

MS COLOR MARK SENSOR



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

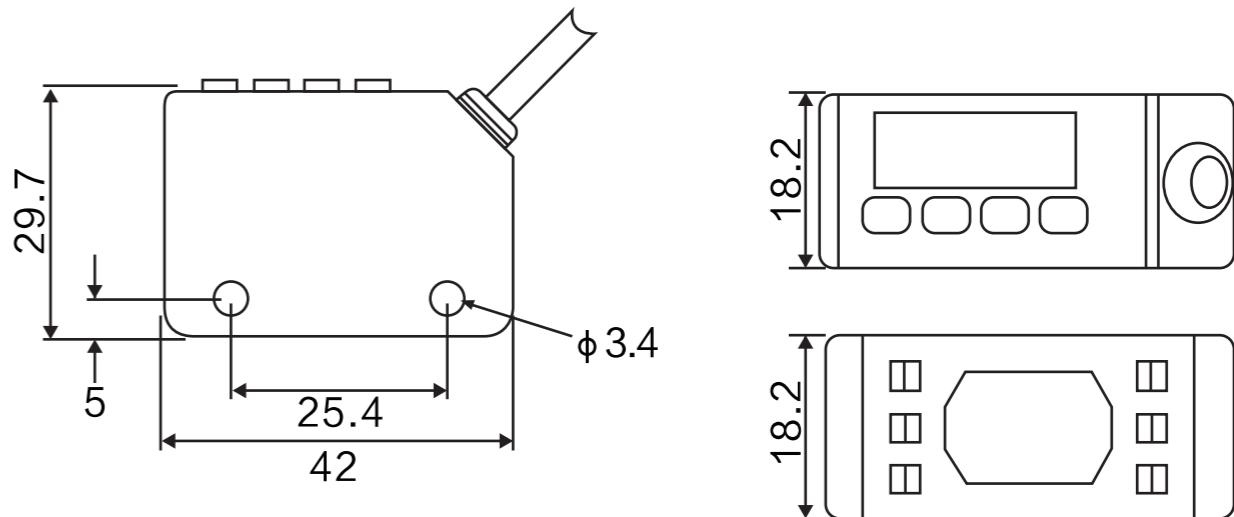


Color mark sensor

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微秒	

Dimension diagram (unit: mm)



Specialized sensor

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

MS MAGNETIC SENSOR



Magnetic sensor

Product



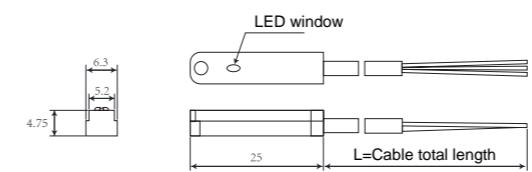
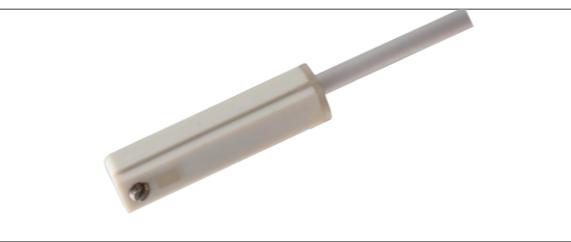
Characteristics:

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

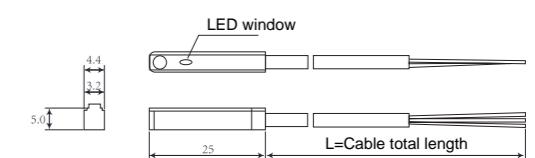
Parameters

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				

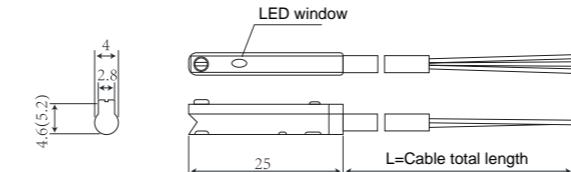
MS-AE



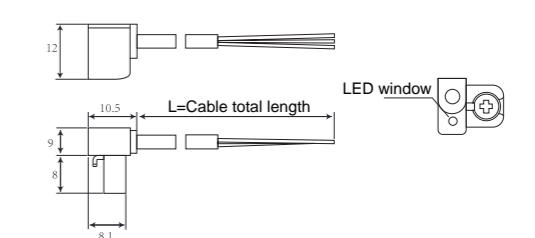
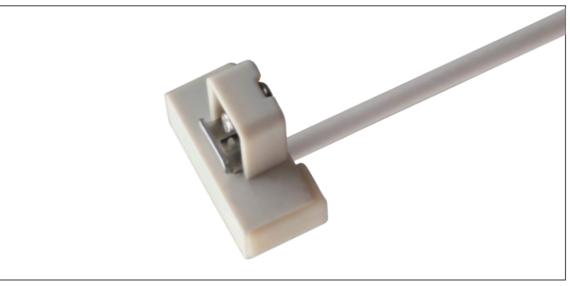
MS-AG



