

SSP-T200 series

Through beam for Bin-Picking System

Light curtain sensors



- Suitable to use as part of a bin-picking system to avoid mispicks.
- Thinness of 13 mm achieved with rigid metal case
- Large job indicator (job light)
- Faulty job indicator (fault light) is provided
- 4 types are available for different sizes of parts bins
- Requiring no synchronization line
Asynchronous method employed, eliminating need for synchronization line

Type

Detection method	Detecting distance	Detecting width	Set model No.	No. of light axes	Beam interval	Detecting object	Connection
 Through beam	2m	100mm	SSP-T205	5	25mm	Opaque φ 35mm or more	Attached cable
		225mm	SSP-T210	10			
		300mm	SSP-T213	13			
		375mm	SSP-T216	16			
		100mm	SSP-T205-PJ	5			Cable with connector
		225mm	SSP-T210-PJ	10			
		300mm	SSP-T213-PJ	13			
		375mm	SSP-T216-PJ	16			

Mounting brackets are separately available.

Optional Parts

Type	Model	Shape	Description
Mounting bracket	SSP-B1	Flat	Two pieces as one set (M4 x 12 SEMS screws with washers and nuts)
	SSP-B2	L-shape	Two sets are necessary; one set is for transmitter and the other for receiver.
Cable with connector	FAC-D4R2S	Straight	M12 outer diameter: 6mm Cable 0.2mm ² x 4 cores 2m (sheath: black)
	FAC-D4R2L	Angle	Two pieces are necessary; one is for transmitter and the other for receiver.
	FAC-D4R5S	Straight	M12 outer diameter: 6mm Cable 0.2mm ² x 4 cores 5m (sheath: black)
	FAC-D4R5L	Angle	Two pieces are necessary; one is for transmitter and the other for receiver.
Protective cover	SSP-BF213	One piece	
	SSP-BF216	Two pieces are necessary; one is for transmitter and the other for receiver.	
Mounting bracket	SSP-BR1	Two pieces as one set	
	SSP-BR2	Two sets are necessary; one set is for transmitter and the other for receiver.	

Rating/Performance/Specification

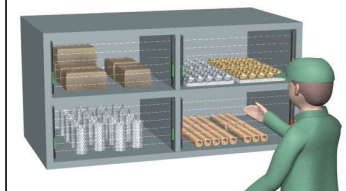
Model	Attached cable	SSP-T205	SSP-T210	SSP-T213	SSP-T216
	Cable with connector	SSP-T205-PJ	SSP-T210-PJ	SSP-T213-PJ	SSP-T216-PJ
Detection method		Through beam			
Detecting distance		2m			
Detection object		Opaque ϕ 35mm or more			
Number of beams		5	10	13	16
Detecting width		100mm	225mm	300mm	375mm
Beam interval		25mm			
Power supply		12-24VDC \pm 10% / Ripple 10% or less			
Current consumption		130mA or less	140mA or less	150mA or less	155mA or less
Output mode	Control output		Selectable between NPN output and PNP output with switch		
	Rating	NPN output	Sink current 50mA (30VDC) or less / Residual voltage: 2V or less		
		PNP output	Source current: 50mA (30VDC) or less / Residual voltage: 2V or less		
Operation mode		Light ON/Dark ON selectable (with switch)			
Frequency switching feature		Provided (for up to 2 units)			
Response time	Normal	Light reception: 35 ms or less	Light reception: 68 ms or less	Light reception: 70 ms or less	Light reception: 94 ms or less
		Light blocking: 25 ms or less	Light blocking: 42 ms or less	Light blocking: 42 ms or less	Light blocking: 58 ms or less
	With frequency switching feature enabled	Light reception: 45 ms or less	Light reception: 74 ms or less	Light reception: 88 ms or less	Light reception: 116 ms or less
		Light blocking: 28 ms or less	Light blocking: 52 ms or less	Light blocking: 54 ms or less	Light blocking: 72 ms or less
Job light input		Contact or non-contact input			
Light source		Infrared LED (wavelength : 880nm)			
Indicator		Transmitter: Power indicator (green LED) / Job indicator (green)			
		Receiver :Received light intensity indicator (green / orange LED) / Light blocking indicator (orange LED) Job indicator (green) / Fault indicator (red LED)			
Job indicator Fault indicator		Continuous/flashing illumination selectable with the switch Flashing speed: FAST/SLOW selectable with the switch			
Output short circuit protection		Provided			
Automatic sensitivity compensation		Provided			
Material		Case : Aluminum / caps at ends (mounting legs): PBT with glass fiber lens: Polycarbonate / switch cover: Polyester elastomer			
Connection	Attached cable	outer diameter: ϕ 4.1 mm, Transmitter: 0.2mm ² x 3 cores, 2m, (gray) Receiver: 0.2mm ² x 4 cores, 2m, (black)			
	Cable with connector	Cable with M12 4 pin connector pigtail, 0.3m transmitter: gray / receiver: black			
Weight	Attached cable	Transmitter: approx. 105g Receiver: approx.110g	Transmitter: approx. 160g Receiver: approx. 170g	Transmitter: approx. 195g Receiver: approx. 205g	Transmitter: approx. 225g Receiver: approx. 240g
	Cable with connector	Transmitter: approx. 80g Receiver: approx. 95g	Transmitter: approx. 135g Receiver: approx. 145g	Transmitter: approx. 170g Receiver: approx. 180g	Transmitter: approx. 200g Receiver: approx. 215g
Accessory		Screwdriver for switch operation mounting bracket is not separately available.			

