controllers, etc.

Cost advantage

Realization of high-performance, cost-effective standard proximity sensors.

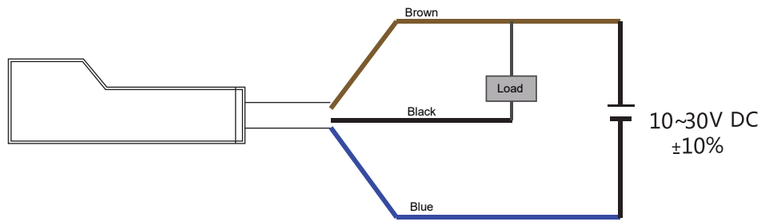
Category

Shape			Detection distance	Output form	Model: Action mode NO	Model: Action mode NC
Unshielded		□ 8	2mm	NPN	EB-Q2N	EB-Q2NC
		□ 12	3mm		EB-Q3N	EB-Q3NC
		□ 17	4mm		EB-Q4N	EB-Q4NC
		□ 17	5mm		EB-Q5N	EB-Q5NC
		□ 25	10mm		EB-Q10N	EB-Q10NC

Product parameters

Item model		EB-Q2N	EB-Q3N	EB-Q4N	EB-Q5N	EB-Q10N
Detection distance		2mm	3mm	4mm	5mm	10mm
Setting distance		0-1.5mm	0-2.5mm	0-3.5mm	0-4.5mm	0-9mm
Hysteresis		Less than 10% of detection distance				
Detectable object		Magnetic metal				
Standardized detecting object		Iron 8×8×1mm	Iron 15×15×1mm			
Response time		--	2ms or below			
Response frequency		500 Hz				
Power supply voltage (service voltage range)		DC12~24V Ripple (P-p) 10% or below (DC10~30V)				
Current consumption		15mA or below (at DC24V, no load)			10mA or below (when DC24V)	
Control output	Switching capacity	NPN open collector 100mA or below (DC30V or below)			NPN open collector, 50mA or below (DC30V or below) PNP open collector, 50mA or below (DC30V or below)	
	Residual voltage	1V or below (at load current of 100mA and wire length of 2m)			1V or below (at load current of 100mA and wire length of 2m)	
Indicator light		Detection display (red)				
Action mode (when detecting the proximity of object)		NO			NO	
		Metal detection only				
Protection circuit		Reverse connection protection, surge absorption				
Ambient temperature range		When operating and storage: -10~+60¡ each (no icing or condensation)			When operating and storage: -25~+70¡ each (no icing or condensation)	
Ambient humidity range		When operating and storage: 35~95% RH each (no condensation)				
Temperature effect		Within ±10% of the detection distance at +23¡ in the temperature range of -10~+60¡			Within ±20% of the detection distance at +23¡ in the temperature range of -25~+70¡	
Voltage effect		Within ±10% of rated power supply voltage, ±2.5% or below of detection distance at rated power supply voltage				
Insulation resistance		50MΩ or above (DC500V megohmmeter) between the whole charging part and housing			50MΩ or above (DC500V megohmmeter) between the whole charging part and housing	
Voltage-resistant		AC1,000V 1min between the whole charging part and housing			AC500V50/60Hz 1min between the whole charging part and housing	
Vibration (durable)		10~55Hz upper and lower amplitude 1.5mm 2h in each direction of X, Y, Z				
Impact (durable)		1,000m/s² 10 times in each direction of X, Y, Z			200m/s² 10 times in each direction of X, Y, Z	
Protection structure		IEC standard IP67, intracompany standard oil resistance			IEC standard IP67	
Connection method		Direct outgoing wire 2 meters				
Quality (after packaging)		Approx. 60g			Approx. 90g	
Material	Housing	Heat-resistant ABS				
	Detection surface					

Wiring diagram



EB FLAT PROXIMITY SENSOR

Installation Method

There are top detection/front detection types.

Can be installed anywhere

The sensor is only the size of a fingertip and is not limited by any installation space.

Cost advantage

Realization of high-performance, cost-effective standard proximity sensors.

Bend-resistant cable type available

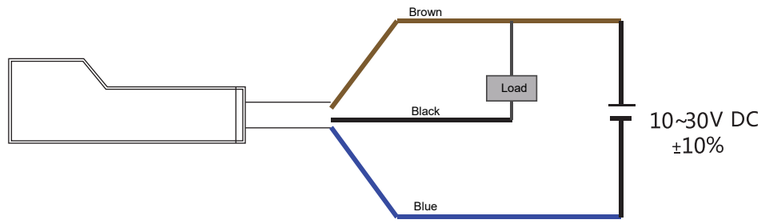
Improves bending resistance by 10 times (note: -GR)¡£ Best suited for movable parts such as robot arms.

Shape			Detection distance	Output form	Model	
					Action mode	
					NO	NC
Unshielded		□8	2mm	NPN	EB-W2N	EB-W2NC
		□8	2mm		EB-WS2N	EB-WS2NC
		□10	3mm		EB-W3N	EB-W3NC
		□12	4mm		EB-W4N	EB-W4NC
		□17	5mm		EB-W5N	EB-W5NC

Product parameters

Item model		EB-W2N EB-WS2N	EB-W3N EB-W4N	EB-W5N
Detection distance		2mm	3mm	5mm
Setting distance		0-1.5mm	0-2.5mm	0-4.5mm
Hysteresis		Less than 10% of detection distance		
Detectable object		Magnetic metal		
Standardized detecting object		Iron 8×8×1mm	Iron 15×15×1mm	
Response time		--	2ms or below	
Response frequency		500 Hz		
Power supply voltage (service voltage range)		DC12~24V Ripple (P-p) 10% or below (DC10~30V)		
Current consumption		15mA or below (at DC24V, no load)	10mA or below (when DC24V)	
Control output	Switching capacity	NPN open collector 100mA or below (DC30V or below)	NPN open collector, 50mA or below (DC30V or below) PNP open collector, 50mA or below (DC30V or below)	
	Residual voltage	1V or below (at load current of 100mA and wire length of 2m)	1V or below (at load current of 100mA and wire length of 2m)	
Indicator light		Detection display (red)		
Action mode (when detecting the proximity of object)		NO	NO	
		Metal detection only		
Protection circuit		Reverse connection protection, surge absorption		
Ambient temperature range		When operating and storage: -10~+60¡ each (no icing or condensation)	When operating and storage: -25~+70¡ each (no icing or condensation)	
Ambient humidity range		When operating and storage: 35~95% RH each (no condensation)		
Temperature effect		Within ±10% of the detection distance at +23¡ in the temperature range of -10~+60¡	Within ±20% of the detection distance at +23¡ in the temperature range of -25~+ 70¡	
Voltage effect		Within ±10% of rated power supply voltage, ±2.5% or below of detection distance at rated power supply voltage		
Insulation resistance		50MΩ or above (DC500V megohmmeter) between the whole charging part and housing	50MΩ or above (DC500V megohmmeter) between the whole charging part and housing	
Voltage-resistant		AC1,000V 1min between the whole charging part and housing	AC500V50/60Hz 1min between the whole charging part and housing	
Vibration (durable)		10~55Hz upper and lower amplitude 1.5mm 2h in each direction of X, Y, Z		
Impact (durable)		1,000m/s² 10 times in each direction of X, Y, Z	200m/s² 10 times in each direction of X, Y, Z	
Protection structure		IEC standard IP67, intracompany standard oil resistance	IEC standard IP67	
Connection method		Direct outgoing wire 2 meters		
Quality (after packaging)		Approx. 60g	Approx. 90g	
Material	Housing	Heat-resistant ABS		
	Detection surface			

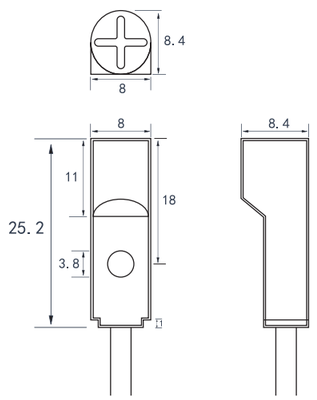
Wiring diagram



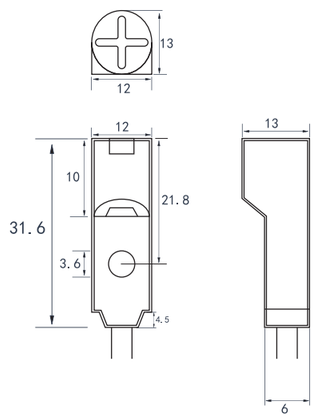
Square proximity sensor

Dimension diagram (unit: mm)

