

OUTLINE

- SSP-T200 is a bin-picking sensor designed to increase working efficiency by reducing incorrect picking. The sensor lights up a working-instruction indicator (Job indicator) upon obtaining a signal from a control system to instruct a working staff to pick up a right component.
- The sensor sends back a signal to the control system when the right component is picked up and then the control system generates a signal to the next bin. SSP-T200 is equipped with a Fault indicator (red LED) to alert an incorrect picking.

SPECIFICATIONS

Models	Attached cable	SSP-T205	SSP-T210	SSP-T213	SSP-T216
	Connector (-PJ)	SSP-T205-PJ	SSP-T210-PJ	SSP-T213-PJ	SSP-T216-PJ
	Connector (-J)	SSP-T205-J	SSP-T210-J	SSP-T213-J	SSP-T216-J
Detection		Through-beam			
Range		2m (Max.)			
Detection object		φ35mm (Min.) Opaque object			
No. of optical axis		5	10	13	16
Detection width		100mm	225mm	300mm	375mm
Optical axis pitch		25mm			
Power supply		12 to 24VDC ±10%, Ripple 10% (Max.)			
Current consumption (Max.)		130mA	140mA	150mA	155mA
Output mode		NPN/PNP output selectable			
		Rating : Current 50mA (30VDC) Max. Residual voltage 2V (Max.)			
Operation mode		Light-on/Dark-on selectable			
Job indicator input		Non-contact or contact in put			
Response time	Standard	Light on : 35ms	Light on : 68ms	Light on : 70ms	Light on : 94ms
		Dark on : 25ms	Dark on : 42ms	Dark on : 42ms	Dark on : 58ms
	Interference	Light on : 45ms	Light on : 74ms	Light on : 88ms	Light on : 116ms
	Protection	Dark on : 28ms	Dark on : 52ms	Dark on : 54ms	Dark on : 72ms
Light source		Infrared LED, Wave-length 880nm			
Indicator	Transmitter	Power indicator (Green LED) / Job indicator (Green LED)			
	Receiver	Stability indicator (Green LED) / Operation indicator (Orange LED) Job indicator (Green LED) / Fault indicator (Red LED)			
Job indicator		Lights/Flickering selectable/Lighting speed switch (Fast/Slow)			
Short circuit protection		Built-in			
Interference ptotection		Built-in (within 2 sets)			
Material		Enclosure : Aluminum, Lens : Polycarbonate, End Plate : PBT			
Wiring	Attached cable	Flying lead (Outer dia φ4.1) 2m length			
		Transmitter : 0.2mm ² ×3 cores (Gray)			
		Receiver : 0.2mm ² ×4 cores (Black)			
	Connector (-PJ)	M12 Connector (Pigtail type) 0.3m			
		Transmitter : Gray			
		Receiver : Black			
	Connector (-J)	M12 Connector (Pigtail type) 0.3m			
		Transmitter : Gray			
Receiver : Black					
Weight Max.	Attached cable	Transmitter 105g Receiver 110g	Transmitter 160g Receiver 170g	Transmitter 195g Receiver 205g	Transmitter 225g Receiver 240g
	Connector (-PJ)	Transmitter 80g Receiver 95g	Transmitter 135g Receiver 145g	Transmitter 170g Receiver 180g	Transmitter 200g Receiver 215g
	Connector (-J)	Transmitter 115g Receiver 120g	Transmitter 170g Receiver 180g	Transmitter 205g Receiver 215g	Transmitter 235g Receiver 250g
Incidental function		Automatic sensitivity correction function			

ENVIRONMENTAL CHARACTERISTICS

Ambient light
10,000 lx (Max.)

Operating temperature
-10°C to +55°C
(Storage: -25°C to +70°C)

Operating humidity
35 to 85 %RH

Enclosure protection
IP 62

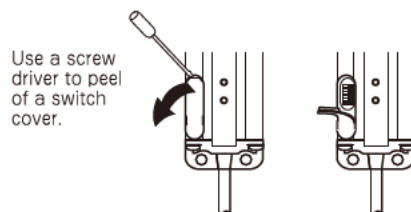
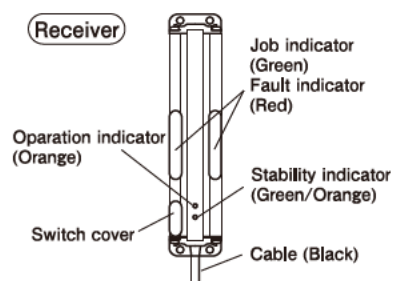
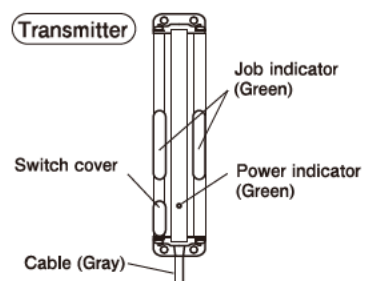
Vibration resistance
10Hz to 55Hz, 1.5mm double amplitude,
2 hours, X, Y and Z directions

