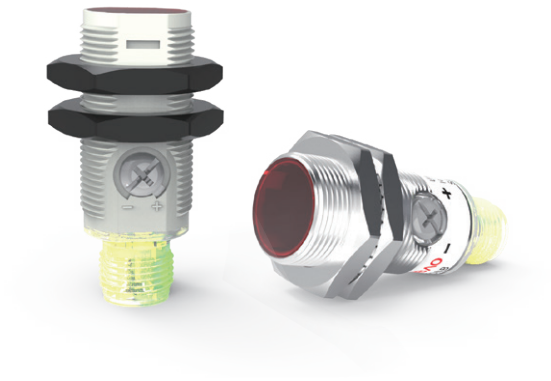
LANBAO

Photoelectric sensor PSS/PSM series

Operation Instruction



CE

Precautions

- To ensure signal strength, it is not recommended to adjust the adjustment handle to the minimum value when using polarized products.
- The maximum allowable voltage of the sensor is 10% of the rated voltage. Please confirm that the supply voltage is less than the maximum allowable value before powering on.
- The time from powering-on to normal detection of the sensor is 100ms, please ensure that the sensor is used after 100ms of powering-on.
- When using different power sources for the sensor and load, be sure to turn on the power of the sensor first.
- 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.
- When installing the sensor, do not subject the sensor to severe external force (such as hammering, etc.), which may damage the sensor performance.
- Avoid using thinner, alcohol or other organic solvents when cleaning.

Safety Warning

- Do not use in an environment with flammable, explosive or corrosive gases.
- Do not use in oil or chemical environments.
- Do not use in a high humidity environment.
- Do not use in direct sunlight
- Do not use in other environmental conditions that exceed the rated value.
- Do not disassemble, repair or modify this product without authorization.

Scrap Treatment

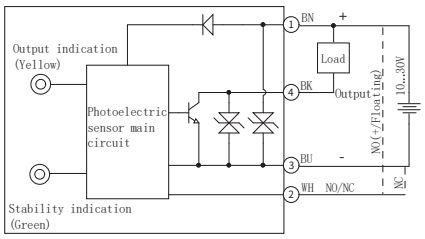
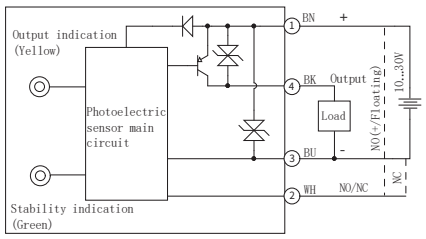
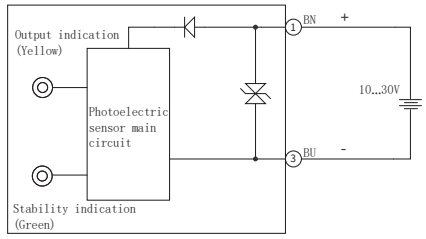
- When the product is scrapped, please dispose of it as industrial waste.