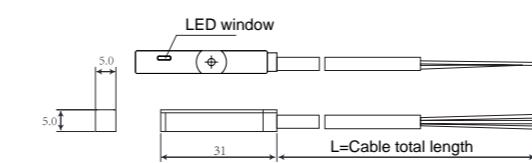
MS-AH



MS-AJ



MS-A39



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

MS NEGATIVE PRESSURE SENSOR



Negative pressure sensor

Characteristics

Setting content at a glance

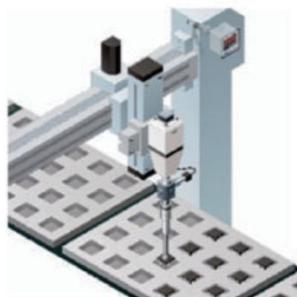
Informs DP-100 setting contents in digital display

You can easily handle the settings by numerical values, and it is helpful for maintenance over the phone calls.

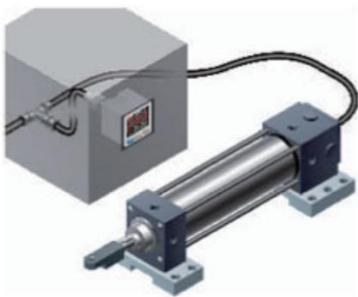


Wiring method

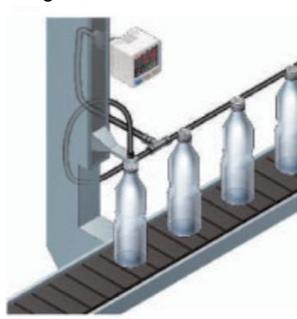
Adsorption confirmation of electronic parts



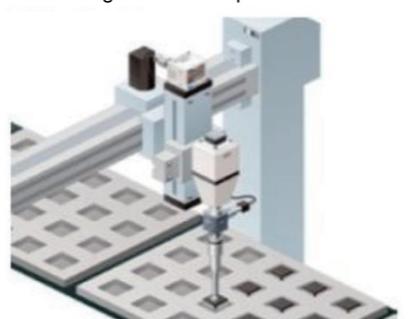
Confirmation of total pressure



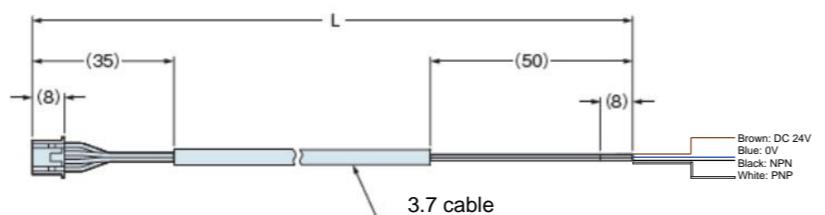
Air leakage detection



Mounting on movable parts



Connection wire



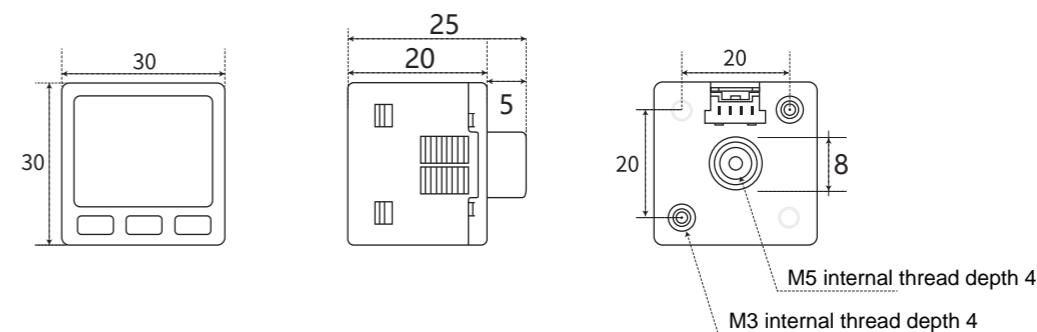
UX1008

Negative pressure sensor

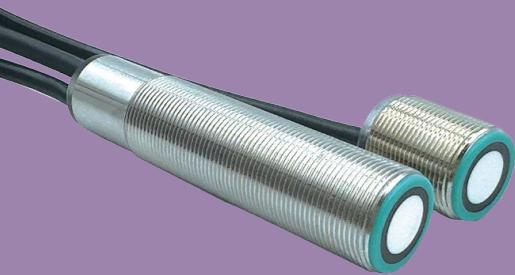
Product parameters

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)	
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	50M 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/s ² 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

