

OUTLINE

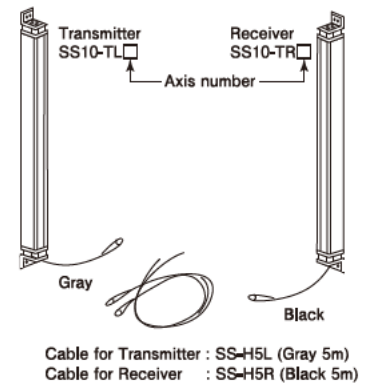
- This sensor is a through beam type light curtain sensor with a 10mm optical pitch and detects opaque objects 17mm or more in diameter.
- This product can't be used as a safety sensor to protect human body.
- This product has no function to prevent disasters, accidents, death or injuries and doesn't comply with any standard or regulation for industrial safety.
- Takex PSG series is a safety sensor for power press machine certified upon Japanese standard.

SPECIFICATIONS

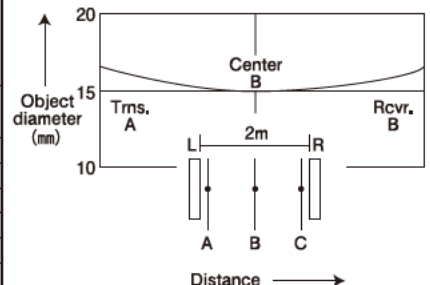


Model	NPN Output	SS10-T16	SS10-T24	SS10-T32	SS10-T48	SS10-T64	SS10-T80	SS10-T96
	PNP Output	SS10-T16-PN	SS10-T24-PN	SS10-T32-PN	SS10-T48-PN	SS10-T64-PN	SS10-T80-PN	SS10-T96-PN
Detection method	Through beam							
Detecting distance	2m or less							
Detection object	φ 17mm (Min.) Opaque object (Refer to the chart below right)							
No. of optical axis		16	24	32	48	64	80	96
Detecting width		150mm	230mm	310mm	470mm	630mm	790mm	950mm
Optical axis interval	10mm							
Power supply	12 to 24 VDC ±10%, Ripple 10% or less							
Current consumption		90mA or less	103mA or less	116mA or less	142mA or less	168mA or less	194mA or less	220mA or less
Output mode	NPN Output	NPN Open collector Current Output : Sink current 100mA or less, 30 VDC or less						
	PNP Output	PNP Open collector Current Output : Source current 100mA or less, 30 VDC or less						
Operating mode	A/O mode selectable, Mode A : The output transistor turns on when beams of all optical axes are received. Deactivated when beam of any optical axis is blocked. Mode O : The output transistor turns on when beams of any optical axis is received. Deactivated when beam of all optical axes are blocked.							
Response time	30ms or less							
Light source	Infrared LED (Wave length 860nm)							
Sensing device	Photo-Transistor							
LED Indicator	Transmitter : Power indicator (Green LED), M/S indicator (Red LED) Receiver : Operation indicator (Red LED), Stability indicator (Green LED)							
Switch	Trns. : Built-in M/S operation selectable switch (M side---Master operation, S side---Slave operation)---Lid on the back side Rcvr. : Built-in A/O operation selectable switch (A side---ON operation when all light axis lights on, O side ON operation when one light axis lights on)---Lid on the back side							
Incidental Function	Built-in Output short circuit protection, discontinuity of transfer line protection and function preventing interference when installing in parallel.							
Material	Case : Aluminum, Front cover and lends : Acrylic							
Connection	Connector 0.5mm ² ×4, Outer dia.φ6.8, 0.2m length, with 4 pins in the connector							
Weight	Transmitter	Approx 250g	Approx 300g	Approx 350g	Approx 450g	Approx 550g	Approx 650g	Approx 750g
	Receiver	Approx 250g	Approx 300g	Approx 350g	Approx 450g	Approx 550g	Approx 650g	Approx 750g
Ambient light	9,000 lx or less							
Ambient temperature	-10 to +55℃ (non-freezing)							
Ambient humidity	35 to 85%RH (non-condensing)							
Protective structure	I P 66 (IEC)							
Vibration	10 to 55Hz, 1.5mm Double amplitude 2Hr., 3 Directions							