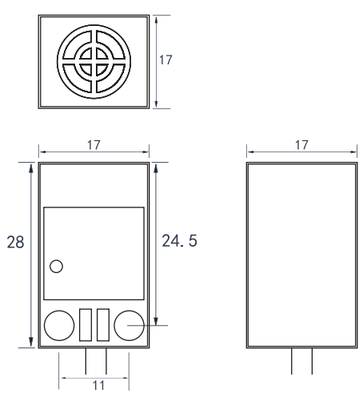
EB-Q2N



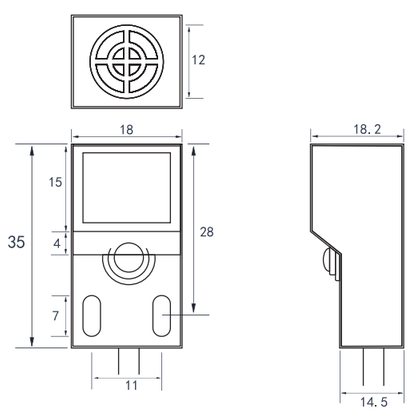
EB-Q3N



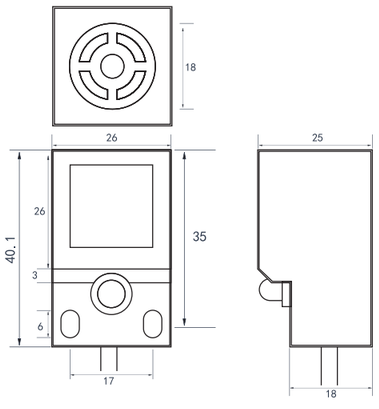
EB-Q4N



EB-Q5N

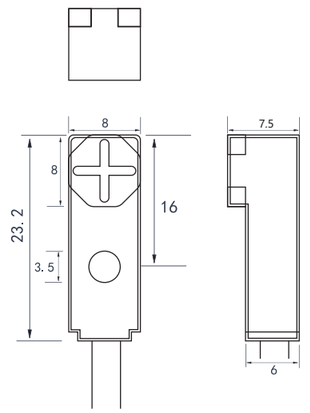


EB-Q10N

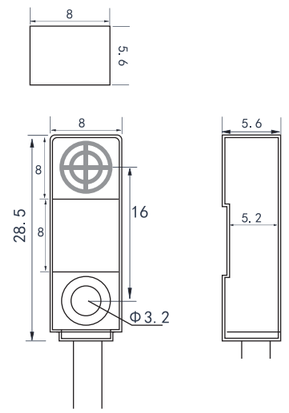


Dimension diagram (unit: mm)

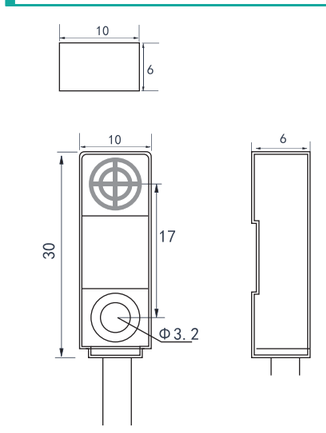
EB-W2N



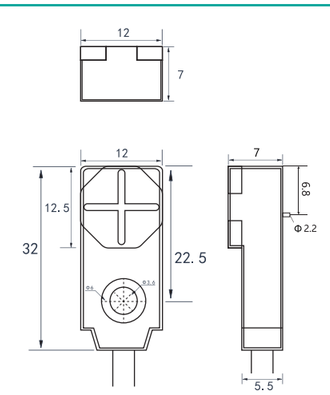
EB-WS2N



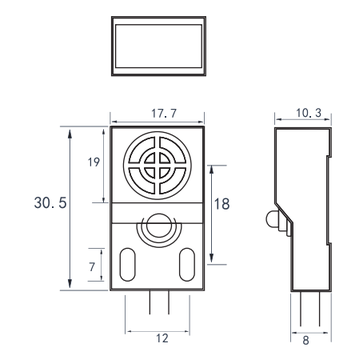
EB-W3N



EB-W4N



EB-W5N

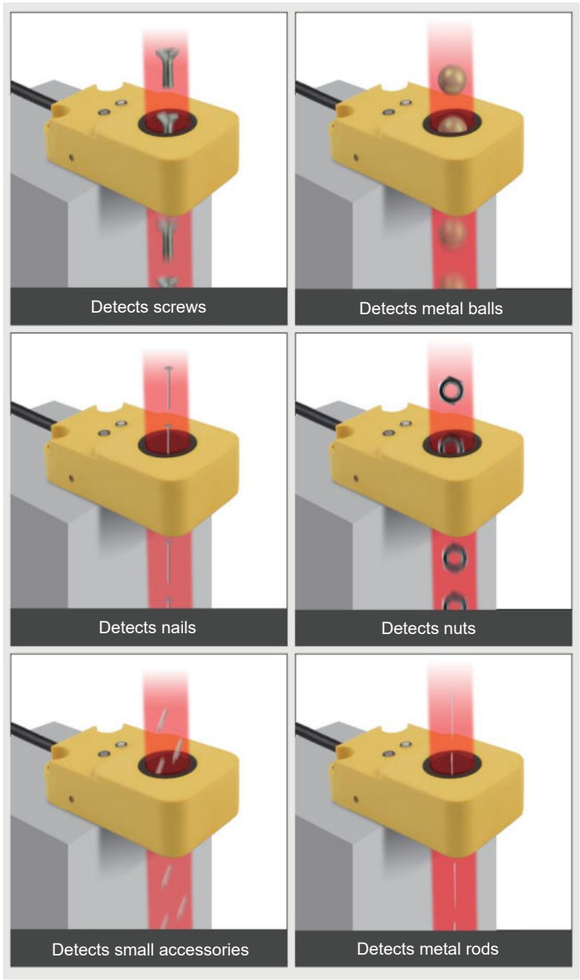


EB-C 3-WIRE RING PROXIMITY SENSOR

Characteristics

- Non-contact position detection, wear-free and highly reliable
- High sensitivity, high repeated accuracy, product service life up to 8 years
- A wide range of housing materials, from stainless steel and nickel-copper alloys to plastics and Teflon coatings
- Complete range of sizes, covering almost all sizes
- IP67 protection level design, excellent water and oil resistance

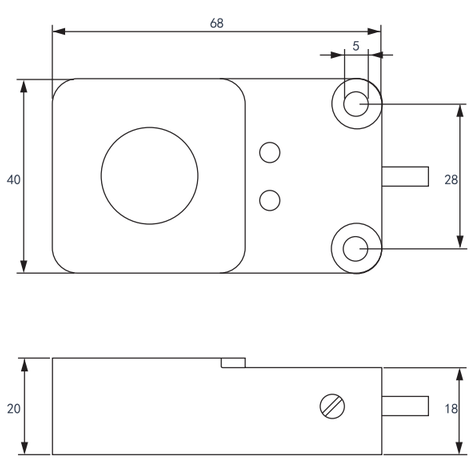
Application scenario



Product parameters

Appearance			
Model	EB-C06	EB-C10	EB-C15
Hole diameter	6mm	10mm	15mm
Hole height	20mm		
Operating voltage	10~30VDC (voltage fluctuation <10%)		
Residual voltage	<1.5V		
Max. carry current	150mA		
Current consumption	<15mA		
Leakage current	<10mA		
Switching frequency	2 KHz	1.5 KHz	1 KHz
Minimum detected object	D=2.5mm;L=4mm	D=3mm;L=6mm	D=6mm;L=12mm
Repeated accuracy	<2.0%(Sr)		
Hysteresis	<15%(Sr)		
Housing material	PBT		
Operating temperature	-25¡ ~+75¡		
Protection circuit	Short circuit protection/reverse polarity protection		
Protection level	IP67		

Dimension diagram (unit: mm)



EB-DRM CAPACITIVE PROXIMITY SENSOR

Characteristics

Able to sense any object


Metallic conductor


Insulator


Non-metallic plastic

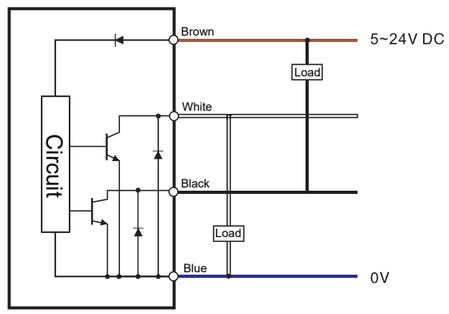

Liquid

- Sensitivity adjustable
- Detects all objects such as water, plastics, human body, etc.
- Strong anti-interference, adaptable to various complex industrial environments

The detection distance varies depending on the conductivity and dielectric constant of different materials.