■ Technical specifications

Detection type		Through beam		Polarized reflection	Transparent object detection	Diffuse reflection				Background suppression
Model	NPN cable	Emitter PSS-TM20D	Receiver PSS-TM20DNB	PSS-PM3DNBR	PSS-GM2DNBR	PSS-BC10DNB	PSS-BC40DNB	PSS-BC40DNBR	PSS-BC100DNB	PSS-YC10DNBR
	NPN connector	Emitter PSS-TM20D-E2	Receiver PSS-TM20DNB-E2	PSS-PM3DNBR-E2	PSS-GM2DNBR-E2	PSS-BC10DNB-E2	PSS-BC40DNB-E2	PSS-BC40DNBR-E2	PSS-BC100DNB-E2	PSS-YC10DNBR-E2
	PNP cable	Emitter PSS-TM20D	Receiver PSS-TM20DPB	PSS-PM3DPBR	PSS-GM2DPBR	PSS-BC10DPB	PSS-BC40DPB	PSS-BC40DPBR	PSS-BC100DPB	PSS-YC10DPBR
	PNP connector	Emitter PSS-TM20D-E2	Receiver PSS-TM20DPB-E2	PSS-PM3DPBR-E2	PSS-GM2DPBR-E2	PSS-BC10DPB-E2	PSS-BC40DPB-E2	PSS-BC40DPBR-E2	PSS-BC100DPB-E2	PSS-YC10DPBR-E2
	NPN cable	Emitter PSM-TM20D	Receiver PSM-TM20DNB	PSM-PM3DNBR	PSM-GM2DNBR	PSM-BC10DNB	PSM-BC40DNB	PSM-BC40DNBR	PSM-BC100DNB	PSM-YC10DNBR
	NPN connector	Emitter PSM-TM20D-E2	Receiver PSM-TM20DNB-E2	PSM-PM3DNBR-E2	PSM-GM2DNBR-E2	PSM-BC10DNB-E2	PSM-BC40DNB-E2	PSM-BC40DNBR-E2	PSM-BC100DNB-E2	PSM-YC10DNBR-E2
	PNP cable	Emitter PSM-TM20D	Receiver PSM-TM20DPB	PSM-PM3DPBR	PSM-GM2DPBR	PSM-BC10DPB	PSM-BC40DPB	PSM-BC40DPBR	PSM-BC100DPB	PSM-YC10DPBR
	PNP connector			PSM-PM3DPBR-E2	PSM-GM2DPBR-E2	PSM-BC10DPB-E2	PSM-BC40DPB-E2	PSM-BC40DPBR-E2	PSM-BC100DPB-E2	PSM-YC10DPBR-E2
Sensing distance		20m		3m*	2m*	10cm	40cm	40cm	100cm	10cm
Spot diameter		/		/	45*45mm@100cm	/	/	15*15mm@40cm	/	8*8mm@10cm
Light source		Infrared (850nm)		Red light (660nm)		Infrared (940nm)	Infrared (940nm)	Red light (660nm)	Infrared (940nm)	Red light (660nm)
Hysteresis range		/		/		3...20%				≤5%
Direction angle		>4°		<2.5°		/				/
Indicator		Green LED:Power, stable signal								
		Yellow LED:Output, overload or short circuit								
NO/NC adjustment		Lead type: white wire connected to positive or floating, NO mode; white wire connected to negative, NC mode;								
		Plug-in type: 2 feet connected to positive or floating, NO mode; 2 feet connected to negative, NC mode;								
Supply voltage		10...30V DC								
Consumption current		Emitter: ≤20mA; Receiver: ≤20mA		≤20mA						
Response time		≤1ms		≤0.5ms						
Voltage drop		≤1V								≤1.8V
Load current		≤200mA								≤100mA
Distance adjustment		Single-turn potentiometer								No knob
Ambient temperature		-25℃...55℃								-20℃...55℃
Circuit protection		Short circuit, Reverse polarity, Overload, Zener protection								
Anti-ambient light		Anti-ambient light interference≥10,000lux; Anti-incandescent light interference≥3,000lux								
Storage temperature		-25℃...70℃								
Protection degree		IP67								
Certification		CE								
Material		PSS: PC+ABS; PSM: Nickel copper alloy								
Optical element		PMMA								
Accessories		Instruction manual, M18 nut (PSS is plastic, PSM is Nickel copper alloy)								

*This data is the testing result of TD-09 reflector, which is the standard reflector of Lanbao PSS / PSM polarized reflective sensor.

