



## Capacitive sensors\_extended sensing distance

## CR18X series

### Operation manual



#### Precautions

- When choosing flush mounting, please pay attention to the change of sensing distance caused by the material of surrounding environment
- The capacitive sensor belongs to dielectric sensitive products, please avoid using in oil, water and other similar environments, especially when there are oil, water or condensation on the sensing surface, since it may be mistaken or causes wrong actions
- The sensor can be detected normally until 300ms after the power is turned on
- When using different power sources for the sensor and load, be sure to turn on the power of the sensor first
- When installing the sensor, do not subject the sensor to severe external force (such as hammering, etc.), which may damage the sensor performance
- When used in high humidity and dust environment, the detection distance may change, please clean the sensor regularly
- When the sensor is not used, it is recommended to cut off the power of the load first and then turn off the power of the sensor
- Please separately wire sensor cable, power line and high-voltage line, and avoid using the same wiring slot and conduit
- If the cable needs to be lengthened to less than 30m, please choose the cable with section above 0.3mm<sup>2</sup> and conductor impedance less than 100Ω/km. Tip: Under the influence of the distributed capacitance between the wires, the output waveform may be distorted when the cable is too long and responds at high speed.

#### Safety Warning

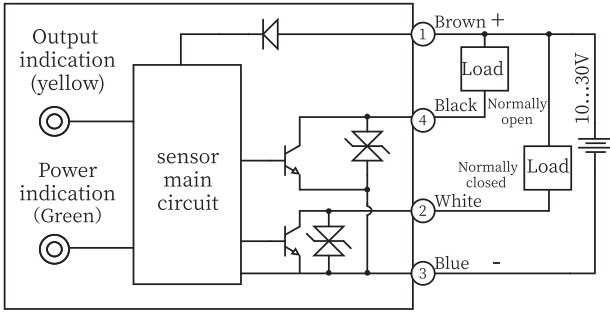
- Do not use in an environment with flammable, explosive or corrosive gases
- Do not use in other environmental conditions that exceed the rated value
- Do not disassemble, repair or modify this product without authorization

#### Scrap Treatment

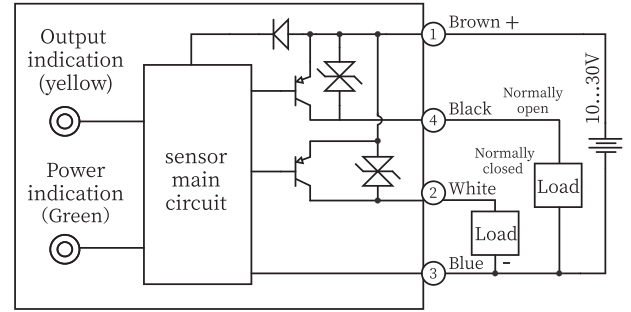
- When the product is scrapped, please dispose of it as industrial waste