Material	Water	Alcohol	Glass	Wood	Paper	Rubber	Crystal	Nylon
Action distance	100%	85%	40%	30%	25%	30%	20%	20%

Circuit

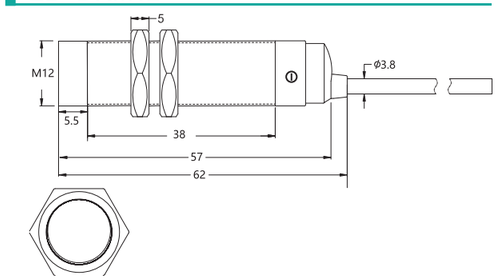


Product parameters

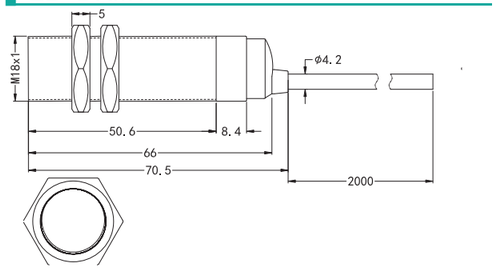
Appearance		
Model	EB-DRM12	EB-DRM18
Dimension	M12 Front sensing	M18 Front sensing
Detection distance	0~6mm Distance adjustable	0~12mm Distance adjustable
Detectable object	Metal, water, oil, glass, plastic, paper	
Operating voltage	12~24VDC (voltage fluctuation <10%)	
Residual voltage	<1.5V	
Max. carry current	100mA	
Current consumption	<22 m	
Leakage current	<1.1mA	
Response time	¡ 14ms	
Isolation resistance	¡ 20MΩ(500VDC)	
Hysteresis	<10%(Sr)	
Insulation and voltage resistance	AC 1000V 60Hz for 60 Sec	
Operating temperature	-20¡ ~+60¡	
Protection level	P66	
Wire outgoing method	φ4.2*2m 4-core wire	
Weight	Approx. 78g	

Dimension diagram (unit: mm)

EB-DRM12



EB-DRM18



EB-DRF CAPACITIVE PROXIMITY SENSOR

Characteristics

Able to sense any object


Metallic conductor


Insulator


Non-metallic plastic

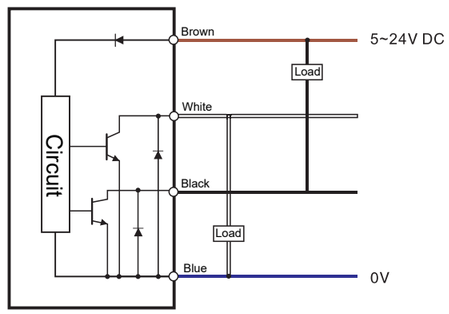

Liquid

- Sensitivity adjustable
- Detects all objects such as water, plastics, human body, etc.
- Strong anti-interference, adaptable to various complex industrial environments

The detection distance varies depending on the conductivity and dielectric constant of different materials.

Material	Water	Alcohol	Glass	Wood	Paper	Rubber	Crystal	Nylon
Action distance	100%	85%	40%	30%	25%	30%	20%	20%

Circuit

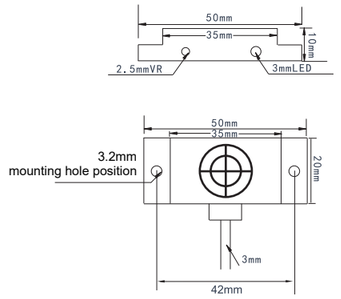


Product parameters

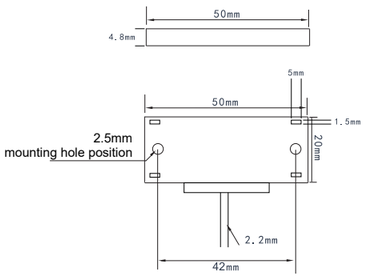
Appearance		
Model	EB-DRF10	EB-DRF05
Dimension	Flat top sensing	Flat top sensing
Detection distance	0~10mm Distance adjustable	0~5 mm
Detectable object	Plastic, Black/Blue	
Operating voltage	24VDC (Ripple<10%)	
Residual voltage	¡ 1.5V@1L=50mA	
Max. carry current	NPN or PNP-NO/NC	
Current consumption	¡ 50mA	
Leakage current	¡ 100mA	
Response time	100 Hz	
Isolation resistance	<5%	
Hysteresis	0¡ ~+60¡	
Insulation and voltage resistance	¡ 20%	
Operating temperature	-30¡ ~+75¡	
Protection level	Reverse polarity protection, pulse overvoltage protection, short circuit protection	
Wire outgoing method	IP67	
Weight	50g	

Dimension diagram (unit: mm)

EB-DRF10



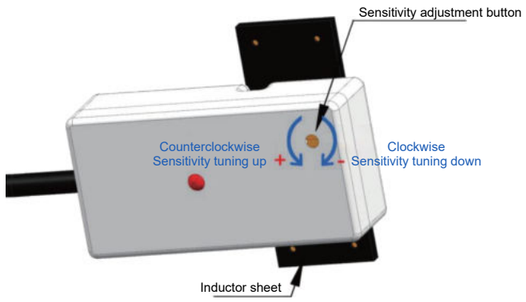
EB-DRF05



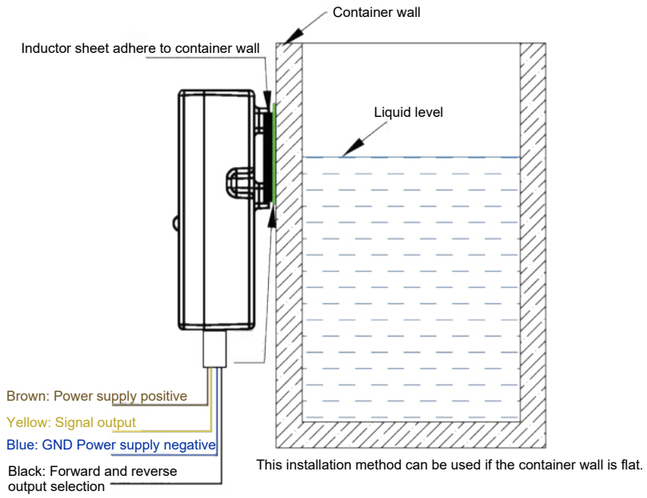
EB-DRY CAPACITIVE LIQUID LEVEL SENSOR

Characteristics

- Intelligent non-contact liquid level sensor (hereinafter referred to as liquid level sensor)
- Adopts advanced signal processing technology and a high-speed signal processing chip,
- Realizes truly non-contact detection of liquid level height in closed containers.



Wiring method



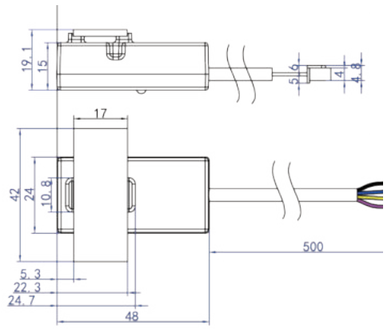
This installation method can be used if the container wall is flat.

Note: Yellow default output relay signal
Black and blue shorted to output NPN signal
Black and brown shorted to output PNP signal

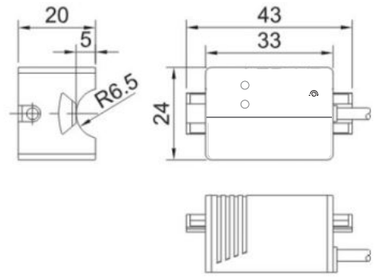
Product parameters

Project name	EB-DRY Capacitive Liquid Level Sensor			
Product specifications	EB-DRY28NO	EB-DRY28NC	EB-DRY15N	EB-DRY15P
DC Input voltage	5-24VDC	5-24VDC	5-24VDC	5-24VDC
Output method	Normally open	Normally close	NPN	PNP
Current consumption	13mA			
Output current	DC24V/2A			
Response time	500mS			
Working environment temperature	-20~105¡			
Inductive sensitivity	Pipe outer diameter D(mm)	Inductive pipe wall thickness L(mm)		
	D¡ 100	20±3		
	100>D¡ 80	15±2		
	80>D¡ 60	12±1.5		
	60>D¡ 40	7±1.0		
	40>D¡ 30	5±1.0		
	30>D¡ 20	3±1.0		
	20>D¡ 10	1.5±0.5		
Applicable pipe diameter range	¡ 11mm			
Liquid level accuracy	±1.5mm			
Humidity	5%~100%			
Wire length	500MM(±10MM)(customizable for batch)			
Line end definition	Brown (power supply positive), yellow (signal output)			
	Blue (power supply negative), black (COM terminal)			
Material	PC-VO fireproof material			
Waterproof performance	IP65			
Safety standard certification	CE			
Environmental certification	ROHS2.0			

Dimension diagram (unit: mm)



EB-DRY28



EB-DRY15

EB-HE
HALL PROXIMITY SWITCH

Characteristics

Hall proximity switch working principle:

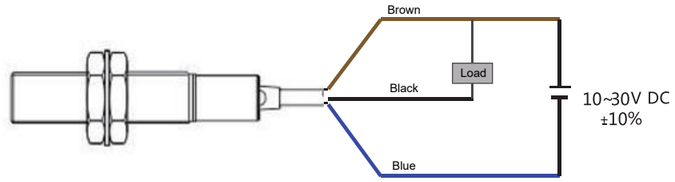
When a piece of metal or semiconductor sheet with current is placed perpendicularly in the magnetic field, the two ends of the sheet will produce a potential difference, this phenomenon is called the Hall effect, the sensitivity degree of the Hall effect and the magnetic induction strength of the applied magnetic field is in proportional relationship.

