

# 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

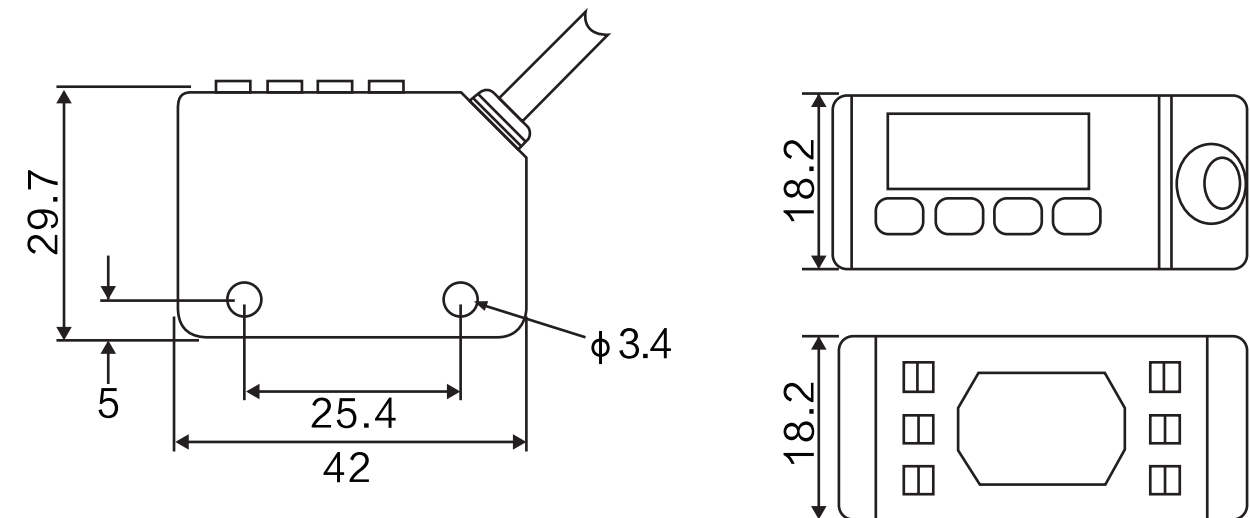


## Color mark sensor

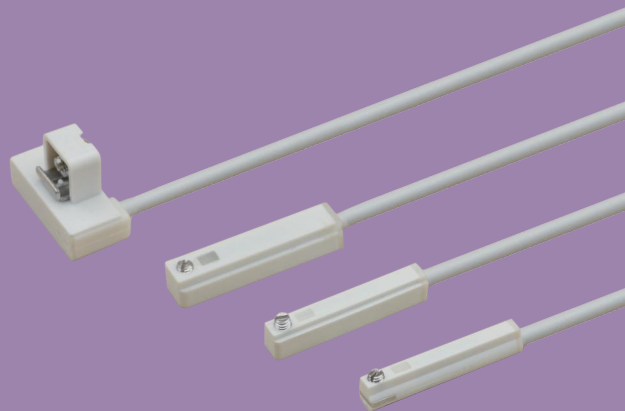
### Product parameters

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)



# MS MAGNETIC SENSOR



## Magnetic sensor

### Product



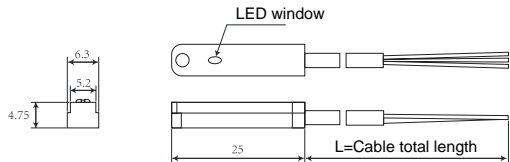
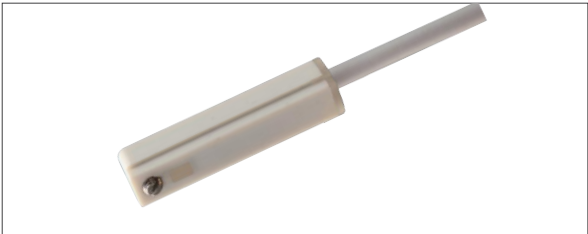
- Characteristics:
- 1. Electronic non-contact, long service life
  - 2. High sensitivity, no false action
  - 3. Built-in chip, good consistency
  - 4. Cables resistant to bending, oil and water resistant
  - 5. Universal matching of various brands of air cylinders
  - 6. Three-wire NPN, PNP, normally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

### Parameters

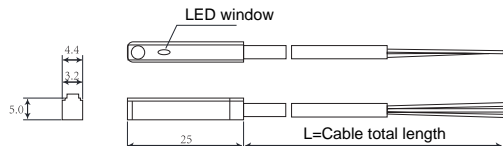
Type	MS-AE	MS-AG	MS-AH	MS-AJ	MS-A39
Type	E-type	G-type	H-type	J-type	R-type
Switching logic	Normally open type, two-wire electron tube type, non-contact				
Current Voltage	10V~27V 50mA Max				
Operating temperature	-10 ~70				
Switching frequency	1000 Hz				
Protection circuit	Power reverse connection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