Environmental Specification

Ambient light	10,000lx or less
Ambient temperature	-10 - +55°C (non-freezing)
Ambient humidity	35-85%RH (non-condensing)
Vibration	10 - 55Hz / 1.5mm double amplitude / 2 hours each in 3 directions
Shock	500m/s ² / 2 times each in 3 directions
Protective structure	IP62
Dielectric withstanding	1,000VAC 50/60Hz for 1 minute
Insulation resistance	500VDC, 20M Ω or higher.

Applications

Picking sensor to verify or instruct taking out a part.

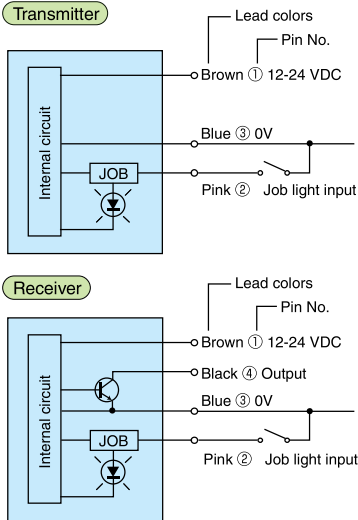


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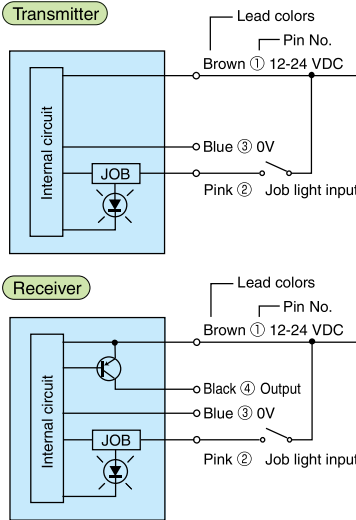
Input/Output Circuit and Connection

Use the mode switch to select NPN/PNP for output and job indicator input.

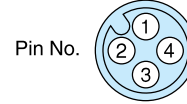
For NPN output



For PNP output

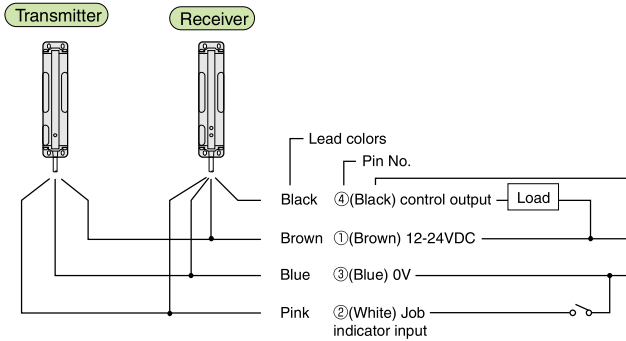


Connector pin assignment for attached cable with connector (-J type)



• Connection

For NPN



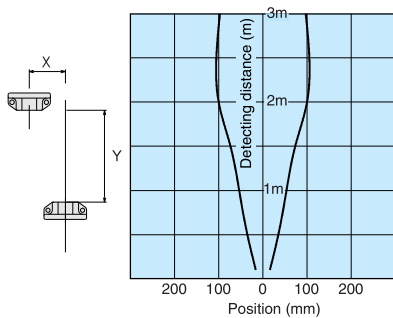
• Cable extension

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

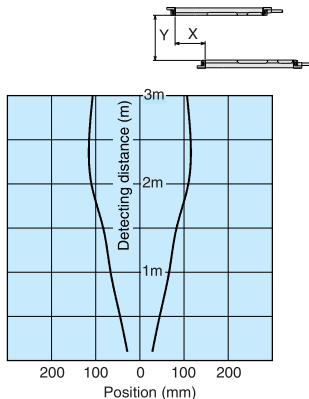
Colors in parentheses show lead colors for use with the optional cord with connector (model: FAC-D4R2/FAC-D4R5, FAC-D4R2S, FAC-D4R2L, FAC-D4R5S, FAC-D4R5L)

Performance Curves (Typical)

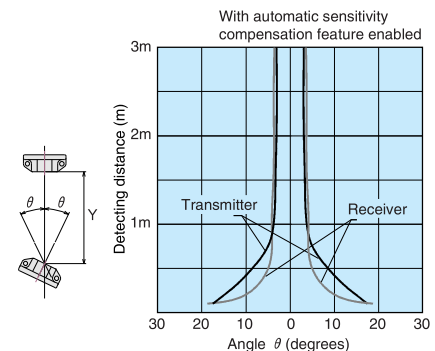
• Response Curves: Lateral Gap



• Response Curves: Longitudinal Gap



• Response Curves: Tilt Angle



Mode Switching

Transmitter

1. Job indicator illumination pattern
2. Job indicator flashing speed switch
3. NC
4. NC
5. NPN/PNP switch
6. Frequency switching feature