Hall switch is such active magnetoelectric conversion device, it is based on the principle of Hall effect, using integrated packaging and assembly process, it can be convenient to convert the magnetic input signal into the actual application of the electrical signal, but also practical use in industrial applications with easy operation and reliability requirements. Hall switch has characteristics of no electric shock, low power consumption, long service life, high response frequency, and internal epoxy resin sealing and irrigation into integration, so it can work reliably in all kinds of harsh environments.

Outline dimensions: M8 M12 M18 etc.

Detect polarity: N-pole S-pole unipolar or all-pole (default)

Connection diagram



Product parameters

Appearance		
Model	EB-HEM08N EB-HEM08P	EB-HEM12N EB-HEM12P
Output method	NPN/PNP	
Detection distance	10mm (the detection distance mainly depends on the magnetic force of the magnet)	
Working frequency	3000HZ	
Load current	<200mA	
Circuit protection	Polarity protection output short circuit protection (200mA or above)	
Indicator light	With	
Temperature drift	<±10%	
Housing material	Nickel plated brass	
Cable length	Standard 2m	
Type	Embed	
Standard object	Magnetic steel	
Voltage drop	Less than 1.5V	
Operating temperature	-20¡ ~70¡	
Operating voltage	-20¡ ~70¡	
Protection level	12~30V DC	
Current consumption	Less than 15mA	
Detection surface material	Nickel plated brass	

MS COLOR MARK SENSOR

Product characteristics

Simple to use

Digital display shows detection status at a glance
Two-key setting, focus on the measured object and press SET, then focus on the background and press SET

High-speed response

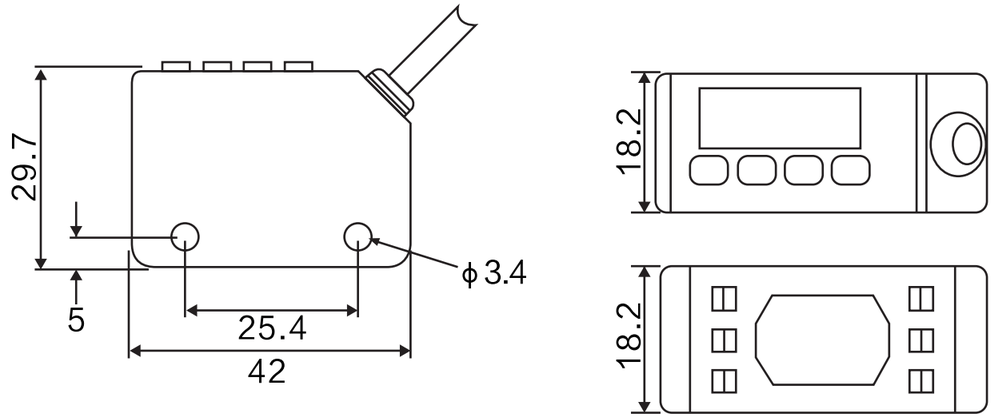
High-speed response in microseconds for significant productivity gains
Adjustable delay time to significantly increase productivity

Application scenario

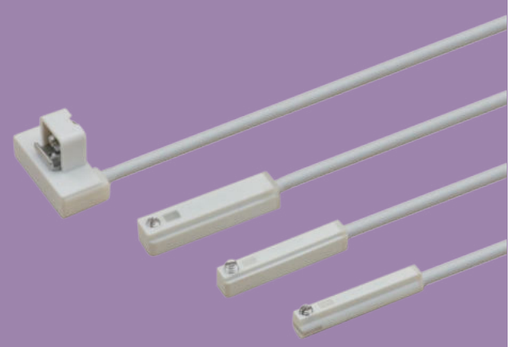
Product parameters

Model	MS-LX101	MS-LX101P
Signal	NPN Output	PNP Output
Principle	MARK,CCI three detection modes	
Detection method	Reflection type	
Light source (luminous wavelength)	RGB three-color	
Distance	12MM±3MM	
Display indicator	Operating indicator light red light emitting diode, single digit monitor, single digit display 4-digit display	
Power supply voltage	DC12 ‘ 24V ±10% fluctuation (P-P) 10% or below	
Current consumption	20mA or below	
Output control	Load power supply voltage DC26.4V or below, load current 100mA or below, leakage current 10A or below, Open controller output (NPN/PNP output varies according to the form) LIGHT-ON/DARK-ON (short press) MODE key followed by UP/DOWN to select	
Output residual voltage	Residual voltage 1V or below (load current 10mA or below) Residual voltage 2V or below (load current 10-100mA or below)	
Response time (including action· reset)	30¸¢ˆº	

Dimension diagram (unit: mm)



MS
MAGNETIC SENSOR



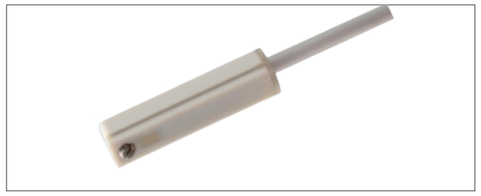
Product

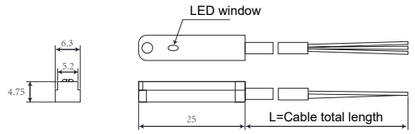
Characteristics:
1. Electronic non-contact, long service life
2. High sensitivity, no false action
3. Built-in chip, good consistency
4. Cables resistant to bending, oil and water resistant
5. Universal matching of various brands of air cylinders
6. Three-wire NPN, PNP, normally open, normally close optional

Parameters

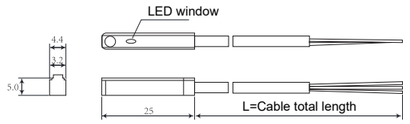
Type	MS-AE	MS-AG	MS-AH	MS-AJ	MS-A39
Type	E-type	G-type	H-type	J-type	R-type
Switching logic	Normally open type, two-wire electron tube type, non-contact				
Current Voltage	10V~27V 50mA Max				
Operating temperature	-10¡ ~70¡				
Switching frequency	1000 Hz				
Protection circuit	Power reverse connection protection, surge absorption protection				
Standard wire	2 Meter flexible wire				

MS-AE

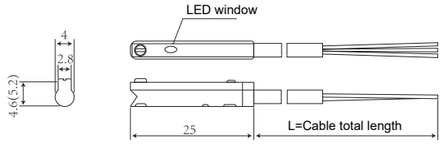




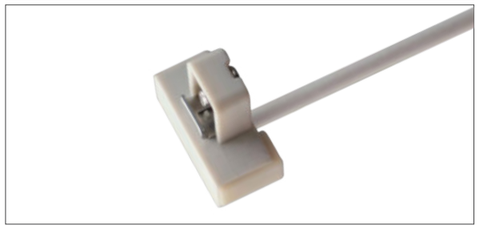
MS-AG



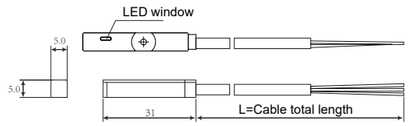
MS-AH



MS-AJ



MS-A39



MS NEGATIVE PRESSURE SENSOR

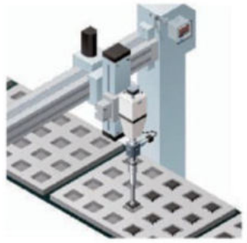
Characteristics

Setting content at a glance

Informs DP-100 setting contents in digital display
You can easily handle the settings by numerical values, and it is helpful for maintenance over the phone calls.