## Magnetic sensor

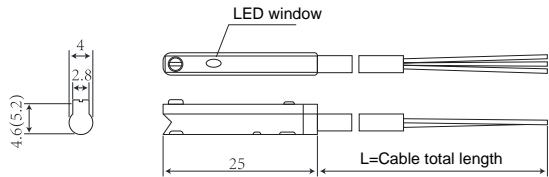
### MS-AE



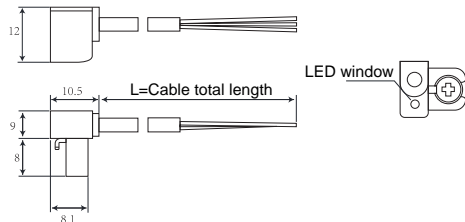
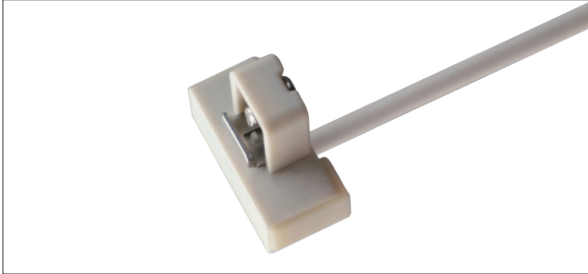
### MS-AG



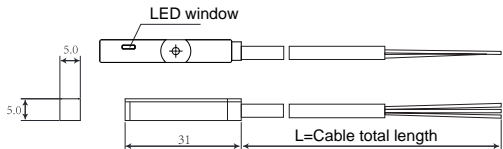
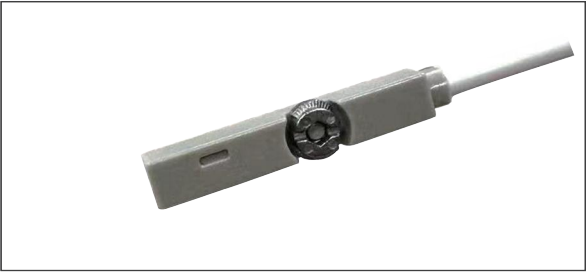
### MS-AH



### MS-AJ



### MS-A39



Specialized sensor

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

MS  
NEGATIVE  
PRESSURE  
SENSOR



Negative pressure sensor

Characteristics

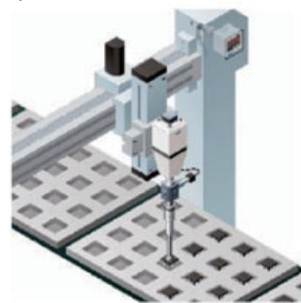
Setting content at a glance

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

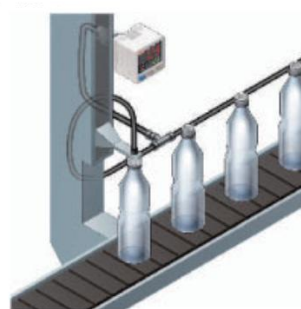
Adsorption confirmation of electronic parts