Shock resistance
500m/s 3 times X, Y and Z directions

Dielectric strength
1,000VAC for 1 minute

Insulation resistance
Min. 20MΩ (at 500VDC)

DESCRIPTION



Use a screw driver to peel of a switch cover.

DIP SWITCH

Dip Switch operation should be done while the power is off.

1. Job indicator mode

A continuous lighting or blinking can be selected.

Light : Continuous lighting

Flash : Blinking

2. Job indicator speed control for flashing

The blinking speed can be selected for the Flash mode.

3. Operation mode

Dark-ON or Light-ON can be selected.

4. Fault indicator

Select the Fault indicator operation.

5. NPN/PNP selector

Select the transistor mode for the job indicator input and output of the receiver.

6. Frequency

Two frequencies are selectable to eliminate crosstalk.

● Dip switch

Transmitter

1	Job indicator mode	Flash	1	Light
2	Job indicator speed control for flashing	Fast	2	Slow
3	No function		3	
4	No function		4	
5	NPN/PNP selector	PNP	5	NPN
6	Frequency	A	6	B

Receiver

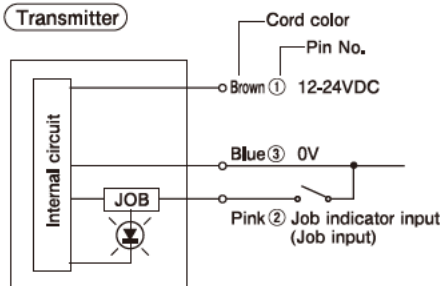
1	Job indicator mode	Flash	1	Light
2	Job indicator speed control for flashing	Fast	2	Slow
3	Operation mode	Dark on	3	Light on
4	Fault indicator	Fault on	4	Fault off
5	NPN/PNP selector	PNP	5	NPN
6	Frequency	A	6	B

INPUT/OUTPUT CIRCUIT AND CONNECTION

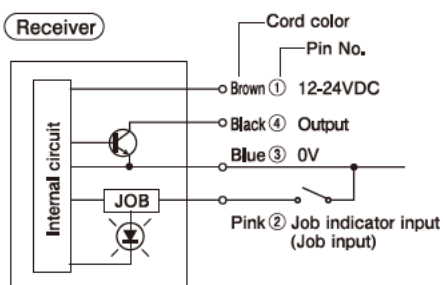
Use the DIP switch to select PNP or NPN for the Job indicator input and the control output.

NPN mode

Transmitter

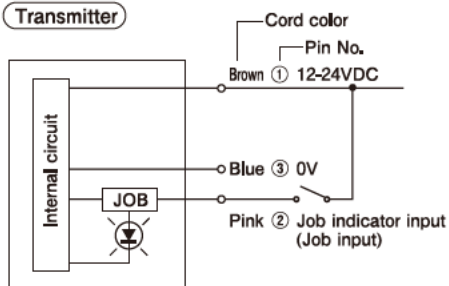


Receiver

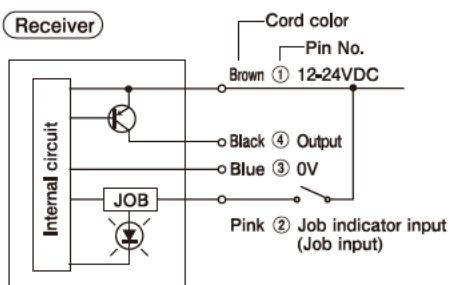


PNP mode

Transmitter



Receiver



Connector (-PJ)

Connector (-J)

Pin arrangement

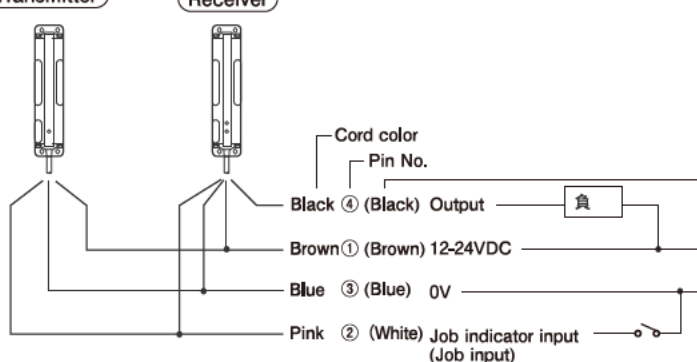


● Connection

(Example of NPN mode)

Transmitter

Receiver



● Cord extension

To extend the cord, use wires of at least 0.5mm² and limit the length up to 100m for the transmitter and the receiver respectively.