# ■ Wiring diagram

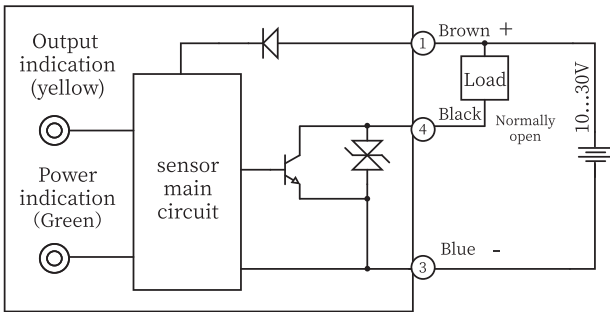
NPN NO+NC



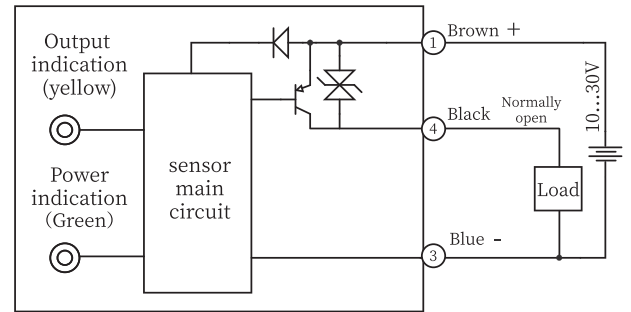
PNP NO+NC



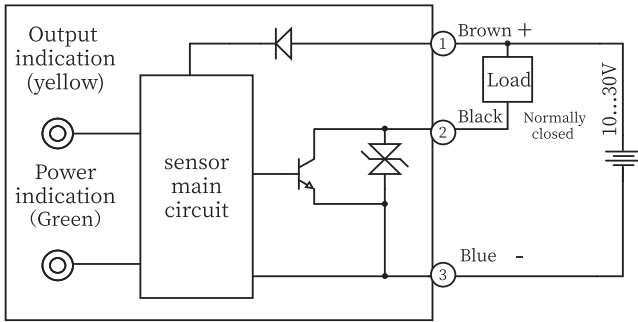
NPN NO



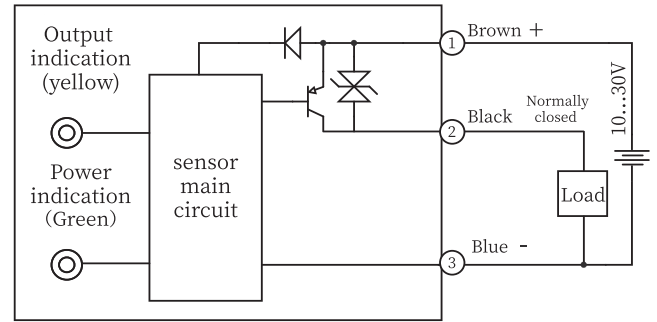
PNP NO



NPN NC



PNP NC



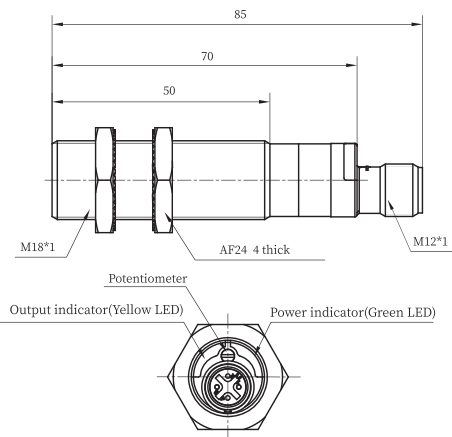
## ■ Technical specifications

Installation type		Flush	Non-flush	Flush	Non-flush
Cable	NPN NO	CR18XCF08DNOY	CR18XCN12DNOY	CR18XSCF08DNOY	CR18XSCN12DNOY
	NPN NC	CR18XCF08DNCY	CR18XCN12DNCY	CR18XSCF08DNCY	CR18XSCN12DNCY
	NPN NO+NC	CR18XCF08DNRY	CR18XCN12DNRY	CR18XSCF08DNRY	CR18XSCN12DNRY
	PNP NO	CR18XCF08DPOY	CR18XCN12DPOY	CR18XSCF08DPOY	CR18XSCN12DPOY
	PNP NC	CR18XCF08DPCY	CR18XCN12DPCY	CR18XSCF08DPCY	CR18XSCN12DPCY
	PNP NO+NC	CR18XCF08DPRY	CR18XCN12DPRY	CR18XSCF08DPRY	CR18XSCN12DPRY
Connector	NPN NO	CR18XCF08DNOY-E2	CR18XCN12DNOY-E2	CR18XSCF08DNOY-E2	CR18XSCN12DNOY-E2
	NPN NC	CR18XCF08DNCY-E2	CR18XCN12DNCY-E2	CR18XSCF08DNCY-E2	CR18XSCN12DNCY-E2
	NPN NO+NC	CR18XCF08DNRY-E2	CR18XCN12DNRY-E2	CR18XSCF08DNRY-E2	CR18XSCN12DNRY-E2
	PNP NO	CR18XCF08DPOY-E2	CR18XCN12DPOY-E2	CR18XSCF08DPOY-E2	CR18XSCN12DPOY-E2
	PNP NC	CR18XCF08DPCY-E2	CR18XCN12DPCY-E2	CR18XSCF08DPCY-E2	CR18XSCN12DPCY-E2
	PNP NO+NC	CR18XCF08DPRY-E2	CR18XCN12DPRY-E2	CR18XSCF08DPRY-E2	CR18XSCN12DPRY-E2
Rated distance Sn	8mm	12mm	8mm	12mm	
Ensure distance Sa	≤5.76mm	≤8.64mm	≤5.76mm	≤8.64mm	
Adjust the distance	3...12mm	3...15mm	3...12mm	3...15mm	