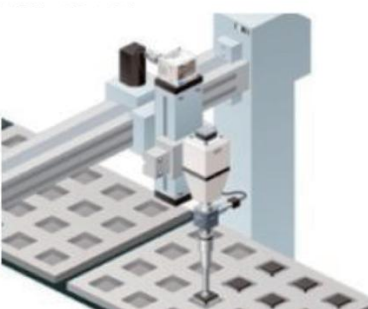
Confirmation of total pressure



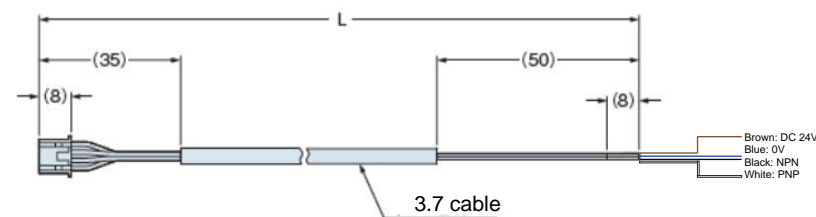
Air leakage detection



Mounting on movable parts



Connection wire



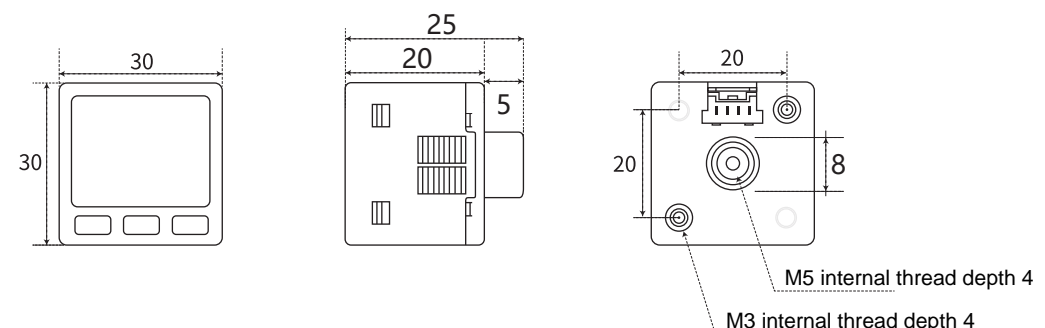
UX1008

Negative pressure sensor

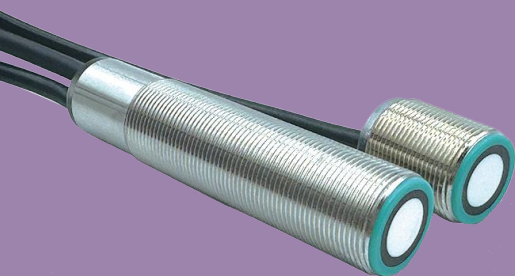
Product parameters

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 $\pm 10\%$		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	$\pm 0.1\%$ F.S. (within $\pm 2$ digits)		$\pm 0.2\%$ F.S. (within $\pm 2$ 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 $\Omega$ 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 <sup>2</sup> 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

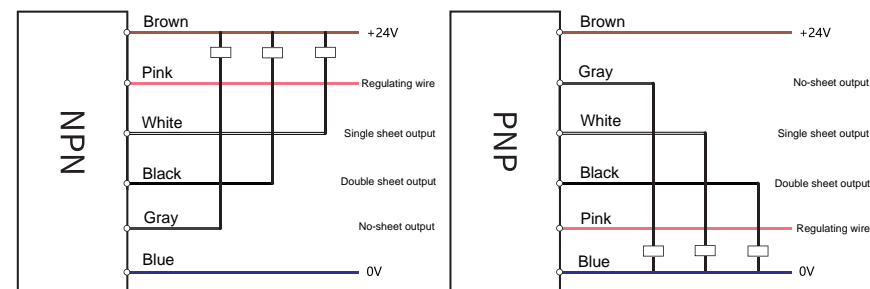


## Ultrasound single-and-double-sheet sensor

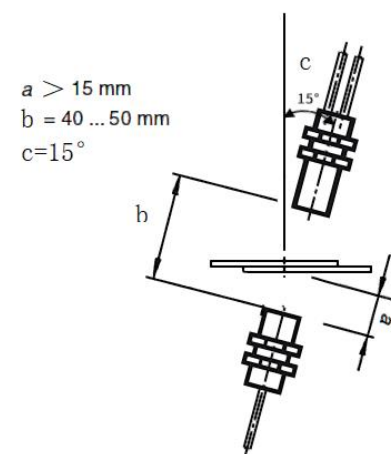
### Product characteristics

- 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



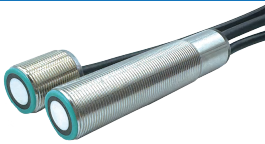
### Installation schematic



- 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.

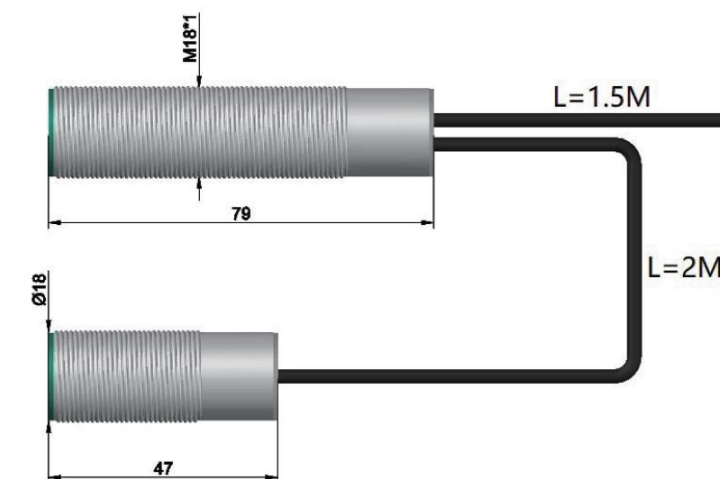
## Ultrasound single-and-double-sheet sensor

### 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



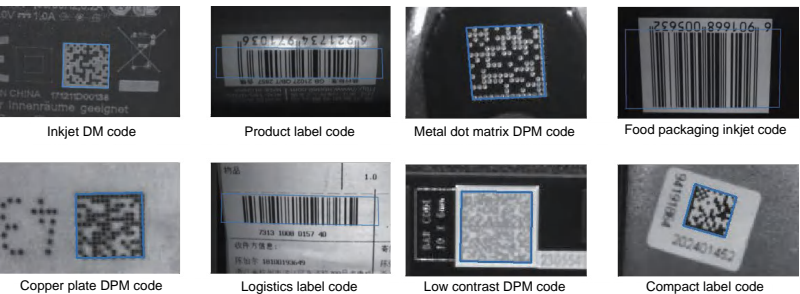
MS  
INTELLIGENT  
CODE  
READER



Intelligent code reader

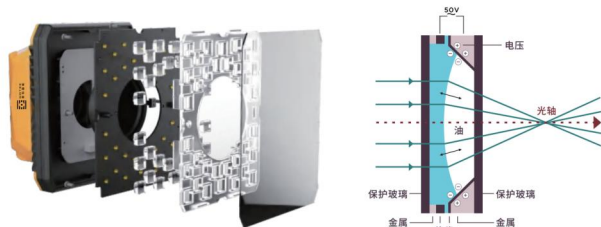
Characteristics

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.