Colors in parentheses show lead colors for use with the optional cable with connector.

(Models : FAC-D4R2S, FAC-D4R2L
: FAC-D4R5S, FAC-D4R5L)

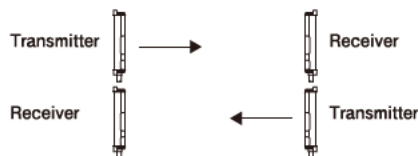
INSTALLATION

1. Prevention of crosstalk

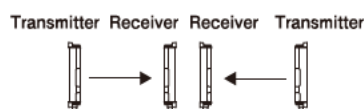
When you use two or more sensors in a narrow place, please take care about interference. The receiver may not operate when it receives light beams from two or more transmitters.

- Set up the transmitter and the receiver as below.

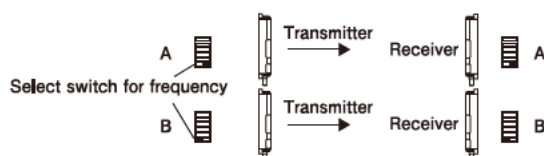
When crosstalk is assumed in the vertical direction.



When crosstalk is assumed from behind.

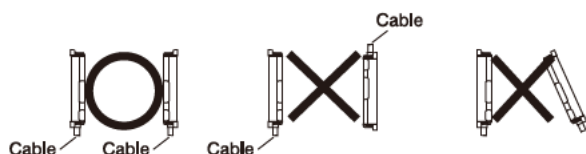


- Use different frequency.



2. Installation

- Securely fix the transmitter and the receiver facing each other directly so as not to shift the position by vibration.
- Install the sensor aligning the cable outlet of the transmitter and the receiver in the same direction. They cannot be used if the orientation differs.
- Use M4 screws for mounting. The tightening torque should be 0.8N·m or less.



- When there is any reflective object (wall, floor or equipment) within the directional field between the transmitter and the receiver, the sensor may not detect an object due to unwanted light reflection.

3. Optical axis alignment

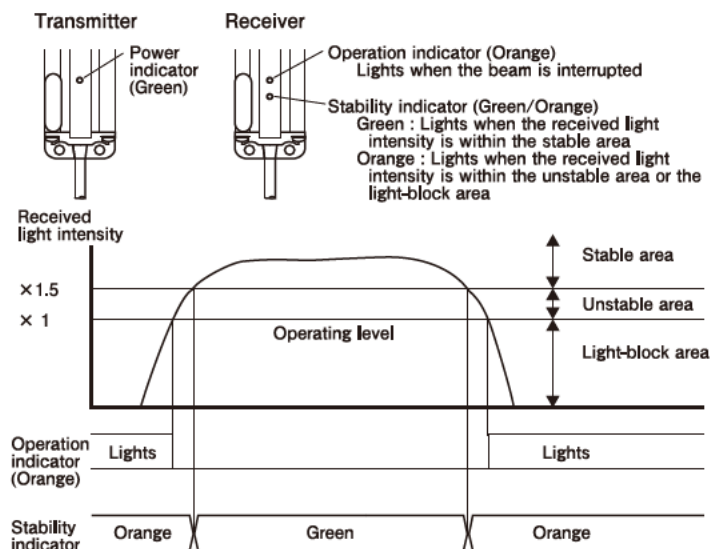
- ① Check the connection then power on, and make sure the power indicator (green) of the transmitter and the stability indicator (green or orange) of the receiver turn on.
 - ② By swinging the transmitter left and right, find the range where the stability indicator turns on green and direct the sensor in the center of the range.
 - ③ Adjust the vertical position in the same way.
 - ④ Check the output by blocking the optical axis.
- *) The fault indicator turns on when a light axis is blocked during optical axis alignment when Fault on mode is selected.