Adjustment method	Multi-turn potentiometer (Electrical adjustment>10)				
Standard test object	Fe 24*24*1t(Grounded)	Fe 36*36*1t(Grounded)	Fe 24*24*1t(Grounded)	Fe 36*36*1t(Grounded)	
Supply voltage	10...30VDC				
Load current	≤200mA				
Residual voltage	≤2V				
Consumption current	≤20mA				
Switch point offset [%/Sn]	≤±10%				
Temperature drift [%/Sr]	≤±20%				
Hysteresis range [%/Sr]	3...20%				
Repetitive error [R]	≤5%				
Circuit protection	Short circuit protection, Overload protection, Reverse polarity protection				
Indicator	Output indication:Yellow LED;Power indicator:Green LED;Overload or short circuit indication:Yellow LED flashes				
Switching frequency	25Hz	35Hz	25Hz	20Hz	
Ambient temperature	When working:-25...70°C(No icing, No condensation);when storing:-30...80°C(No icing, No condensation)				
Environment humidity	35...95%RH(No icing, No condensation)				
Vibration resistant	10...55Hz,Dual amplitude 1mm(2 hours each in X, Y, and Z directions)				
Impulse withsand	30g/11ms,3 times each for X,Y,Z direction				
High pressure resistant	1000V/AC 50/60Hz 60s				
Insulation resistance	≥50MΩ (500VDC)				
Protection degree	IP67			IP68	
Housing material	Nickel copper alloy			PBT	
Connection type	2m PVC Cable;M12 Connector				
Accessories	M18 nuts×2, Slotted screwdriver, Operation manual				

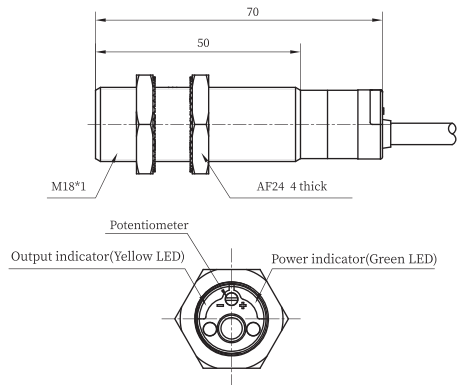
Note: the factory default sensing distance is  $S_n \pm 10\%$