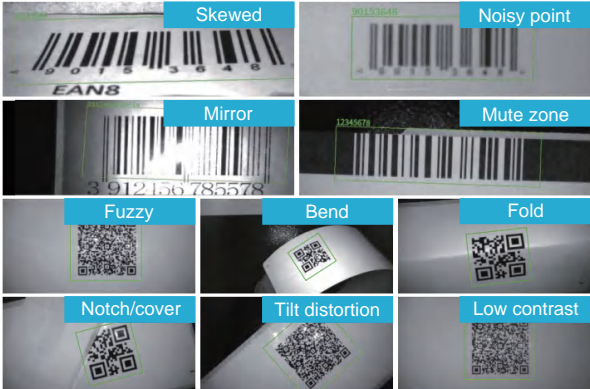
Liquid focusing

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.

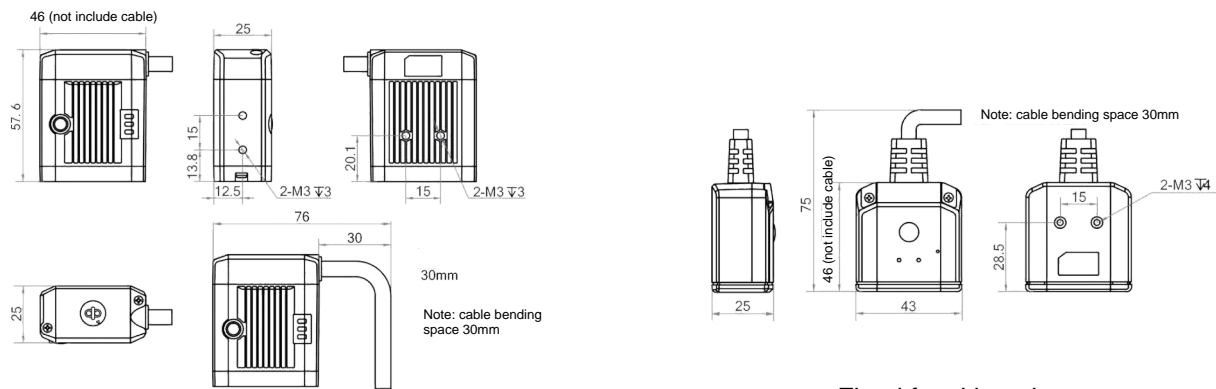


Intelligent code reader

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	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

Specialized sensor

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

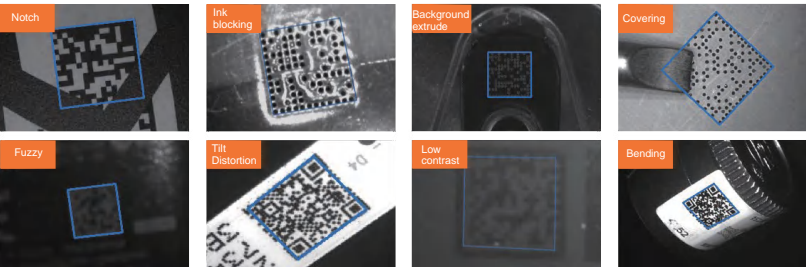
MS  
INTELLIGENT  
CODE READER



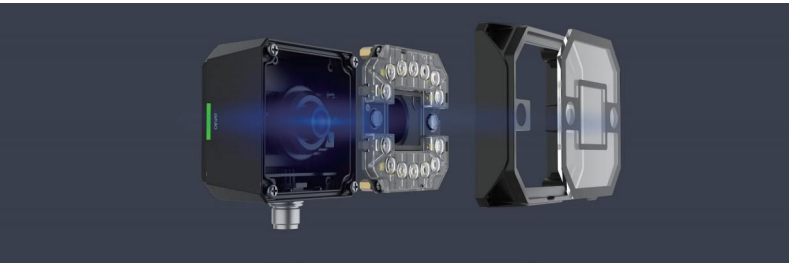
Intelligent code reader

Characteristics

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



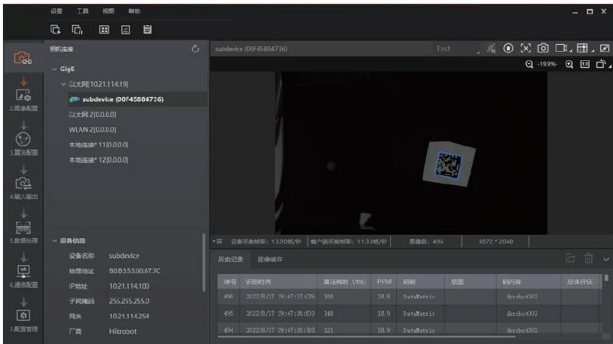
Rich selection of light sources, lenses and other modules, easy to switch, can ensure that the optimal image lighting effect, can adapt to the requirements of different working distance and field of vision