MODEL DESCRIPTION

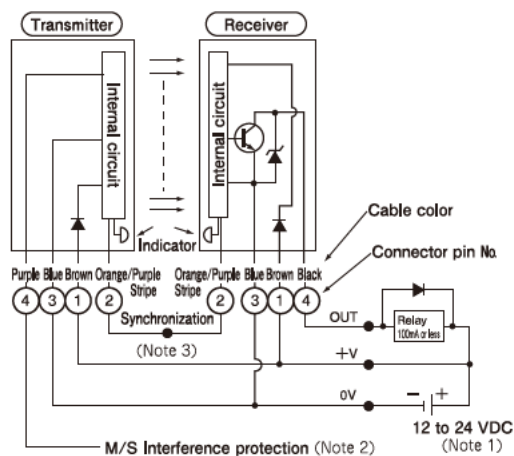


MINIMUM OBJECT DIAMETER

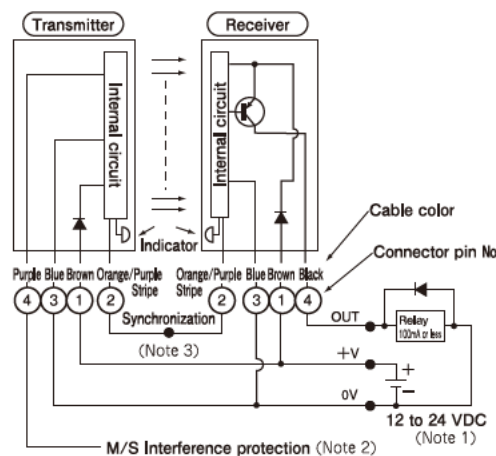


WIRING

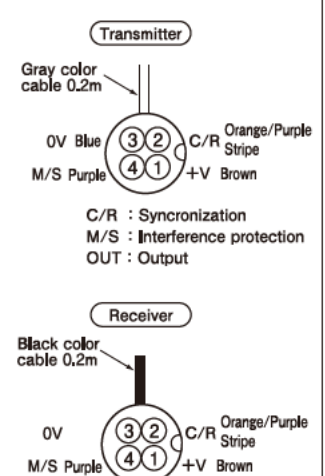
● NPN output



● PNP output



● Connector Pin. No.



- If a load short circuit or overload occurs, the output turns off. Check the load before restoring the power.
- Insulate the purple cable (Master/Slave for interference prevention) when the Interference Prevention Function is not used.

Note 1 : When using separate power units for the transmitter and the receiver, common the ground (0V) between the power units.
Note 2 : Insulate the purple cable (Master/Slave for interference prevention) when the Interference Prevention Function is not used.
Note 3 : Do not connect the orange/purple stripe cable (Synchronization) or purple cable with 0V.

OPERATION MODE SWITCH

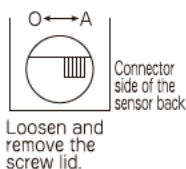
The Operation Mode Switch is located under the screw lid on the bottom back of the sensor unit.

◆ Mode A is a factory setting.

Mode A : The output transistor turns on when beams of all optical axes are received. Deactivated when beam of any optical axis is blocked.