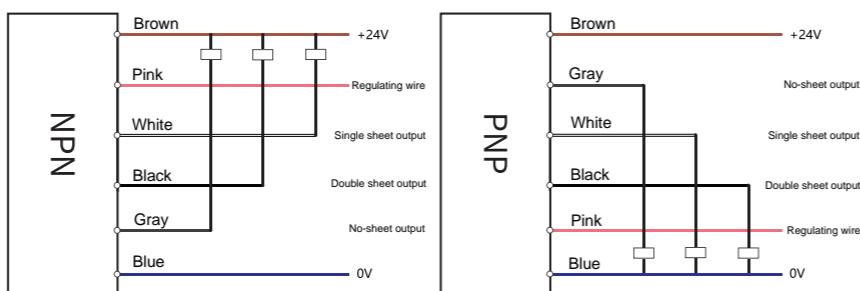


Ultrasonic single-and-double-sheet sensor

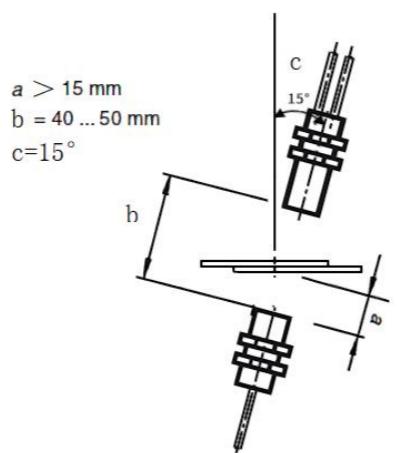
Product characteristics

- 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.

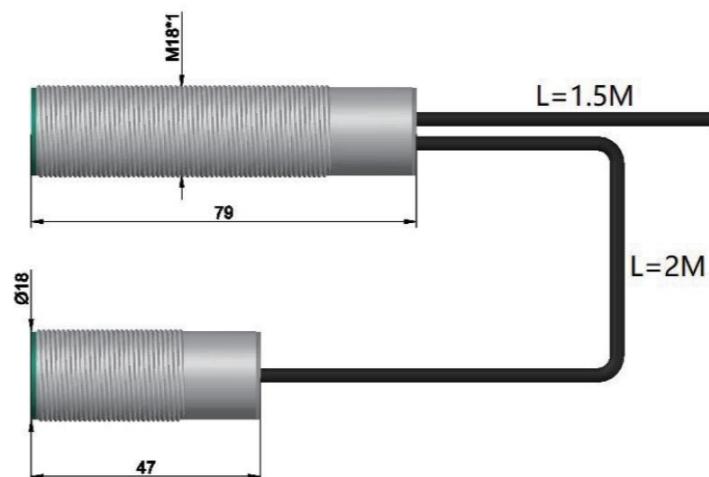
Ultrasonic single-and-double-sheet sensor

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

Specialized sensor

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

MS INTELLIGENT CODE READER

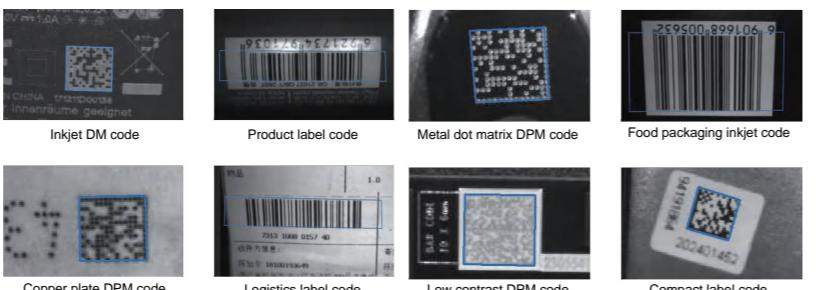


Intelligent code reader

Characteristics

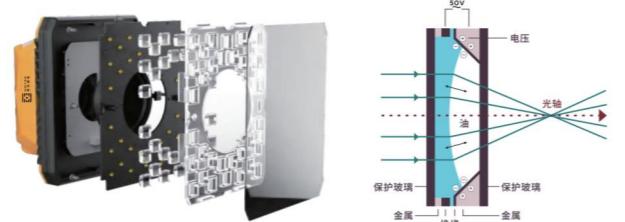
An extremely small fixed industrial code reader that can be perfectly embedded in automated machine equipment while guaranteeing high image quality and efficient recognition. For customers with demanding installation space requirements, the product series is complete, with a large selection space, and 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.