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

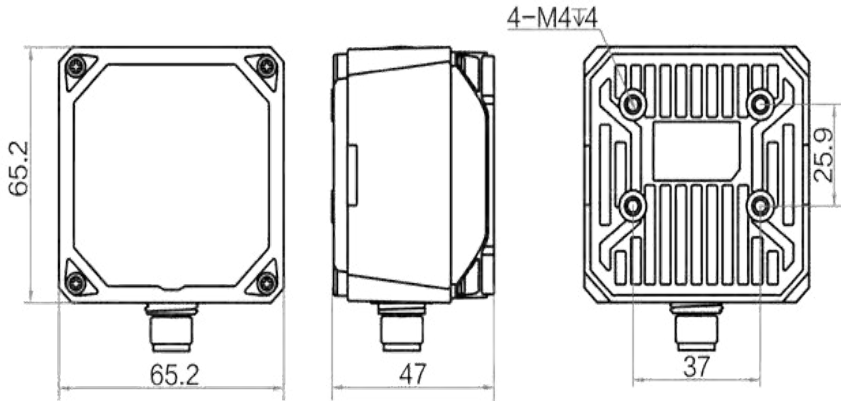


Intelligent code reader

Product parameters

Product model	MS-CR216M06	MS-CR216M12	MS-CR216M15	MS-CR250M12	MS-CR250M25
Reading parameters					
Resolution (HxV)	1408x1024			2368x1760	
Frame rate (fps)	60				
Color/monochrome	Monochrome				
Shutter	Global				
Exposure time	20μm~1sec				
Pixel size	3μm×3μm				
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)



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

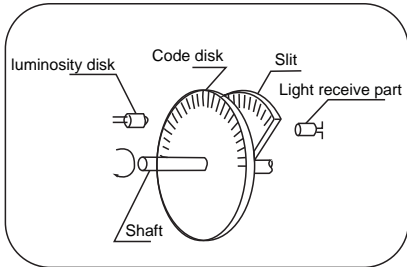
MS  
ENCODER



Characteristics

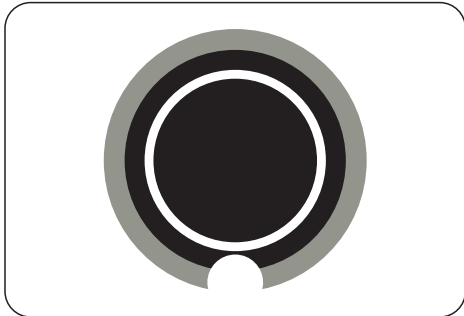
Rotary encoders are rotational speed and position displacement sensors that combine optical, mechanical and electrical technology . When the encoder shaft drives the grating disk rotation, the light emitted by the light-emitting component is cut into intermittent light by the grating disk slit and is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