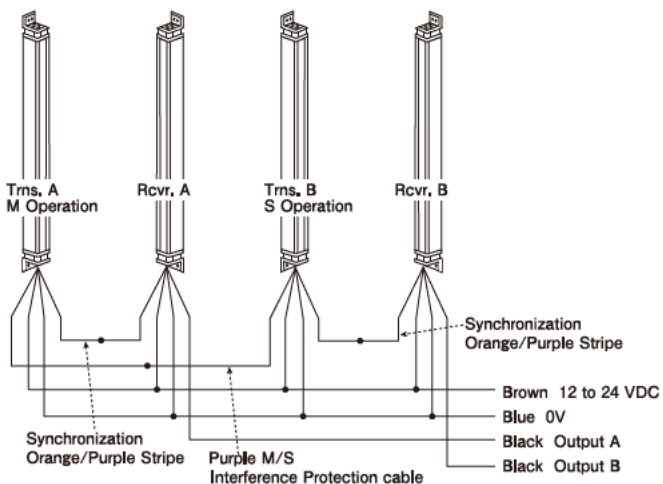
Mode O : The output transistor turns on when beams of any optical axis is received. Deactivated when beam of all optical axes are blocked.

Operation Mode Switch

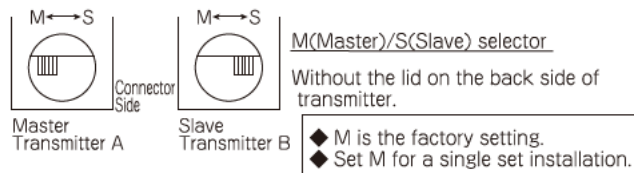


MUTUAL INTERFERENCE PREVENTION

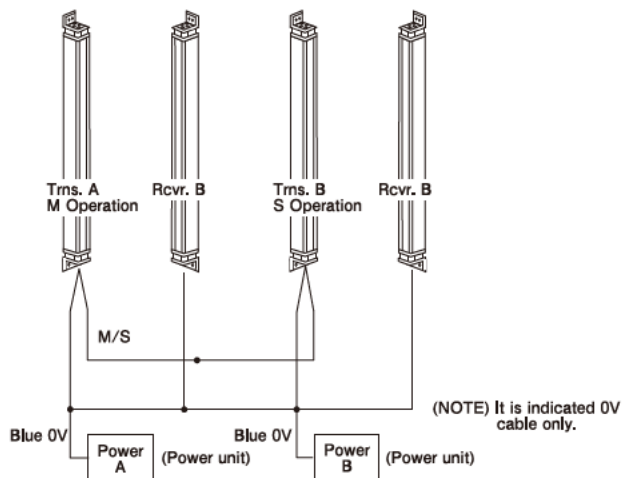
- See below for the connection when 2 sets are installed adjacently.
 - Connect the purple cables (Master/Slave for Interference Prevention) of the transmitter A and B.
 - Connect the blue cables (0V) of the all units (Transmitters A and B, and Receivers A and B) to the ground.



- Loosen and remove the screw lid for M/S selector and set one (here the transmitter A) for M (Master) and the other (the transmitter B) for S (Slave).

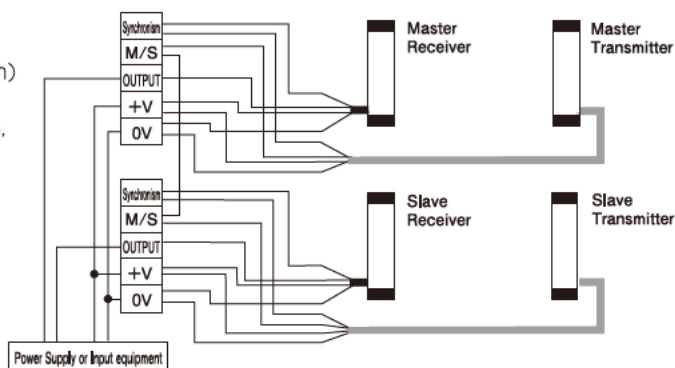


- When using separate power units for the transmitter and the receiver, connect ground terminals of the power units and the blue cables (0V).



- Confirm the M(Master)/S(Slave) indicator on the transmitter after supplying the power.
 - Transmitter A (Master) : M/S indicator turns on.
 - Transmitter B (Slave) : M/S indicator turns off.
- Notice of wiring

0V is commonly used for the Synchronization and the Mutual Interference Prevention. Malfunction like chattering may occur when the length of 0V cable and that of Synchronization and Mutual Interference Prevention cables are extremely different.