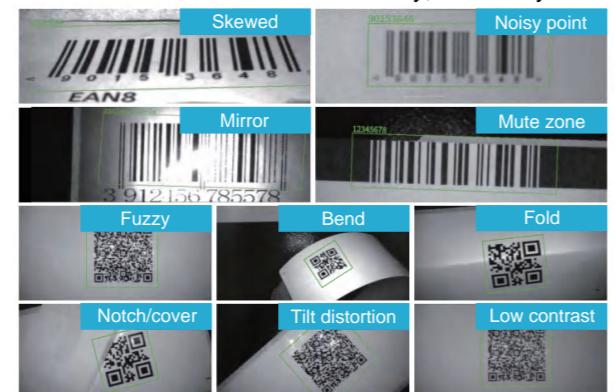
Liquid focusing

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.

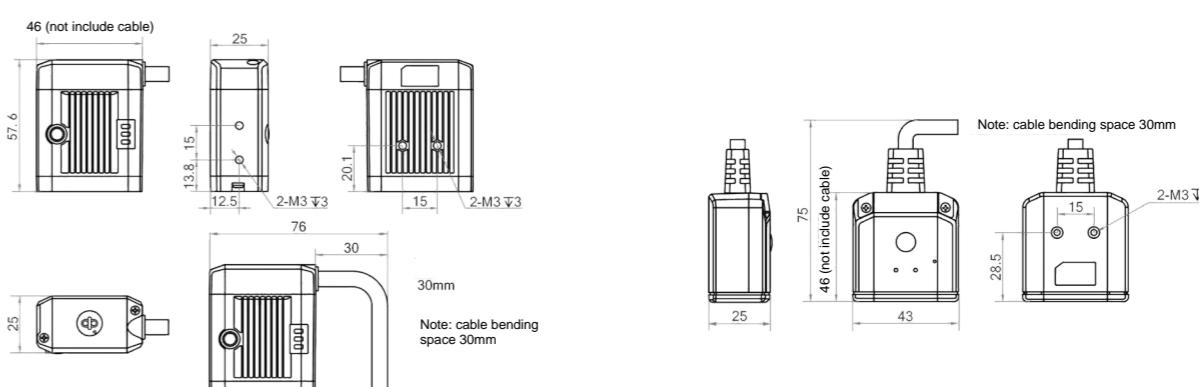


Intelligent code reader

Product parameters

Product model	MS-CR116M06	MS-CR116M10	MS-CR116M16	MS-CR113E05
Reading parameters				
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				
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, ModBus 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

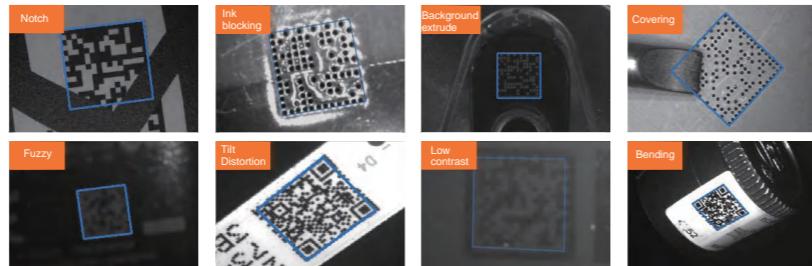
MS INTELLIGENT CODE READER



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



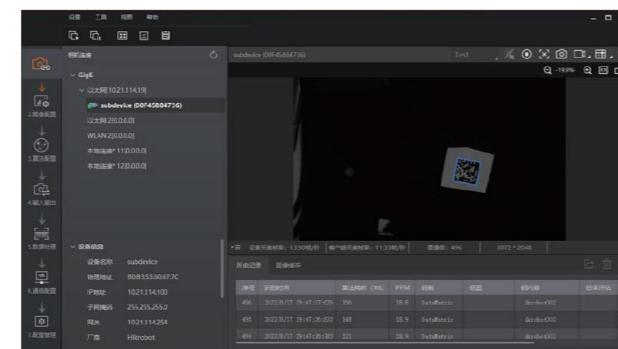
Rich selection of light sources, lenses and other modules, easy to switch, can ensure that the optimal image lighting effect, can adapt to the requirements of different working distance and field of vision