■ Wiring diagram

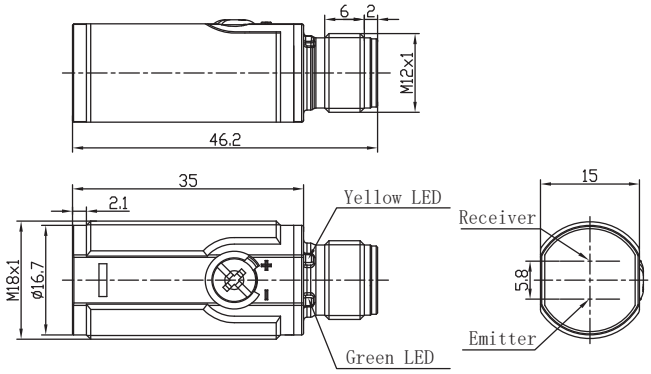
Diffuse reflection, Polarized reflection, Background suppression, Transparent object detection , Through beam Receiver-NPN Output	Diffuse reflection, Polarized reflection, Background suppression, Transparent object detection , Through beam Receiver-PNP Output	Through beam Emitter
		

■Terminal wiring diagram

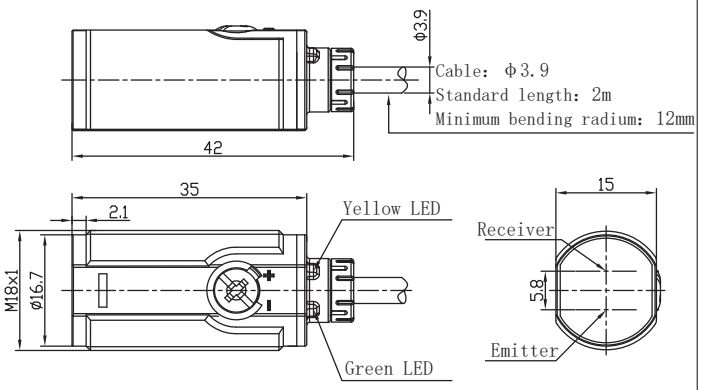
Through beam Emitter	Diffuse reflection, Polarized reflection, Transparent object detection , Background suppression, Through beam Receiver
 1: + 3: −	 1: + 4: OUT 3: − 2: -NC/+ or Floating NO
BN: + BU: −	BN: + BU: − BK: OUT WH: -NC/+ or Floating NO