- ◆ Refer to [Cable Extension](#) for the cable length.
- ◆ The Synchronization cable should connect a pair of the transmitter and the receiver. Do not connect the Synchronization cables of a different pair. (Here do not connect between sensor A and sensor B.)
- ◆ Insulate the purple cable (Master/Slave for interference prevention) when the Interference Prevention Function is not used.

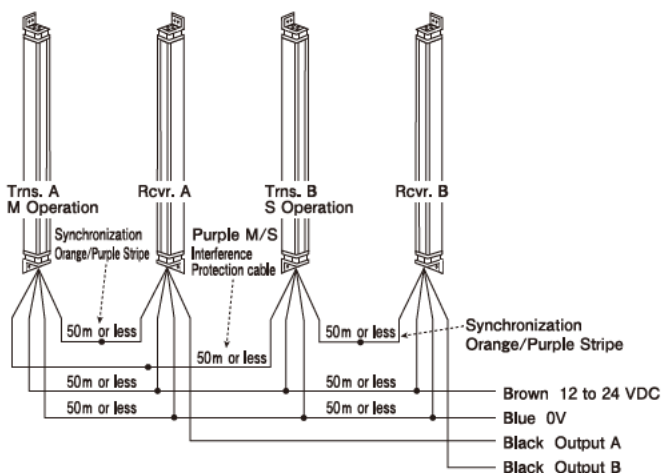
CABLE EXTENSION

When extending the wire, use 0.5mm² cable or more. Each cable should be no longer than 50m.

- Synchronization cable (orange/purple stripe)

The total length of the cable between the transmitter and the receiver should be 50m or less.
- M/S Mutual Interference Prevention cable (purple)

The total length of the cable between the two transmitters should be 50m or less.



INSTALLATION AND ALIGNMENT


This sensor has a bracket providing four different mounting positions.

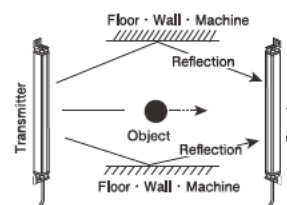
The bracket is fixed by 2 screws on the both ends of the sensor.

Loosen the screws and re-fit the bracket to change the position.

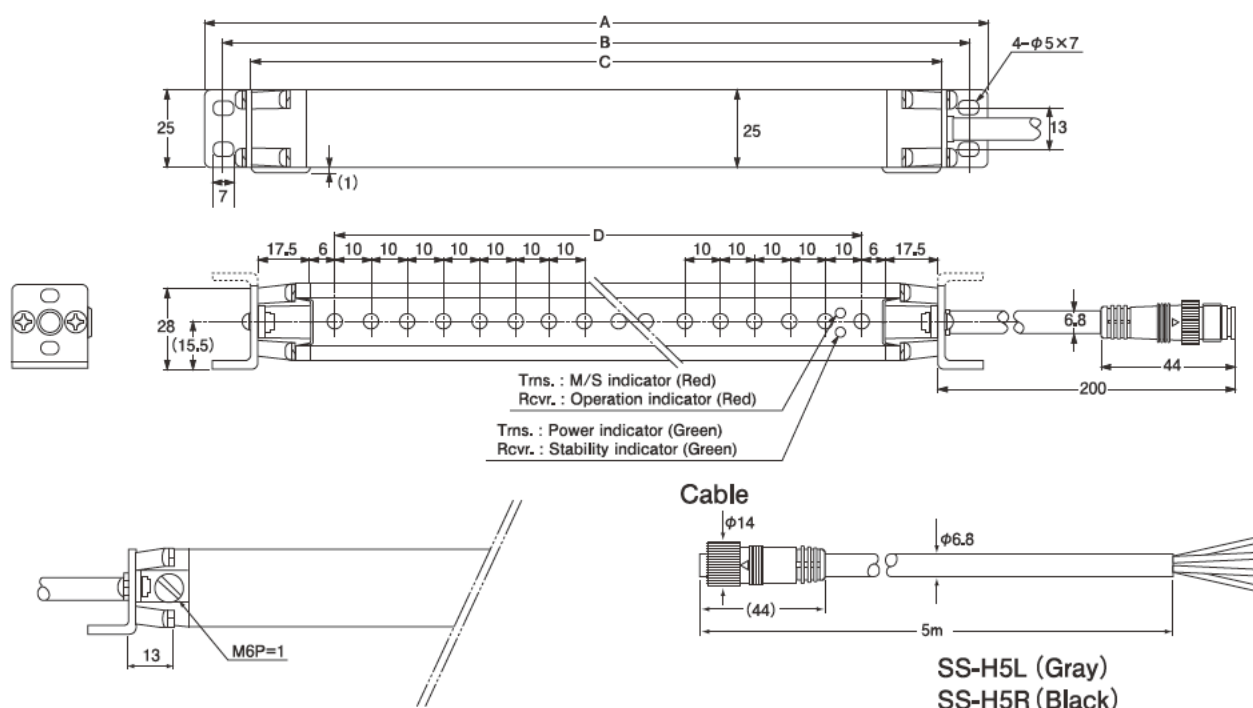
Tighten the screws with a torque of 0.8N·m or less.