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

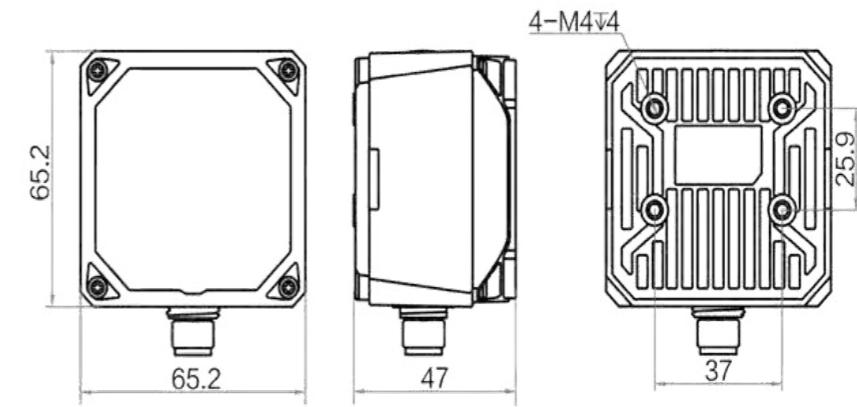


Intelligent code reader

Product parameters

Product model	MS-CR216M06	MS-CR216M12	MS-CR216M15	MS-CR250M12	MS-CR250M25
Reading parameters		1408x1024			2368x1760
Resolution (HxV)					
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, ModBus 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

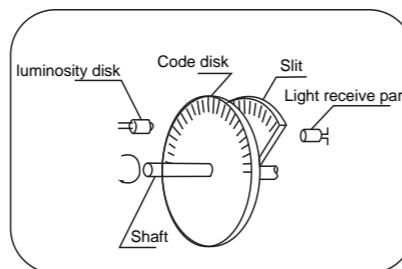


Encoder

Characteristics

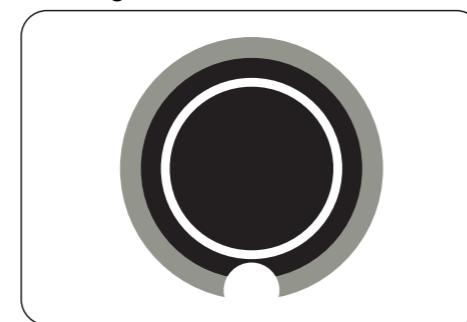
Rotary encoders are rotational speed and position displacement sensors that combine optical, mechanical and electrical technology. When the encoder shaft drives the grating disk rotation, the light emitted by the light-emitting component is cut into intermittent light by the grating disk slit and is 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.



Encoder

Selection rules

MS-E — 25 A — 1000 N W

W=direct outgoing wire 2 meters J=aviation plug 2 meters Cn=special wire length n meters

Signal output: NPN signal, PNP signal E=voltage F=push-pull L=drive output 5V

Encoder resolution: 200 360 400 500 1000 etc.