Wiring method

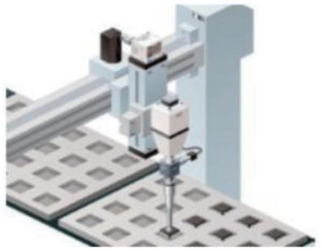
Adsorption confirmation of electronic parts



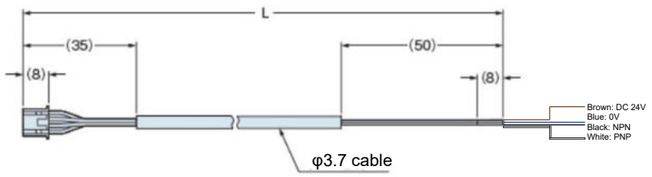
Comfirmation of total pressure

Air leakage detection

Mounting on movable parts



Connection wire

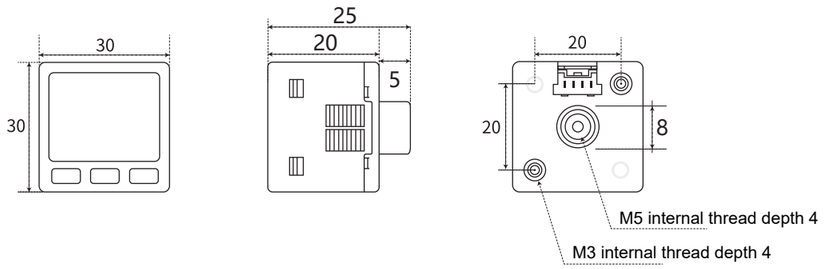


UX1008

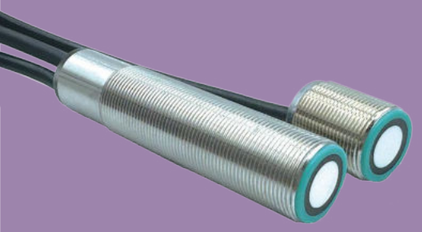
Product parameters

Category		Standard	
		For low pressure	For high pressure
Model	NPN, PNP dual channel output	MS-DP101	MS-DP102
Compliance standards and certifications		EMC directive, RoHS directive, UL/c-UL certification	
Pressure type		Gauge pressure	
Rated pressure range		-100.0~+100.0 KPa	-0.100~+1.000 MPa
Setting pressure range		-101.0~+101.0 KPa	-0.101~+1.010 MPa
Pressure resistance		500 KPa	1.5 MPa
Applicable fluids		Non-corrosive gas	
Power supply voltage		12~24V DC ±10%	Pulsation P-P10% or below
Power consumption		Normally: 720mW or below (current consumption 30mA or below at 24V power supply voltage) ECO mode: 480mW or below at STD (current consumption 20mA or below at 24V power supply voltage), 360mW or below at FULL (current consumption 15mA or below at 24V power supply voltage).	
Comparison output		<NPN output type> NPN open collector transistor Max. inflow current: 100mA Impressed voltage: 30V DC or less (between comparison output and 0V) Residual voltage: 2V or less (at inflow current of 100mA)	<PNP output type> PNP open collector transistor Max. outflow current: 100mA Impressed voltage: 30V DC or less (between comparison output and +V) Residual voltage: 2V or less (at source current of 100mA)
Output action		N.O./N.C. selected by key operation	
Output mode		EASY mode/Hysteresis mode/Window Contrast mode	
Hysteresis		Min. 1 digit (variable)	
Repeated accuracy		±0.1% F.S. (within ±2 digits)	±0.2% F.S. (within ±2 digits)
Response time		2.5ms, 5ms, 10ms, 25ms, 50ms, 100ms, 250ms, 500ms, 1000ms, 5000ms selected by key operation	
Protection structure		P40(IEC)	
Service ambient temperature		-10℃ ~50℃ (caution: no condensation or icing) in storage: -10~+60℃	
Service ambient humidity		35~85%RH (Note: No condensation or icing), in storage: 35~85%RH	
Voltage-resistant		AC 1,000V for 1 minute between all power supply link terminals and housing	
Insulation resistance		50MΩ or above between all power link terminals and housing, based on DC500V megger)	
Vibration-resistant		Frequency 10~500Hz double amplitude 3mm or Max. speed 196m/s² 2 hours each direction of X, Y and Z	
Material		Housing: PBT, LCD display: acrylic, pressure port: SUS303, mounting thread section: brass (nickel plated), switch section: silicone rubber	
Connection method		Connector connection	

Product size



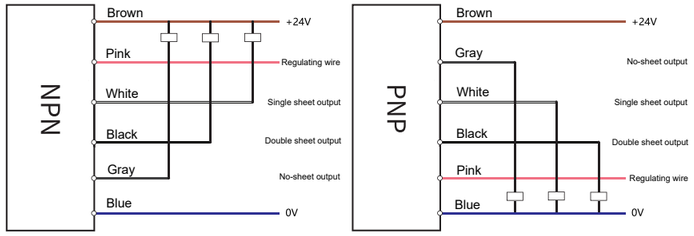
MS ULTRASOUND SINGLE AND DOUBLE SHEET SENSOR



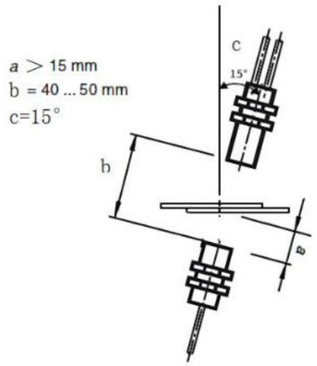
Product characteristics

- Adjustable sensor sensitivity
- Ultra-short installation dimensions
- Copper nickel-plated housings can be customized with stainless steel housing
- Protection level IP67
- Anti-reverse connection protection, instantaneous over-voltage protection

Wiring method



Installation schematic



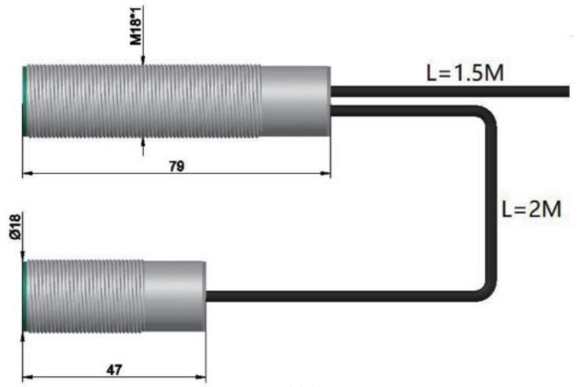
- Adjust the mounting spacing of the sensor to about 40-50 mm. As shown in Figure b.
- The spacing between the end face of the sensor and the object to be detected needs to be greater than 15 mm, as shown in Figure a.
- Adjust the angle between the sensor and the center axis to 15 degrees, as shown in Figure c.
- If the sensors are to be mounted side by side, they should be spaced about 10 cm apart.

Product parameters

Appearance		
Model	MS-USM18N	MS-USM18P
Signal output	NPN	PNP
Detection distance	30~60mm	
Detection method	Continuous detection	
Power supply	10-30V	
Detection category	Paper, plastic sheet, transparent material, aluminum foil, rubber blanket, cardboard, printed circuit board, etc.	
Material range	<1.5 mm	
Response time	Approx. 15ms	
Housing material	Nickel plated copper	
Electromagnetic compatibility	GB/T17626.2-2006/GB/T17626.4-2008	
Power consumption	20ma	
Protection circuit	Anti-reverse connection protection, instantaneous over-voltage protection	
Operating temperature	-20¡ ~+80¡	
Storage temperature	-40¡ ~+80¡	
Wire length	1.5m	

- The above data were tested in a 25°C environment.
- This product requires that there must be a gap in the double sheet detection position, if there is liquid filling in the middle, the sensor may not work properly, please contact our relevant personnel for consultation and customization.

Dimension diagram (unit: mm)



Unit: mm
Tolerance: ±2mm

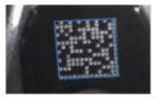
MS INTELLIGENT CODE READER

Characteristics

An extremely small fixed industrial code reader that can be perfectly embedded in automated machine equipment while guaranteeing high image quality and efficient recognition. For customers with demanding installation space requirements, the product series is complete, with a large selection space, and has a wealth of application cases in the new energy, packaging, 3C electronics industry.
It supports the recognition of one, two, laser carving, inkjet and other types of DPM codes, providing efficient and reliable code reading performance. Extremely small size, free installation in small spaces, perfect for embedding into miniaturized or existing automated machines.


Inkjet DM code


Product label code


Metal dot matrix DPM code


Food packaging inkjet code


Copper plate DPM code


Logistics label code


Low contrast DPM code

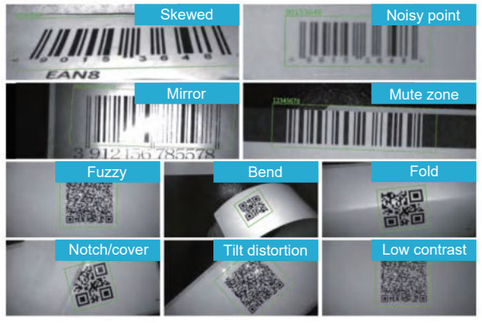

Compact label code

Liquid focusing

Equipped with liquid lens, single millisecond zoom speed, only a few sampling pictures to achieve accurate focusing, the sampling speed is nearly 100 times faster than the traditional mechanical lens focusing technology requires hundreds of samples to complete focusing, with strong advantages of fast, accurate and clear focusing.