■ Dimensions

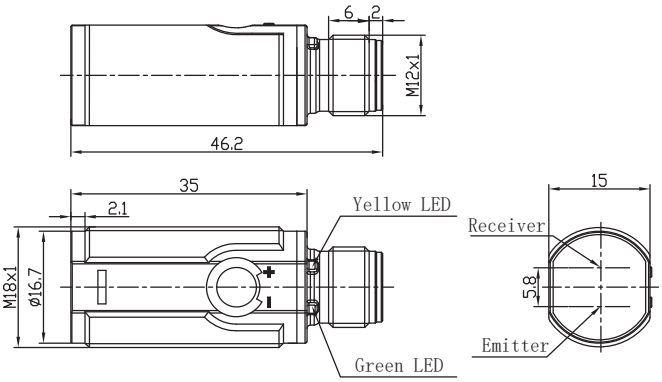
PSS-Connector



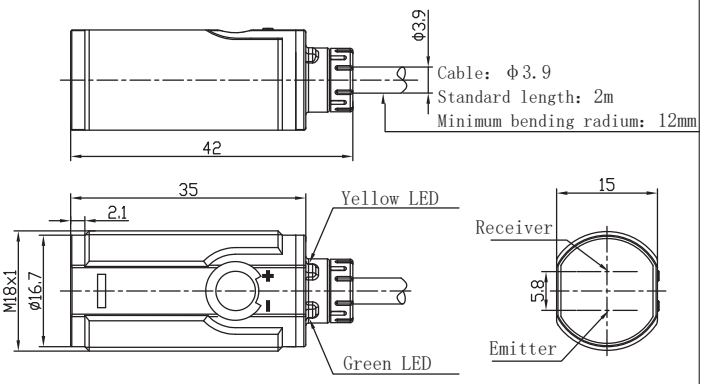
PSS-Cable



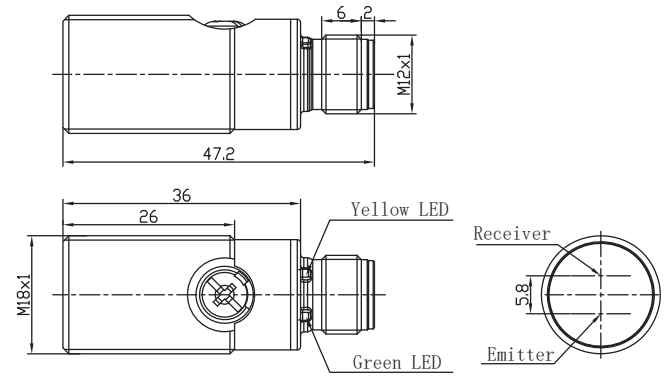
PSS (Background suppression) -Connector



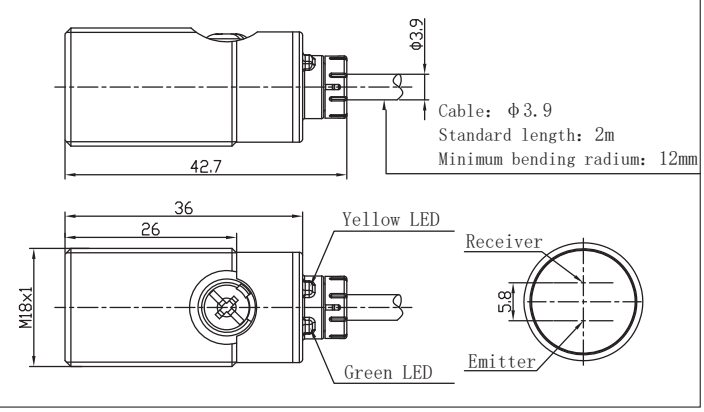
PSS (Background suppression) -Cable



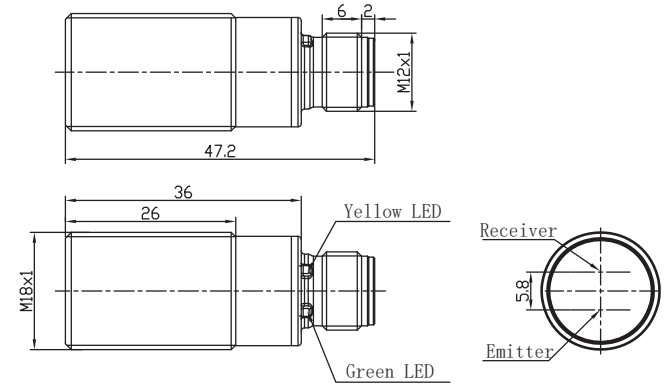
PSM-Connector



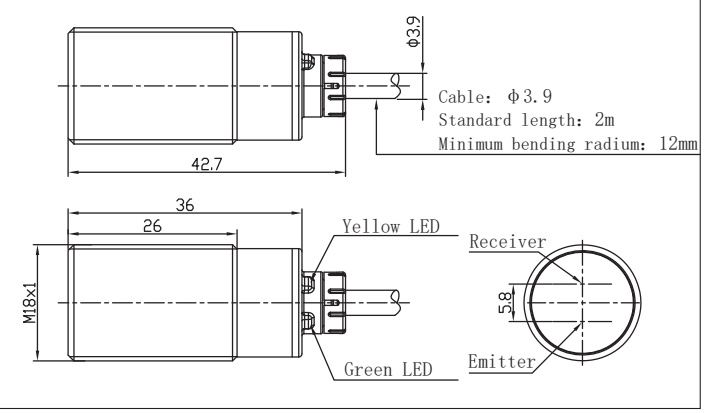
PSM-Cable



PSM (Background suppression) -Connector



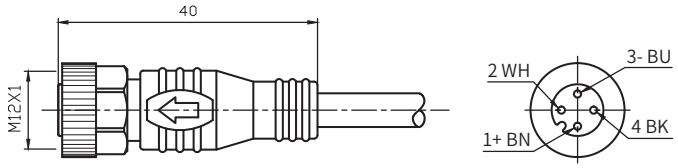
PSM (Background suppression) -Cable



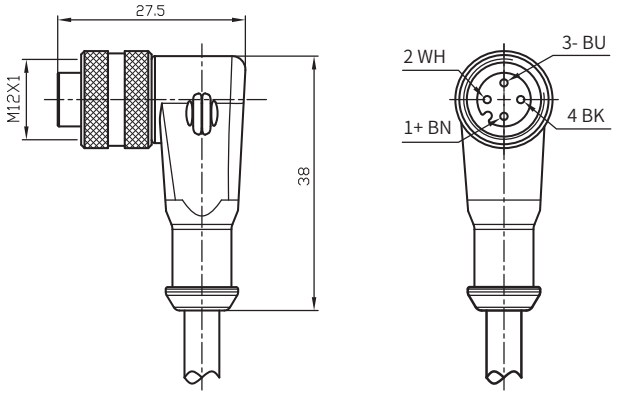
■ Accessory Dimensions