Power supply source: A=5V B=8~24V

Outer diameter dimensions: 25mm 30mm 38mm 50mm 58mm

Product category: MS-E=Encoder

Specialized sensor

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

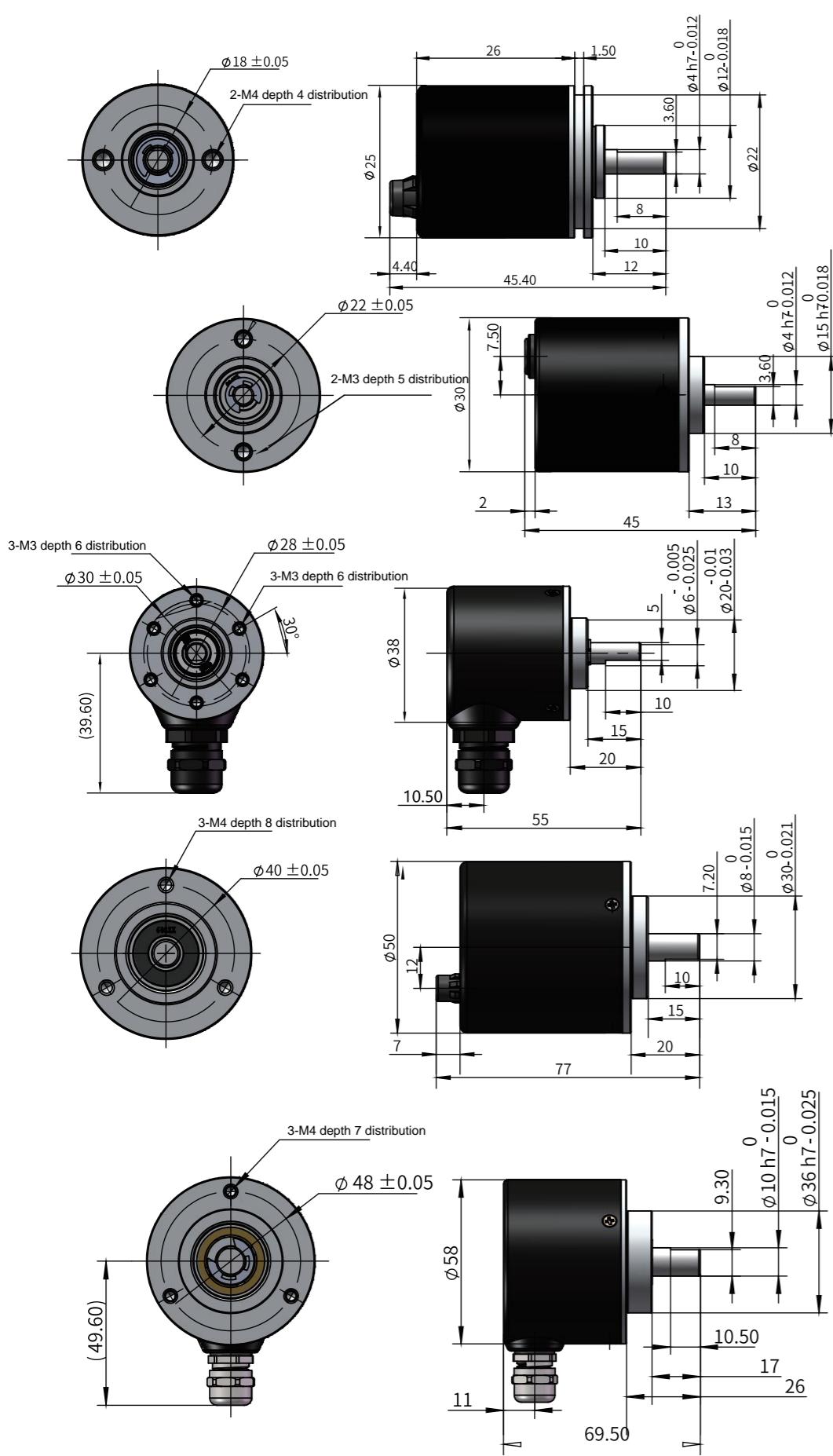
Wiring method

Signal	VCC	OV	SIG A	SIG A	SIG B	SIG B	SIG Z	SIG Z	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	$2 \times 10^3 \text{ N} \cdot \text{m} (+25^\circ)$
Current consumption	100mA	Allowable shaft load	Axial 9.8N, radial 9.8N
Response frequency	0~100kHz	Moment of inertia	$4 \times 10^{-6} \text{ Kgm}^2$
Operating temperature	-20 ~+70	Max. RPM	5000r/min
Storage temperature	-20 ~+80	Protection level	IP54
Output item	A,B,Z	Vibration resistant	50m/S ² (10~200Hz 2 hours in each direction of x,y,z)
Output voltage VH	Vcc-2.5V	Impact resistant	980m/S ² (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	Weight	Housing: aluminum alloy plastic spray powder
	DC12V~24V		50g
Rise/fall time	5V driver 0.1us		
	24V<lus		

Dimension diagram (unit: mm)



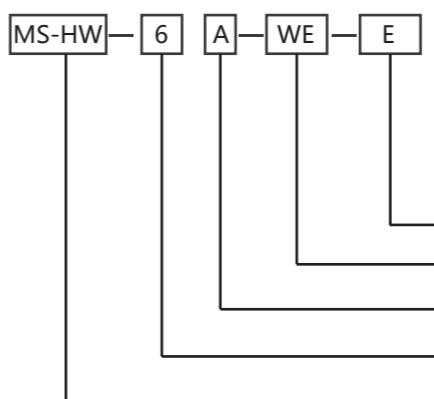
Handwheel series

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



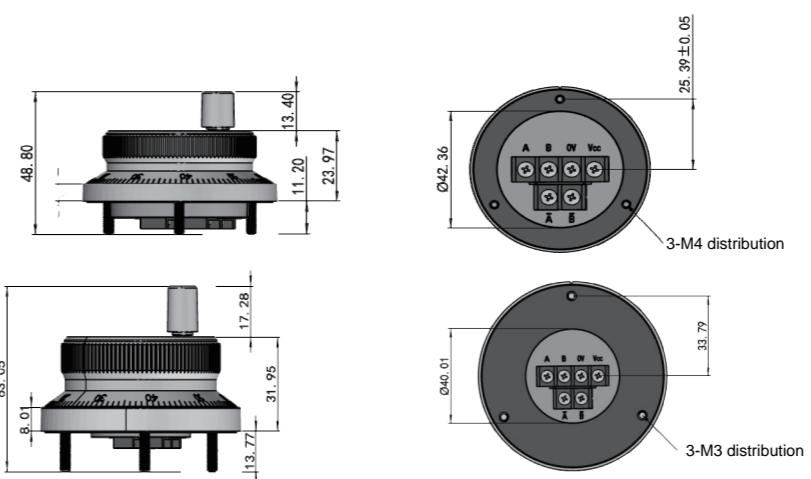
Slotted sensor
Optical fiber sensor
Displacement sensor
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Specialized sensor