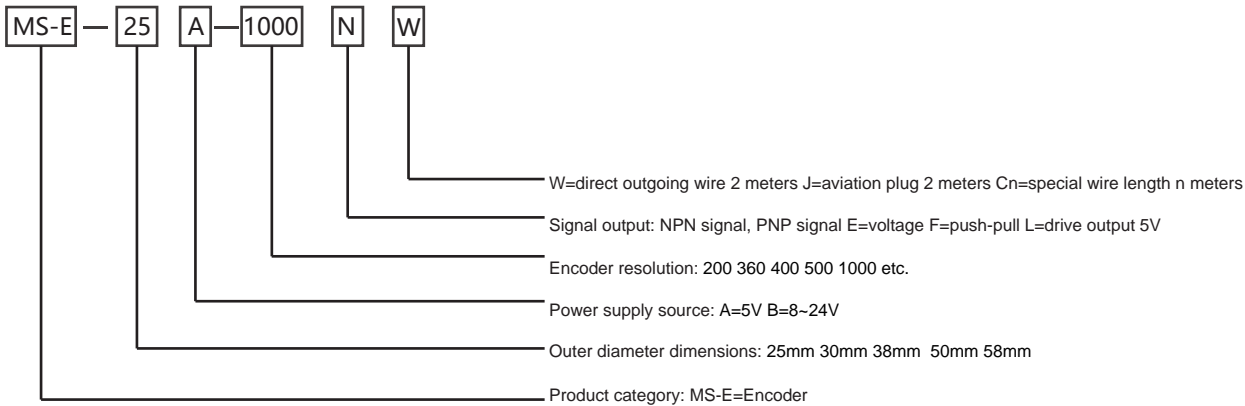


Incremental encoder

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

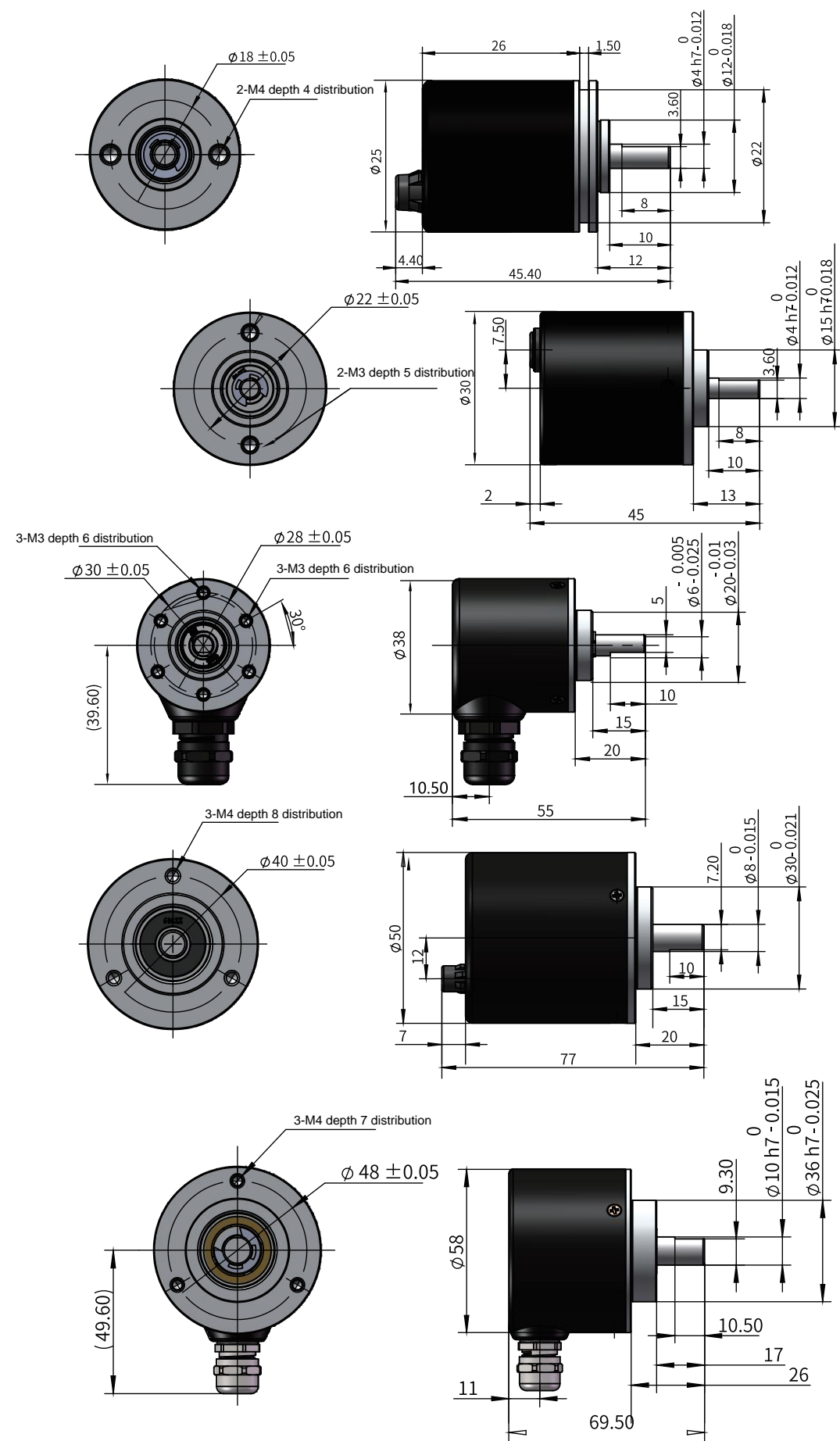
Signal	VCC	OV	SIG A	SIG A	SIG B	SIG B	SIG Z	SIG Z	N.C
Cable color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Copper mesh

Product parameters

Electrical parameters			Mechanical parameters
Pulse number	Max. 500P/R	Starting torque	2*10³N ·m(+25 )
Current consumption	100mA	Allowable shaft load	Axial 9.8N, radial 9.8N
Response frequency	0~100kHz	Moment of inertia	4x10?? Kgmm²
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		

- Slotted sensor
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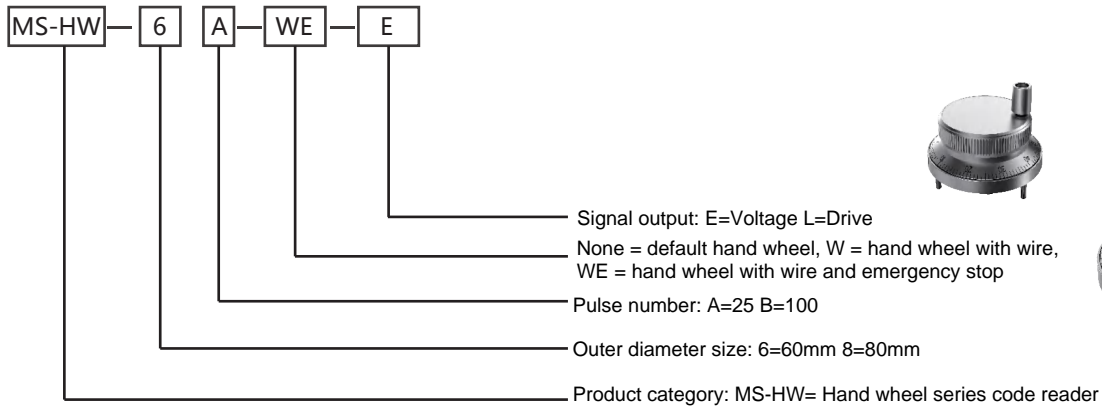