Superior decoding algorithms

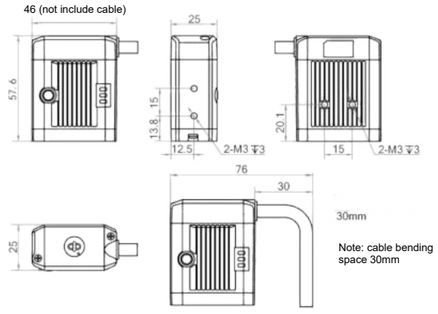
Realizes high-speed positioning of 1D/2D codes, and the decoding time is 6 times higher than traditional positioning methods, which greatly improves the decoding efficiency; Deep decoding algorithm & Smart Grid advanced sampling technology can accurately capture barcode data information in multi-noise scenarios, and can be highly efficient, accurate, and reliable even in complex scenarios such as yin -yang code, low contrast, positional obstruction, large-angle tilting, ultra-small code, and multi-code on one screen, etc. It can also read all kinds of 1D and 2D codes efficiently, accurately and reliably.

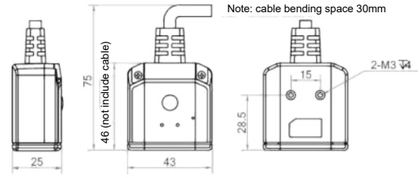


Product parameters

Product model / Reading parameters	MS-CR116M06	MS-CR116M10	MS-CR116M16	MS-CR113E05
Resolution (HxV)	1408 x 1024			1280 x 1024
Frame rate (fps)	60			
Color/monochrome	Monochrome			
Shutter	Global			
Exposure time	20μm~1sec			
Pixel size	3μm x 3μm			
Target surface size	1/4″			
Focusing method	Mechanical focus/auto focus			Fixed focal length
Focal length	6mm	10mm	16mm	5mm
Code reading distance	70-150mm	90-360mm	100-400mm	120mm
Barcode type	1D code: Code 39, Code93, Code128, EAN-8, EAN-13, Interleaved 2 of 5, UPC, Pharmacode 2D code: QR code, DataMatrix			
Structure				
Position indication	2 green light dots indicate the center area of the scanning position			
Status indication	3 status LEDs and buzzer			
Polarizer	Polarization options available			
Light source	Red/white light source optional			
Communication control and electrical parameters				
Input control	Two-way optocoupler isolated inputs, support NPN, PNP type			
Output control	Three-way non-isolated output			
Communications protocol	TCP Server, TCP Client, ModBusS TCP, ModBus RTU, Profinet, Ethernet/P, MELSEC/SLMP, Fins, Serial			
Communication interface	RS232, Ethernet			
Power supply input	24V DC			
Power consumption	5W			
Dimensions and ambient parameters				
Outline dimensions	47*25*43mm			
Weight	Approx. 100g			
Operating temperature	0~45¡			
Storage temperature	-20~70¡			
Humidity	5%~95%RH (no condensation)			
Protection level	IP67			

Dimension diagram (unit: mm)



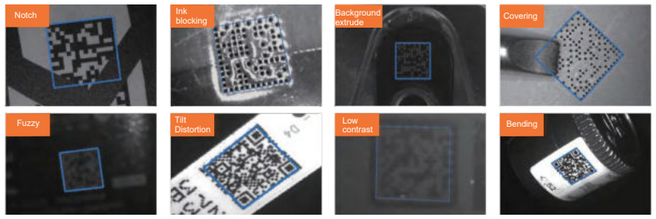


Fixed focal length

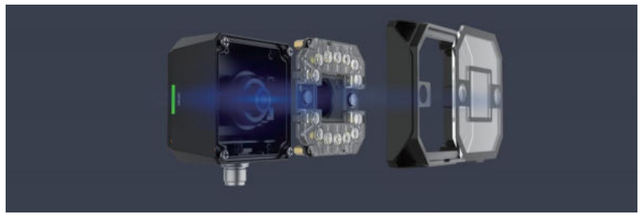
MS INTELLIGENT CODE READER

Characteristics

A compact fixed industrial code reader, based on embedded deep learning platform, with modular design, single cable, excellent ease of use, meets high beat and high code reading rate scenarios in lithium, photovoltaic, panel, auto parts, tobacco, 3C and other industries.



High-speed recognition efficiency, stable recognition of label paper, different materials, DPM bar codes, for missing information, low contrast, distortion, Yin-Yang code, blocking holes and overflow of ink and other difficult codes, it can still be read efficiently and stably



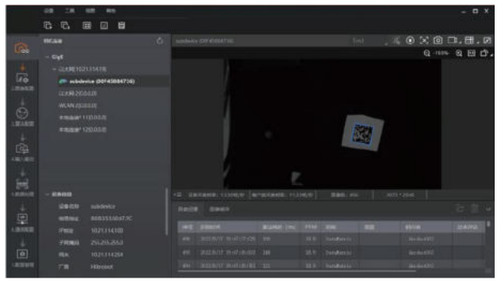
Rich selection of light sources, lenses and other modules, easy to switch, can ensure that the optimal image lighting effect, can adapt to the requirements of different working distance and field of vision

Software CRW for client

The software for client is specially matched application software for code reader camera, which can carry out a series of debugging operations such as code reader focusing, parameter setting and establishing communication, etc. Follow the seven-step guide bar on the left side of the software interface to complete the equipment setup, and easily complete the preparation before the equipment goes on line.

- Directly connected to the code reader for debugging, with interface operation for all code reading functions, simple and easy to operate
- Real-time display of code reading results for imaging optimization and debugging
- Integrated FTP for client, you can directly save images locally via FTP
- Provide SDK for secondary development, support C, C++, C# development language
- In-depth customization such as UI interface is available to meet customer needs in all aspects

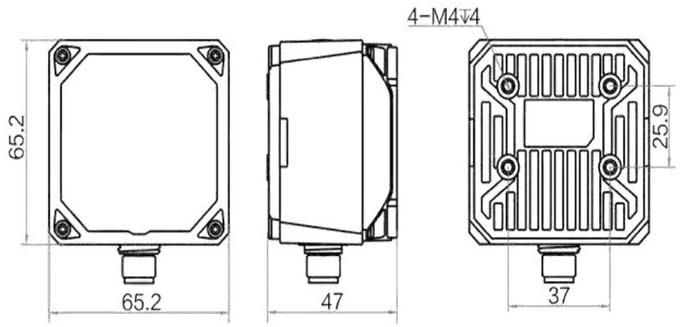
CRW software interface



Product parameters

Product model Reading parameters	MS-CR216M06	MS-CR216M12	MS-CR216M15	MS-CR250M12	MS-CR250M25
Resolution (HxV)	1408×1024			2368×1760	
Frame rate (fps)	60				
Color/monochrome	Monochrome				
Shutter	Global				
Exposure time	20μm~1sec				
Pixel size	3μmx3μm				
Target surface size	1/4"		1/2.6"		
Focusing method	Mechanical focus/auto focus			Auto focus	
Focal length	6mm	10mm	16mm	12mm	25mm
Code reading distance	70-150mm	90-360mm	100-400mm	100-800mm	
Barcode type	1D code: Code 39, Code93, Code128, EAN-8, EAN-13, Interleaved 2 of 5, UPC, Pharmacode 2D code: QR code, DataMatrix				
Structure					
Position indication	1 green light dots indicate the center area of the scanning position				
Status indication	5 status LEDs and buzzer				
Polarizer	Unpolarized and semi-polarized options available				
Light source	Red/white light source optional				
Communication control and electrical parameters					
Input control	Two-way input control, optocoupler isolated-support NPN, PNP type				
Output control	Three-way output control, optocoupler isolated				
Communications protocol	TCP Server, TCP Client, ModBusS TCP, ModBus RTU, Profinet, Ethernet/P, MELSEC/SLMP, Fins, Serial				
Communication interface	RS232, Ethernet				
Power supply input	24V DC				
Power consumption	5W				
Dimensions and ambient parameters					
Outline dimensions	58*53.5*69mm				
Weight	Approx. 220g				
Operating temperature	0~45¡				
Storage temperature	-20~70¡				
Humidity	5%~95%RH (no condensation)				
Protection level	P67				

Dimension diagram (unit: mm)

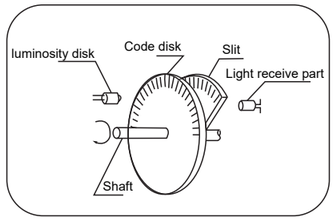


MS ENCODER

Characteristics

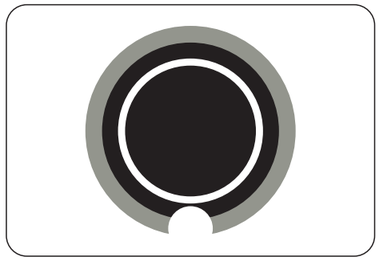
Rotary encoders are rotational speed and position displacement sensors that combine optical, mechanical and electrical technology . When the encoder shaft drives the grating disk rotation, the light emitted by the light-emitting component is cut into intermittent light by the grating disk slit and is received by the receiving element to produce the initial signal, which is processed by the subsequent circuit to output a pulse (or code) signal.