4. Automatic sensitivity control

The automatic sensitivity control function is enabled when the power is turned on after the optical axis alignment. The sensitivity will be adjusted at the optimal level for the set distance and condition. The sensitivity will be automatically adjusted each time when the lens is soiled with dust or dirt or when the lens is cleaned.

OPERATING INDICATOR

● Operating indicator



● Job indicator & Fault indicator

Operation	Detection	Detection
Job indicator Input	ON	
Job indicator (Green)	Lights	
Fault indicator (Red)		Lights

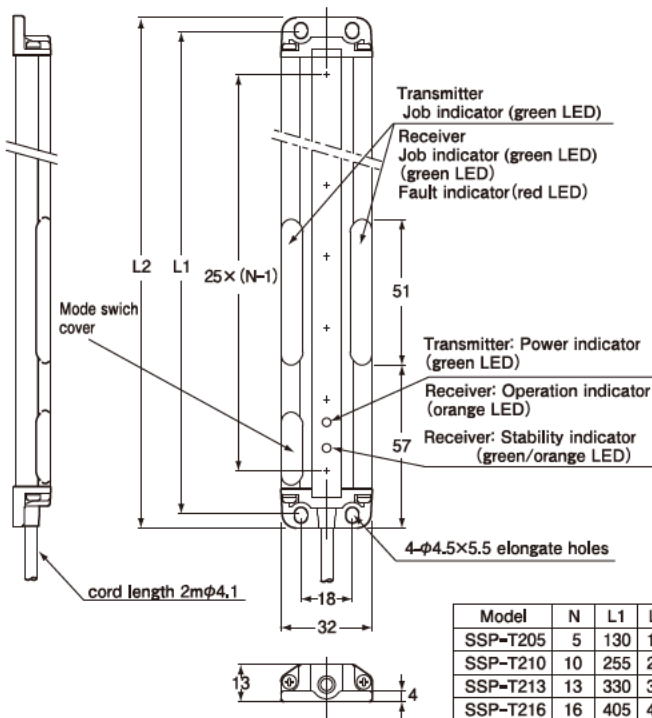
NOTES

- Clean the lens by a soft and dry cloth periodically. A stain or dirt stuck on the lens deteriorates the performance. Do not use organic solvent including alcohol and thinner.
- Use a power supply within the rated voltage and current in the specification.
- Avoid turning the power on and off consecutively.
- The sensor starts operation 0.5 sec after power is supplied. Always power on the sensor first.
- When extending the cables, use conductors of at least 0.5mm² cross-sectional area and the length should not exceed 100 m.
- Be sure to route the sensor cables separate from any power transmission or high voltage line, or else use shielded cables. Using the same conduit or duct as high voltage or power lines will cause malfunctions or damage because of electromagnetic 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 use the sensor in a steam or dust atmosphere or where water or oil is splashing.
- Limit the current of the power supply to 2A.

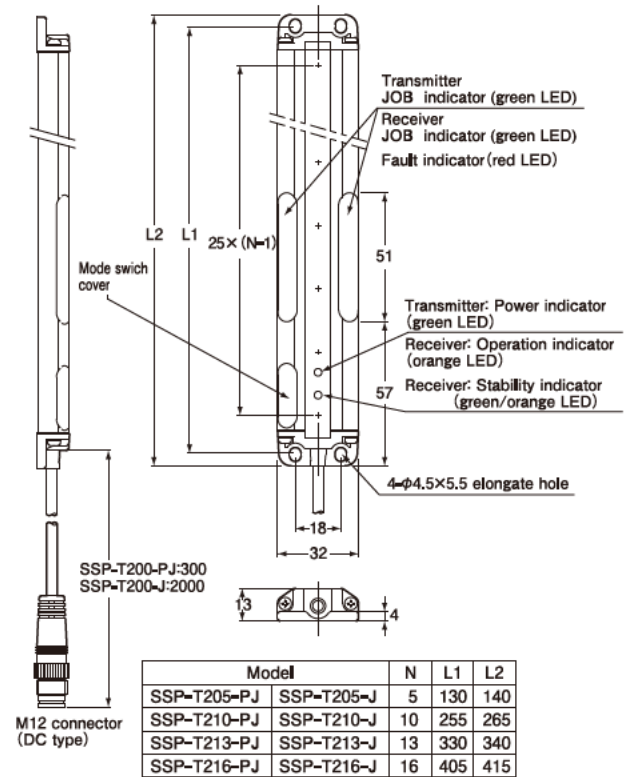
	SET MODELS	TRANSMITTER	RECEIVER
ATTACHED CABLE	SSP-T205	SSP-TL205	SSP-TR205
	SSP-T210	SSP-TL210	SSP-TR210
	SSP-T213	SSP-TL213	SSP-TR213
	SSP-T216	SSP-TL216	SSP-TR216
CONNECTOR (-PJ)	SSP-T205-PJ	SSP-TL205-PJ	SSP-TR205-PJ
	SSP-T210-PJ	SSP-TL210-PJ	SSP-TR210-PJ
	SSP-T213-PJ	SSP-TL213-PJ	SSP-TR213-PJ
	SSP-T216-PJ	SSP-TL216-PJ	SSP-TR216-PJ
CONNECTOR (-J)	SSP-T205-J	SSP-TL205-J	SSP-TR205-J
	SSP-T210-J	SSP-TL210-J	SSP-TR210-J
	SSP-T213-J	SSP-TL213-J	SSP-TR213-J
	SSP-T216-J	SSP-TL216-J	SSP-TR216-J