## Handwheel series

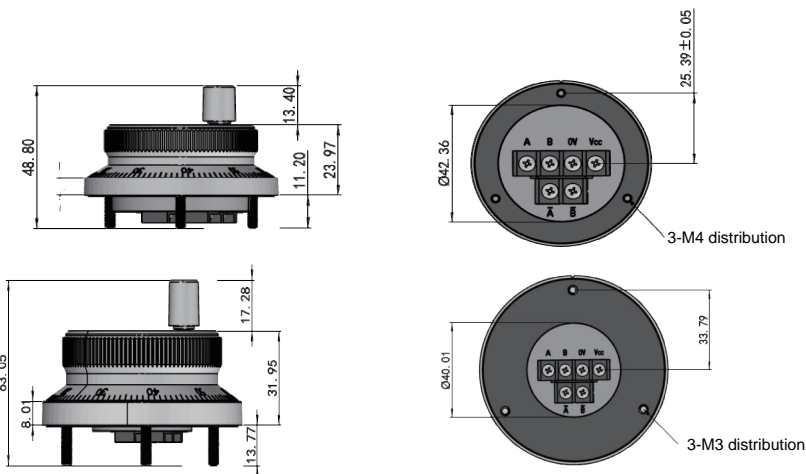
Characteristics	
Japanese all-metal coded disk, accurate scale, high precision, good texture	Strong anti-interference ability, can be transmitted over long distances
Voltage, differential, and single-ended outputs available	Supports up to 11 axes of control with selectable magnification
Built-in strong 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



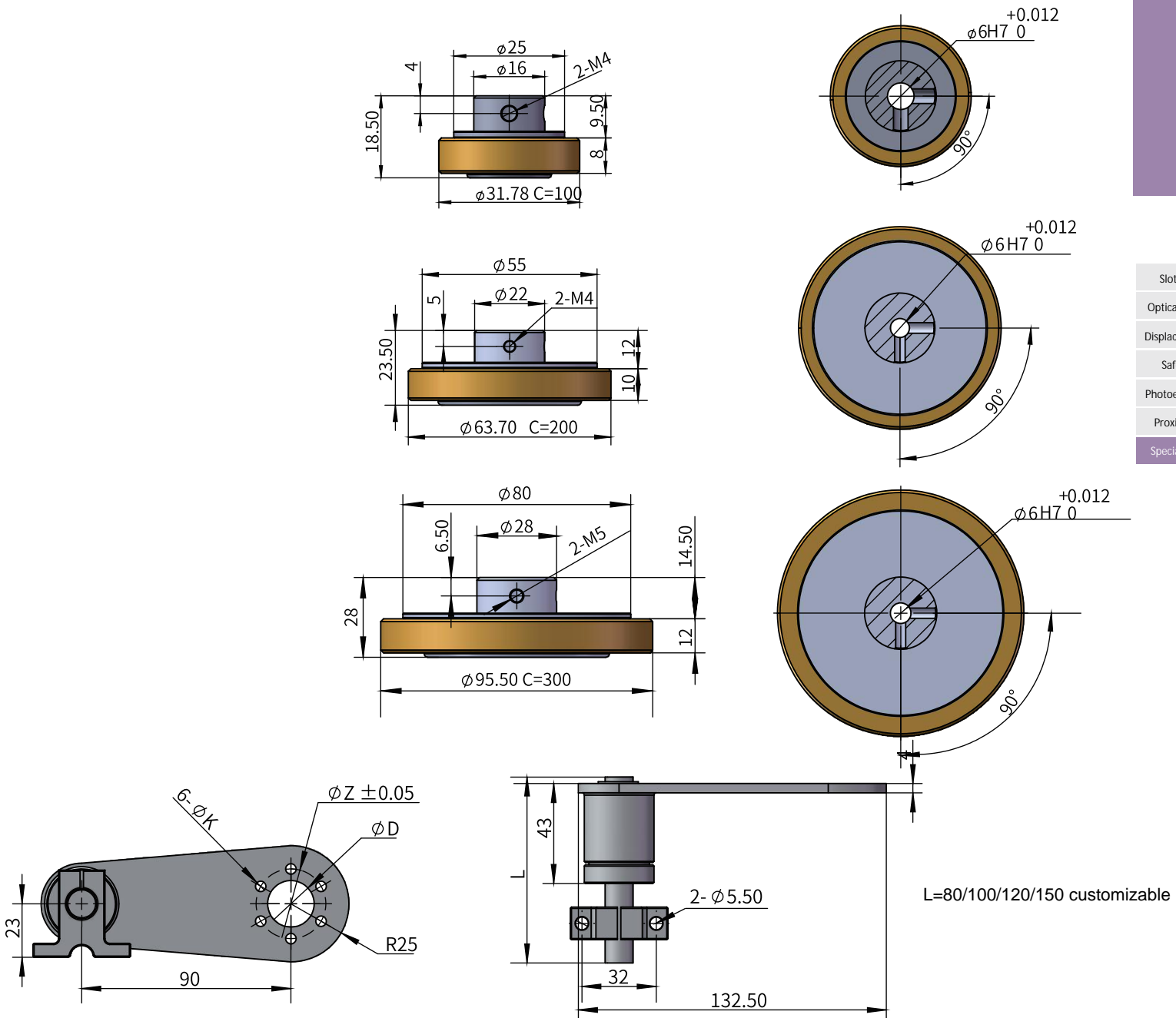
Dimension diagram (unit: mm)