1. Align the cable outlet of the transmitter and the receiver in the same direction.
2. Install the transmitter and the receiver face to face.
3. Check the wiring connections.
4. Turn on the power and confirm the Power Indicator on the transmitter turns on.
5. Swing the receiver right and left and fix at the center of the direction where the Stability Indicator of the receiver turns on.

6. Move up and down the receiver and fix at the center of the range where the Stability Indicator turns on.
7. Block the light beams and confirm the output is issued correctly. If there is a reflecting structure such as a wall, floor or machine close to the detecting range of the sensor, light beam may go around the detection object by reflection and the whole beams may not be blocked. Carefully check the operation.
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DIMENSIONS (in mm)



Indicator operation

	Appellation	Color	Contents
Transmitter	Power Indicator	Green	Turns on when switching on power supply.
	M/S Indicator	Red	Turns on when operating as a Master. Turns off when operating as a Slave.
Receiver	Stability Indicator	Green	Turns on when the received light quantity is higher than the operation level. (120%)
	Operation Indicator	Red	Turns on when the transistor outputs. A mode : The transistor outputs when beams of all axes are received. O mode : The transistor outputs when beams of any optical axis is received.

Model selection

MODEL		A	B	C	D	optical axis
NPN output	PNP output					
SS10-T16	SS10-T16-PN	227	215	201	150	16
SS10-T24	SS10-T24-PN	307	295	281	230	24
SS10-T32	SS10-T32-PN	387	375	361	310	32
SS10-T48	SS10-T48-PN	547	535	521	470	48
SS10-T64	SS10-T64-PN	707	695	681	630	64
SS10-T80	SS10-T80-PN	867	855	841	790	80
SS10-T96	SS10-T96-PN	1027	1015	1001	950	96

NOTE

- Use a shielded cable to connect the Synchronization cables (orange/purple stripe) when using a same conduit for wiring of the Master and Slave units.
- Be sure to route the sensor wires separate from any power transmission or high voltage line. Use a same conduit or duct with high-voltage or power lines will cause malfunction or damage by induction.
- When using a DC power unit with an insulated transformer or a switching regulator, be sure to ground the frame ground (FG) terminal.
- Do not apply strong force to turn the switches.
- Do not use the sensor where water is splashing constantly, or under high humidity or dusty circumstances.

- The guarantee period of this product is one year after the delivery.
- If any defect is found during the guarantee period, Takenaka will repair or replace the defective product.
- This product is an industrial sensor which issues an output upon detecting an object. It does not have any function to prevent accidents, death or injuries.
- Takenaka will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including lightning surge.