DIMENSIONS (unit : mm)

SSP-T200 series



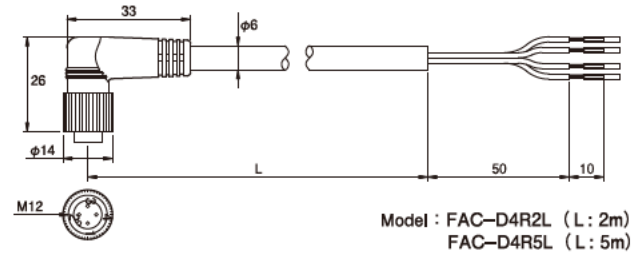
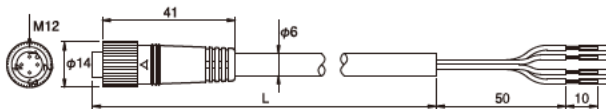
SSP-T200-PJ series, SSP-T200-J series



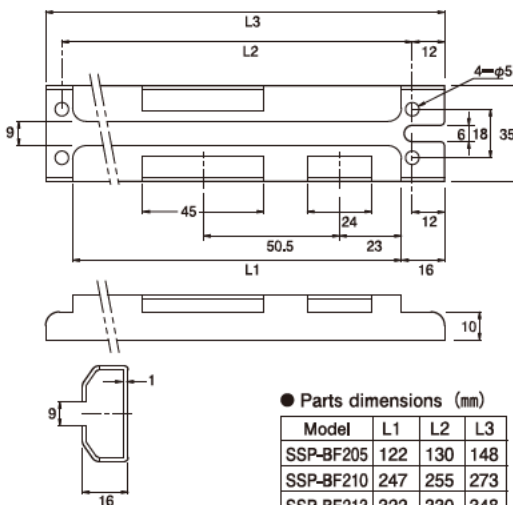
OPTION (unit : mm)

● Cable with connector

Model : FAC-D4R2S (L : 2m)
FAC-D4R5S (L : 5m)



● Protective Cover Material : SUS



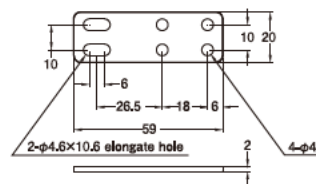
● Parts dimensions (mm)

Model	L1	L2	L3
SSP-BF205	122	130	148
SSP-BF210	247	255	273
SSP-BF213	322	330	348
SSP-BF216	397	405	423

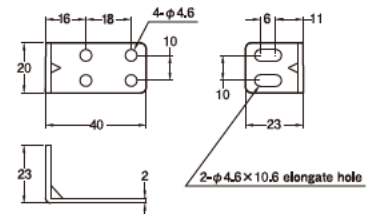
● OPTIONAL BLACKETS

Mounting bracket is available as an option.

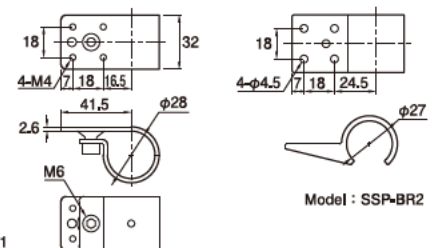
Model : SSP-B1 · Set of 2 · Includes
4 M4(length 12mm)
screws with washers
4 hex nuts



Model : SSP-B2 · Set of 2 · Includes
4 M4(length 12mm)
screws with washers
4 hex nuts



● Exclusive attachment (Made in Yazaki Irector)



- 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.