It is characterized by small size, light weight, many varieties, full functions, high frequency, high resolution, strong bearing capacity, small torque, low energy consumption, stable and reliable performance, long service life and so on.

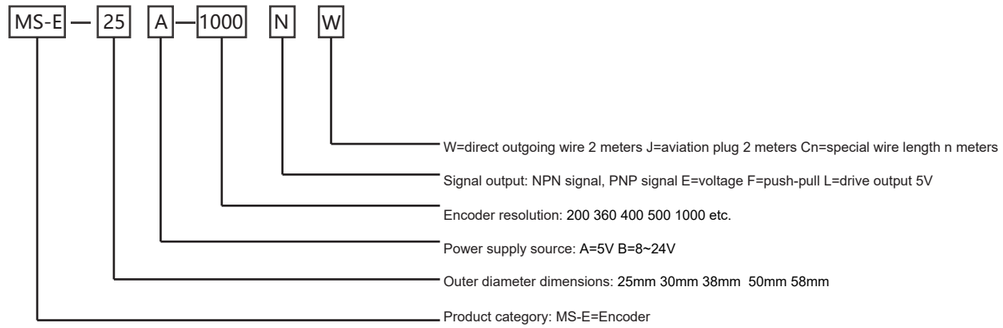


Incremental encoder

When an incremental encoder shaft rotates, pulses are output accordingly, and the direction of rotation and the number of pulses are increased or decreased with the help of a direction judgment circuit and a counter at the back of the encoder. Its counting starting point can be set arbitrarily and unlimited accumulation and measurement of multiple turns can be realized. It is also possible to use the Z signal, which sends a pulse without rotation, as a reference mechanical zero point. When the number of pulses has been fixed and the resolution needs to be improved, the original number of pulses can be multiplied using the 90° phase difference A and B signals.



Selection rules



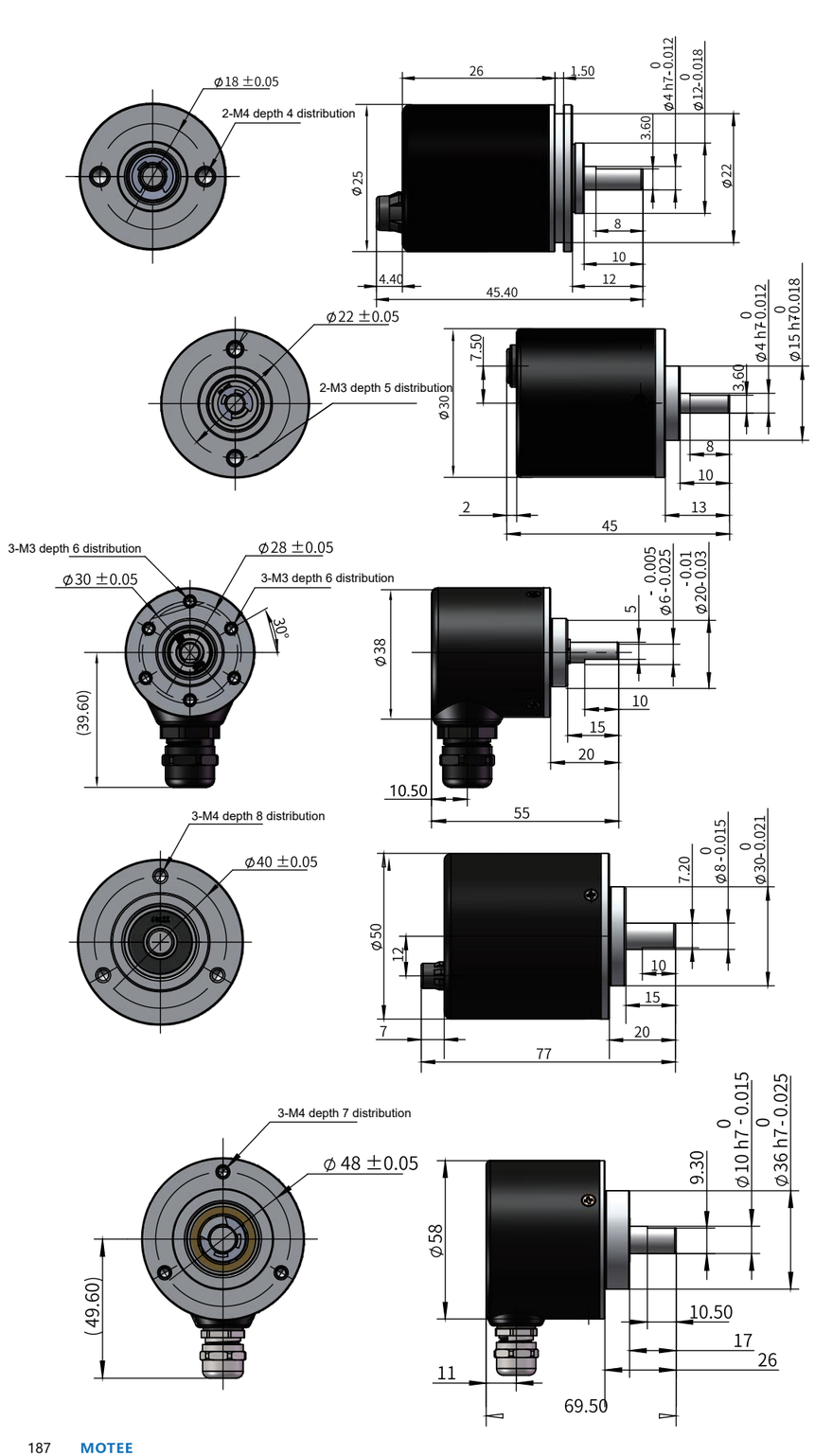
Wiring method

Signal	VCC	OV	SIG A	$\overline{\text{SIGA}}$	SIG B	$\overline{\text{SIGB}}$	SIGZ	$\overline{\text{SIGZ}}$	N.C
Cable color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Copper mesh

Product parameters

Electrical parameters			Mechanical parameters
Pulse number	Max. 500P/R	Starting torque	2*10³N ·m(+25¡)
Current consumption	¡ 100mA	Allowable shaft load	Axial 9.8N, radial 9.8N
Response frequency	0~100kHz	Moment of inertia	4x10?? Kgm²
Operating temperature	-20¡ ~+70¡	Max. RPM	5000r/min
Storage temperature	-20¡ ~+80¡	Protection level	IP54
Output item	A,B,Z	Vibration resistant	50m/S² (10~200Hz 2 hours in each direction of x,y,z)
Output voltage VH	¡ Vcc-2.5V	Impact resistant	980m/S² (2 times in each direction of x,y,z, each lasting 6ms)
Output voltage VL	¡ 0.5V	Material	Shaft: stainless steel
	¡ 1.0V		End face: aluminum alloy
Power supply voltage	DC5V~12V		Housing: aluminum alloy plastic spray powder
	DC12V~24V	Weight	50g
Rise/fall time	5V driver ¡ 0.1us		
	24V<lus		

Dimension diagram (unit: mm)