A 3D CAD model of a manual winch assembly. The assembly consists of a hand crank with a five-spoke design, a central drum for winding rope, and a mounting bracket. The drum is labeled with technical specifications: "500KG", "10000PCS", "R: 8-24mm", "S: 10mm", and "MOUNTING BRACKET". The hand crank is shown in a disassembled state, with the drum and the mounting bracket shown separately above the main assembly.

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



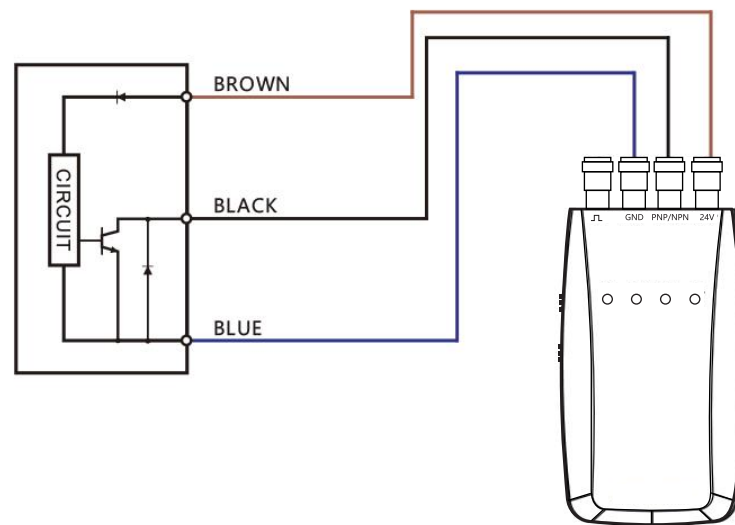
# MS SENSOR TESTER



## 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

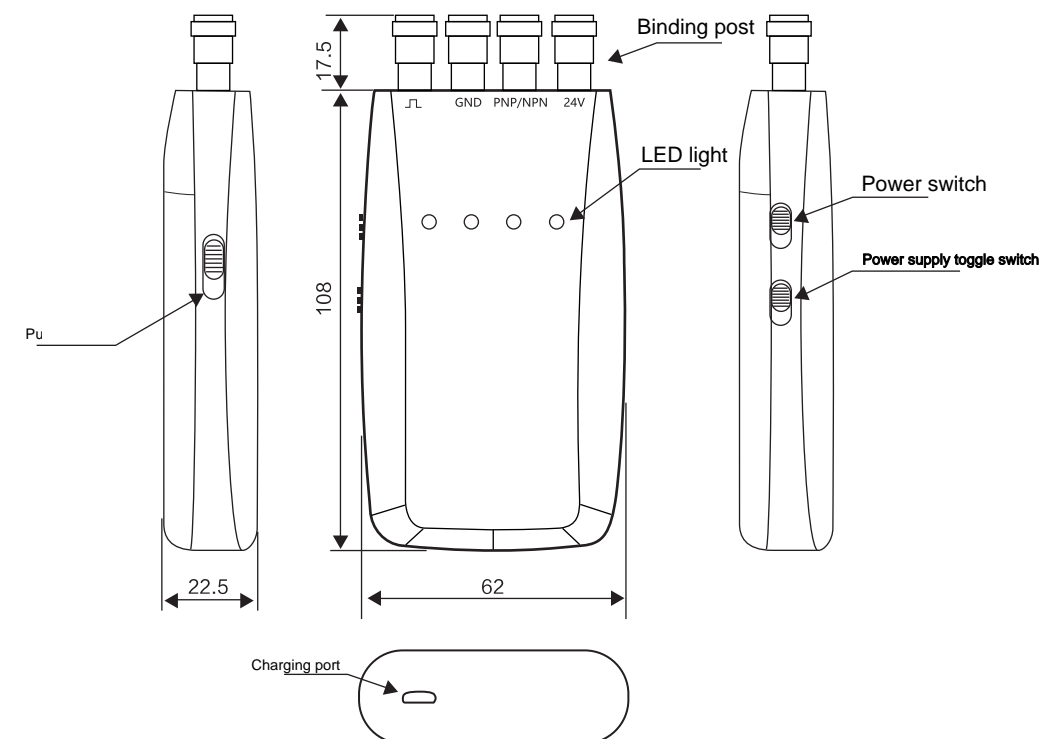


## Sensor tester

### 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