Selection rules



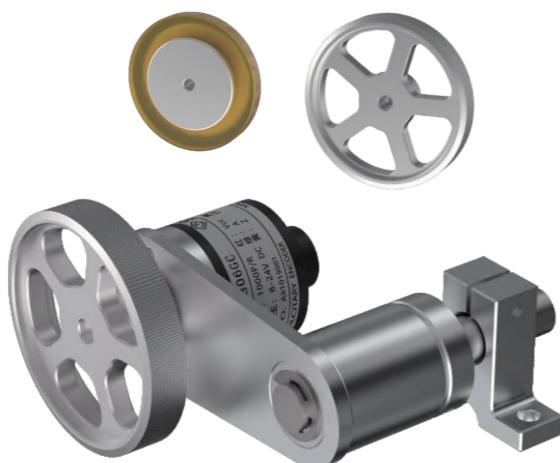
Signal output: E=Voltage L=Drive
None = default hand wheel, W = hand wheel with wire, WE = hand wheel with wire and emergency stop
Pulse number: A=25 B=100
Outer diameter size: 6=60mm 8=80mm
Product category: MS-HW= Hand wheel series code reader

Dimension diagram (unit: mm)



Meter wheel series

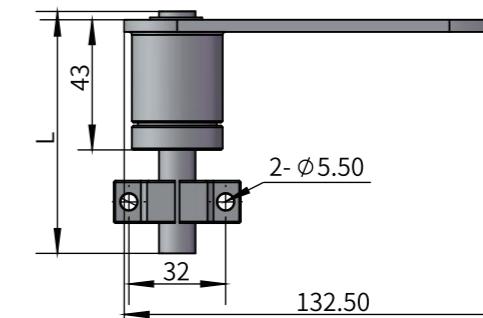
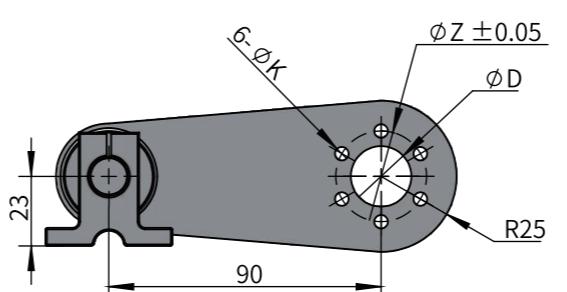
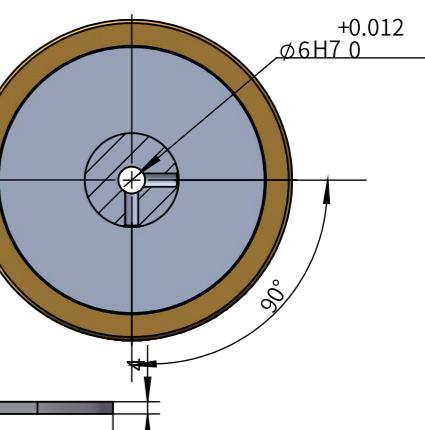
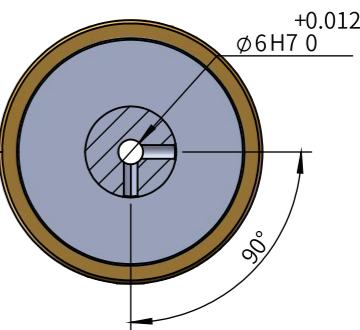
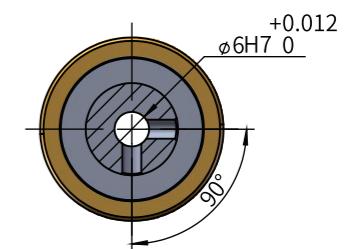
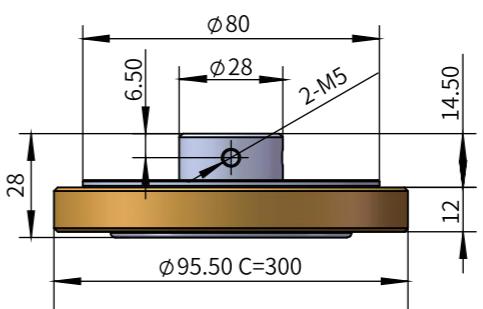
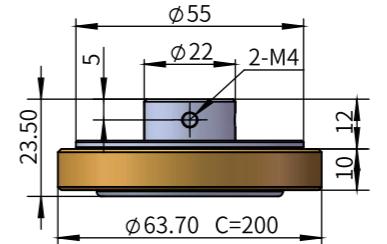
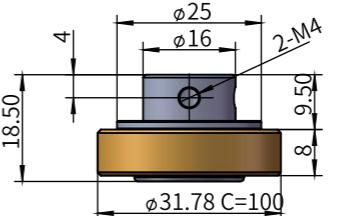
Soft wheel, hard wheel two options for all occasions, a variety of inner holes, a variety of perimeters, easy to choose the encoder with a variety of size accounting, non-standard customization