## ■ Dimensions

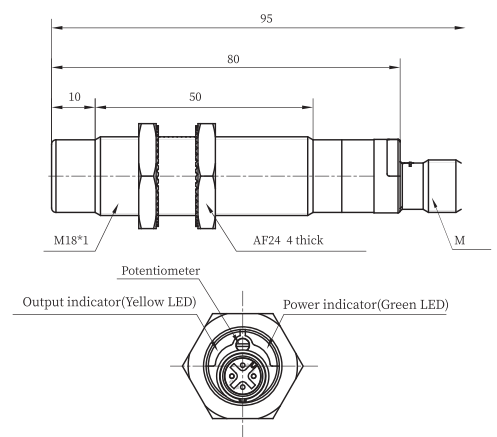
### Metal Housing-Flush-Connector



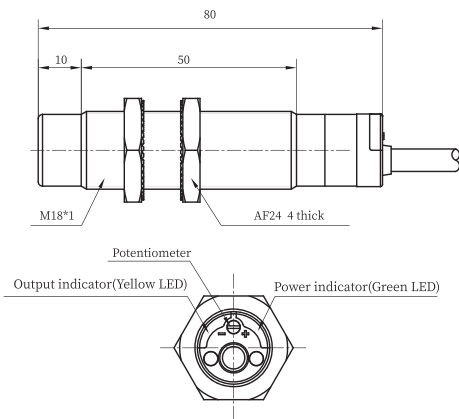
### Metal Housing-Flush-Cable



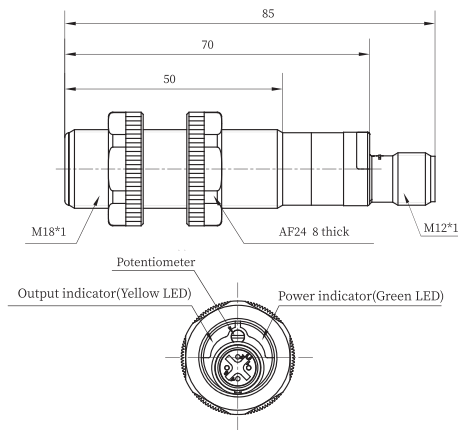
### Metal Housing-Non-flush-Connector



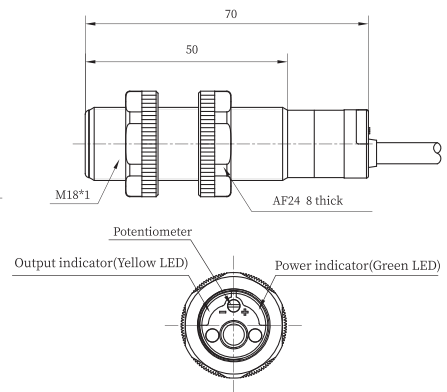
### Metal Housing-Non-flush-Cable



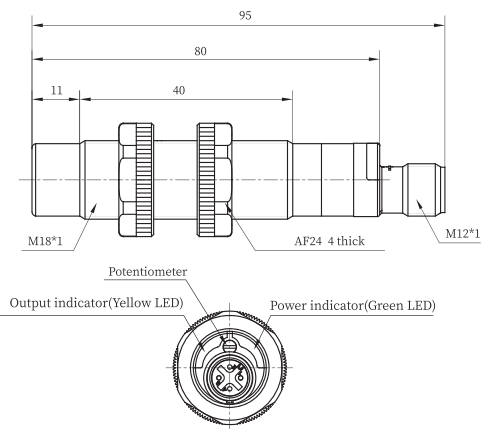
### Plastic Housing-Flush-Connector



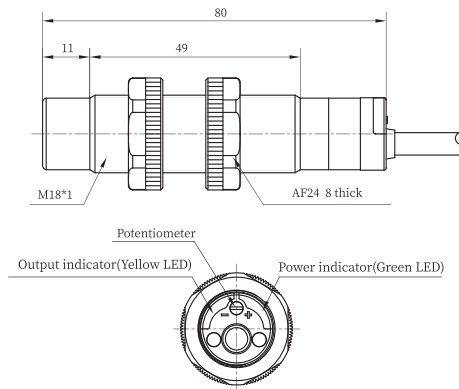
### Plastic Housing-Flush-Cable



### Plastic Housing-Non-flush-Connector



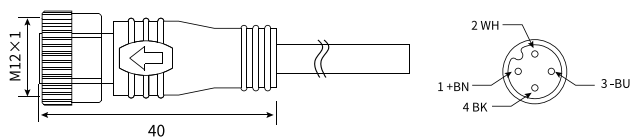
### Plastic Housing-Non-flush-Cable



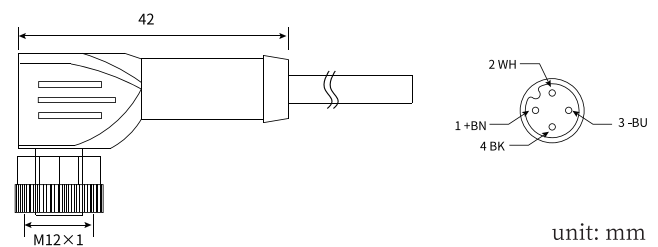
unit: mm

## ■ Accessory Dimensions

### M12 Connector QE12-N4F2(Order separately)



### M12 Connector QE12-N4G2(Order separately)



unit: mm

## ■ Mounting