Handwheel series

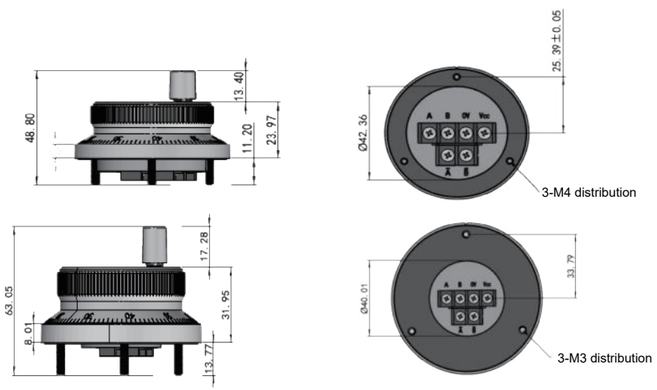
Characteristics	
Japanese all-metal coded disk, accurate scale, high precision, good texture	Strong anti-interference ability, can be transmitted over long distances
Voltage, differential, and single-ended outputs available	Supports up to 11 axes of control with selectable magnification
Built-in strong magnet mounting, bracket fixing method	The wire is guaranteed to stretch 200,000 times, with a natural length of 2 meters and a stretch of up to 4 meters
Backside with anti-abrasion device	With power supply indicator light (LED, DC24V) emergency stop and account sign-up selection
DC5/12V input, 25 and 100 pulsation optional	
Application: Japan MITSUBISHI, FANUC, Spain FAGOR, Italy SELCA, Guangzhou CSK and other numerical control systems	

Selection rules

MS-HW — 6 — A — WE — E

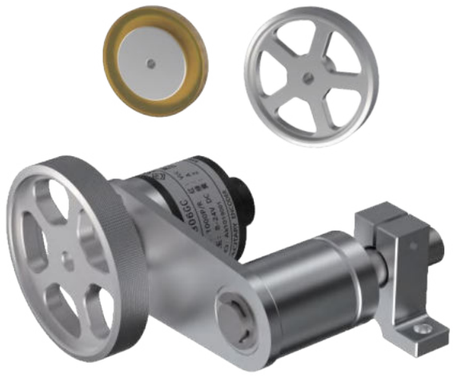
- Signal output: E=Voltage L=Drive
- None = default hand wheel, W = hand wheel with wire, WE = hand wheel with wire and emergency stop
- Pulse number: A=25 B=100
- Outer diameter size: 6=60mm 8=80mm
- Product category: MS-HW= Hand wheel series code reader

Dimension diagram (unit: mm)



Meter wheel series

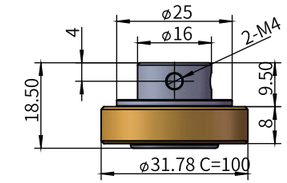
Soft wheel, hard wheel two options for all occasions, a variety of inner holes, a variety of perimeters, easy to choose the encoder with a variety of size accounting, non-standard customization

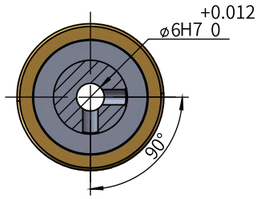


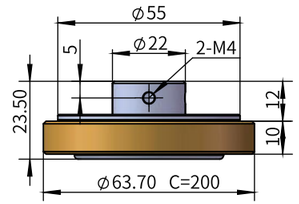
Meter wheel specification table

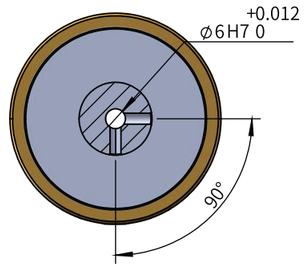
Model	Circumference C (mm)	Outer diameter D (mm)	Inner diameter d (mm)
MS-J100	100	31.8	Default φ8mm Customizable 6 or 10
MS-J200	200	63.7	
MS-J300	300	95.5	
MS-JDB20	–	Z=20	
MS-JDB30	–	Z=40	

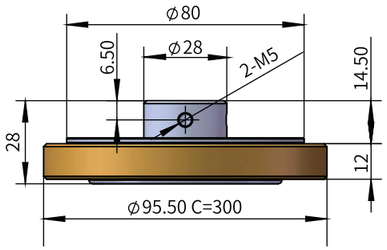
Handwheel series

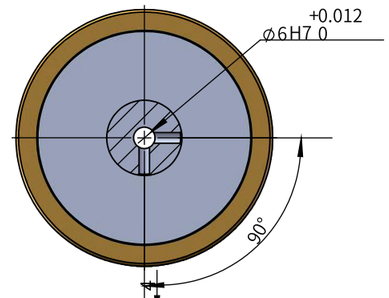


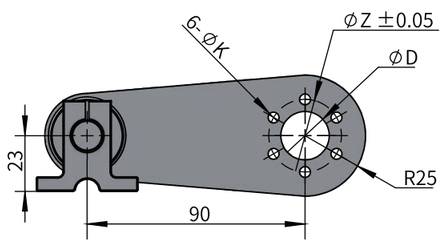


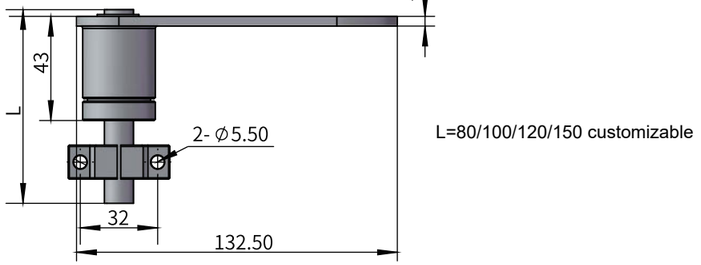










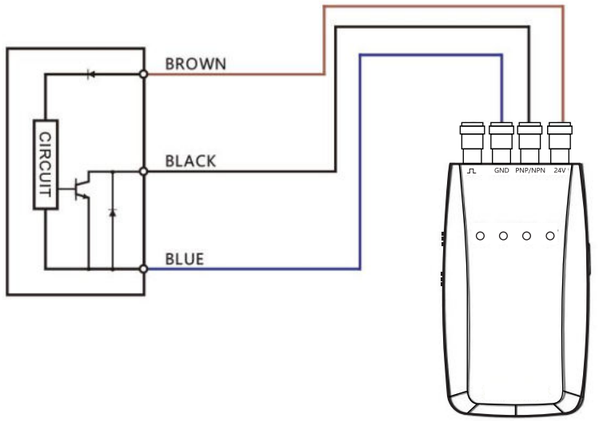


L=80/100/120/150 customizable

MS SENSOR TESTER

Characteristics

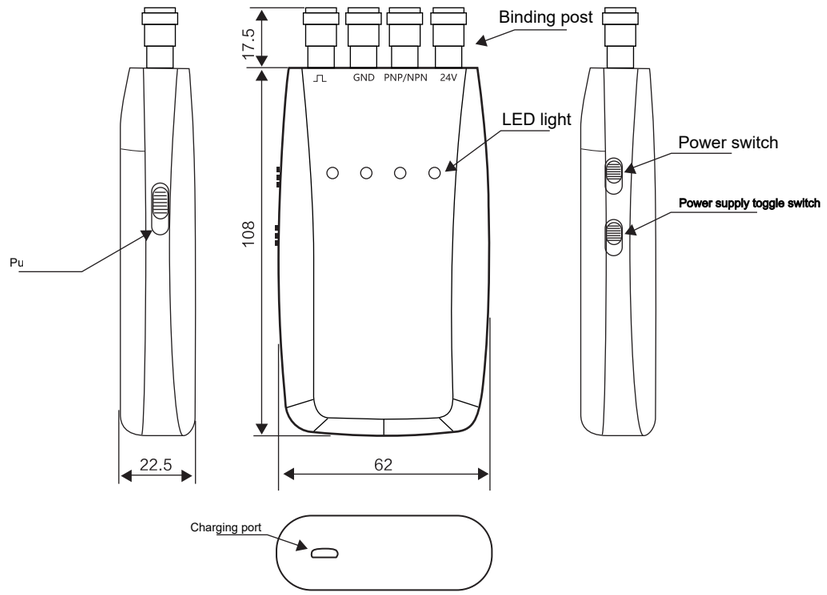
Model	MS-T01
Name	Switching Test Box
Output voltage	DC5/24V optional
Output current	5V:¡ 0.2A;24V:¡ 0.15A
Output signal	NPN/PNP automatic recognition
Dimension(mm)	125.5(L)×62(W)x22.5(D)
Characteristics	Simple wiring, high capacity battery



Product parameters

Appearance	
Model	MS-T01
Name	Sensor test box
Power supply	Rechargeable lithium battery
Output voltage	5V:4.8V-5.2V;24V:19.0-24.0
Output current	5V:¡ 0.4A;24V:¡ 0.15A
Output signal	NPN/PNP automatic recognition
Battery capacity	2500mAH
Working time	10 hrs
Charging time	6 hrs
External charging voltage	DC4.8V~5.2V
Operating temperature	-10¡ ~+45¡
Weight	145g
Dimension	L125×W62×D23(mm)
Other functions	Buzzer alert, sleep mode, output short circuit protection

Dimension diagram (unit: mm)



Specialized sensor

- Slotted sensor
- Optical fiber sensor
- Displacement sensor
- Safety sensor
- Photoelectric sensor
- Proximity sensor
- Specialized sensor