Meter wheel specification table

Model	Circumference C (mm)	Outer diameter D (mm)	Inner diameter d (mm)
MS-J100	100	31.8	
MS-J200	200	63.7	
MS-J300	300	95.5	
MS-JDB20	—	Z=20	Default 8mm Customizable 6 or 10
MS-JDB30	—	Z=40	

Handwheel series



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

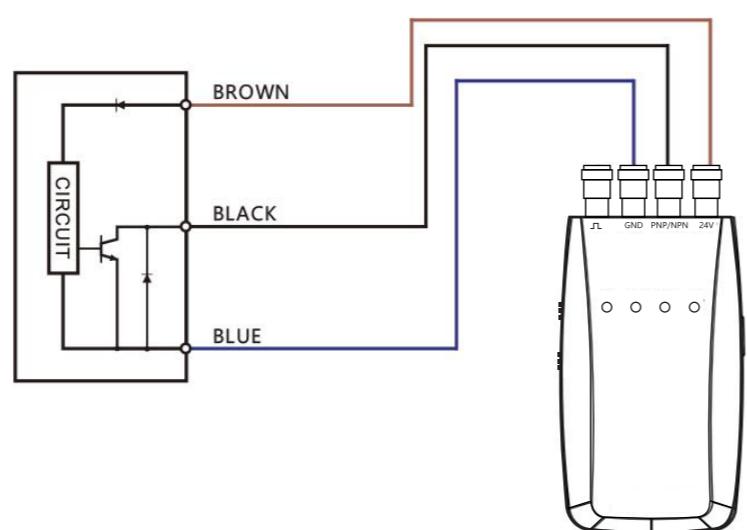
MS SENSOR TESTER



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)×22.5(D)
Characteristics	Simple wiring, high capacity battery

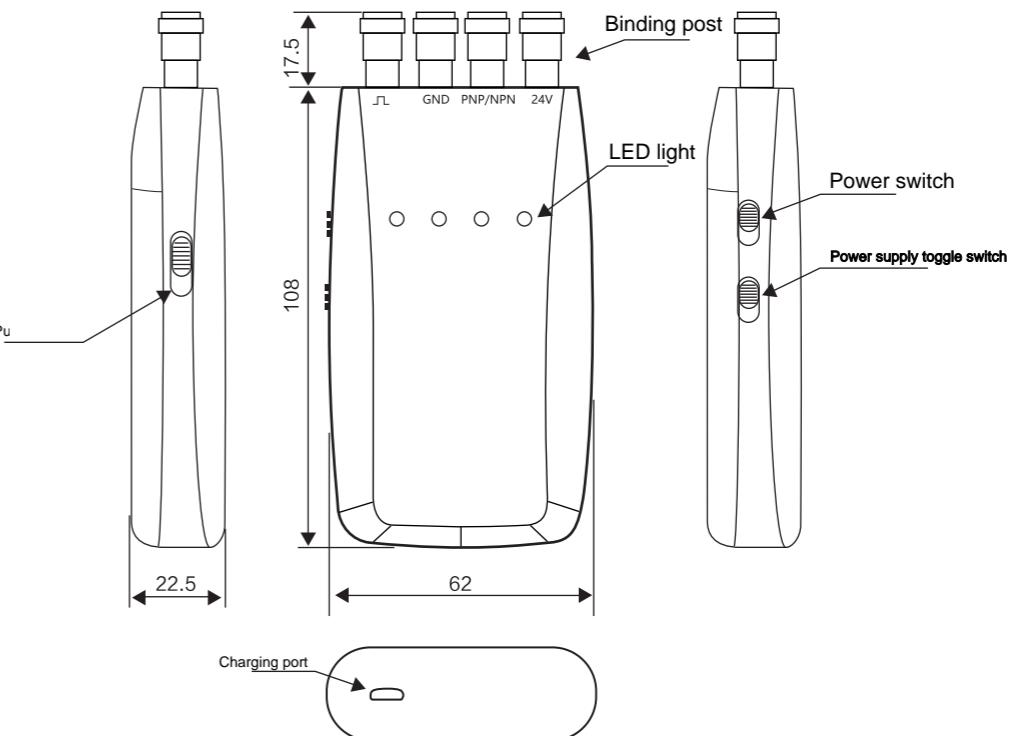


Sensor tester

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