The following accessories are required to be purchased separately except that PSS / PSM series have standard M18 nuts and polarized reflective sensors have standard TD-09 reflectors.

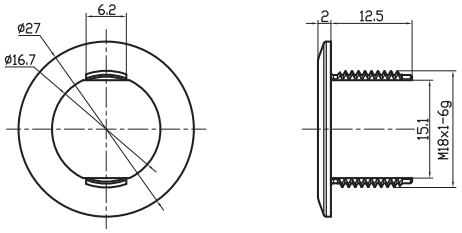
M12 Connector QE12-N4F2



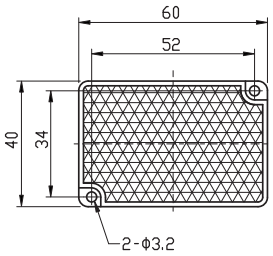
M12 Connector QE12-N4G2



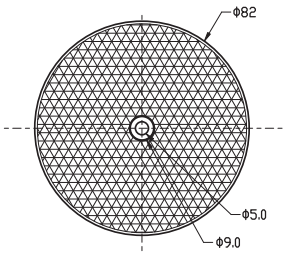
Mounting buckle ZJP-10



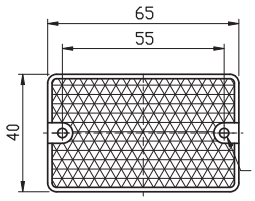
Reflector TD-09



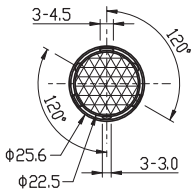
Reflector TD-05



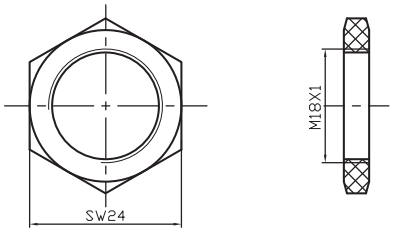
Reflector TD-02



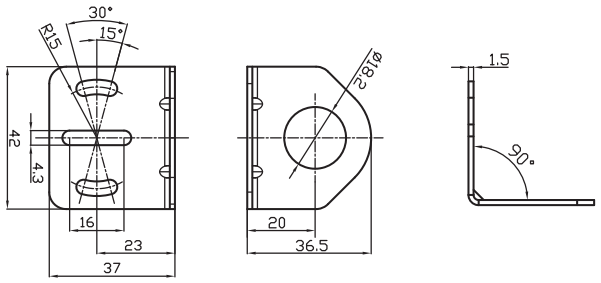
Reflector STD-06



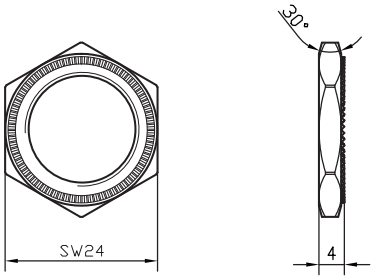
M18 Nut-PSS



Mounting Bracket ZJP-9



M18 Nut-PSM



■ Mounting