Flash	1	Light
Fast	2	Slow
	3	
	4	
PNP	5	NPN
A	6	B

Receiver

1. Job indicator illumination pattern
2. Job indicator flashing speed switch
3. Operation mode switch
4. Fault light setting
5. NPN/PNP switch
6. Frequency switching feature

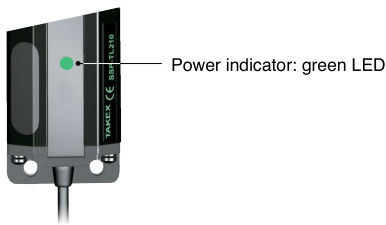
Flash	1	Light
Fast	2	Slow
Dark on	3	Light on
Fault on	4	Fault off
PNP	5	NPN
A	6	B

Explanation of modes

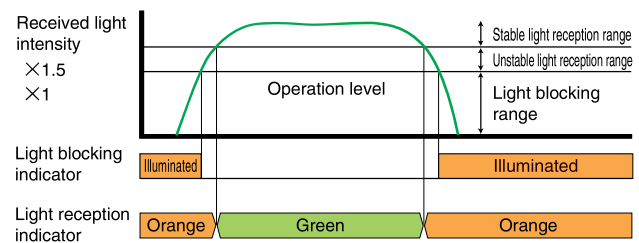
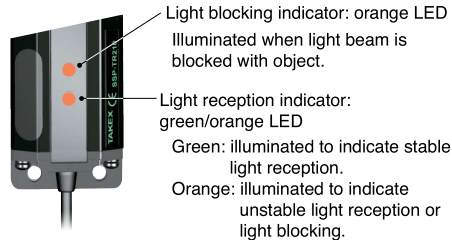
- Job indicator illumination pattern
Selects between continuous and flashing illumination for the job indicator and indicator of the receiver.
Light: continuous illumination / Flash: flashing illumination
- Job indicator flashing speed switch
Specifies the flashing speed for the job indicators and fault indicator of the receiver.
- Operation mode switch
Selects between receiver output modes.
- Fault indicator setting
Specifies the operation of the fault indicator.
- NPN/PNP switch
Specifies the job indicator input and receiver output mode.
- Frequency switching feature
Allows setting of different frequencies for A and B with the frequency switch.
Be sure to select the same frequency (A or B) for the transmitter and receiver facing each other.

Indicators

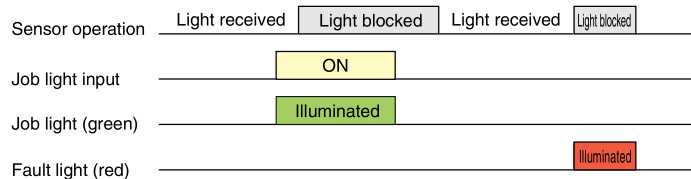
Transmitter



Receiver



Job light and fault light



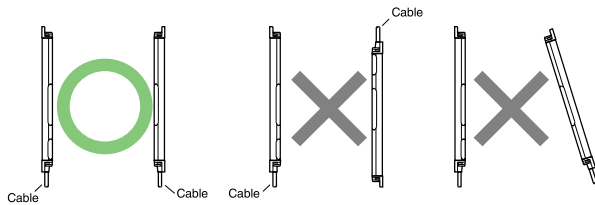
Automatic Sensitivity Compensation Feature

After the optical axis alignment is completed, turn the power off once and back on. The automatic sensitivity compensation feature is enabled and the sensitivity is set at the optimum for the sensor.
If the lens is soiled with dirt or dust, the sensitivity is automatically compensated to achieve the optimum sensitivity after the soil is removed.

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Notes on Installation

- Install the transmitter and receiver directly face-to-face and firmly secure them to prevent optical axes misalignment due to vibration, etc.
- When installing the sensor, make sure that the ends of the transmitter and receiver with the cable are oriented either upward or downward. The sensor does not function if the transmitter and receiver are not oriented the same way.
- Use M4 screws for mounting and limit the tightening torque to within $0.8N \cdot m$. (Prepare screws, etc. separately.)
- Any reflecting object (wall, floor, machine, etc.) within the detecting range between the transmitter and receiver may allow the light of the sensor to go around the detection object which is supposed to block the light, and reach the receiver. Choose the installation location carefully.



For Correct Use



- Be sure to follow the instructions in the operation manual provided for correct use of the product.
- This sensor cannot be used as a power press safety device to prevent death or injury that requires conformity to domestic or overseas standards or certification concerning protection of human body. Use for such purposes may lead to death or serious injury.
- This sensor is designed to detect an object passing over a certain point or line.
- When using this sensor for safety purposes except those mentioned above ensure safe operation of the system as a whole including detection and control function.

Dimensions (in mm)

Optional parts

Mounting brackets

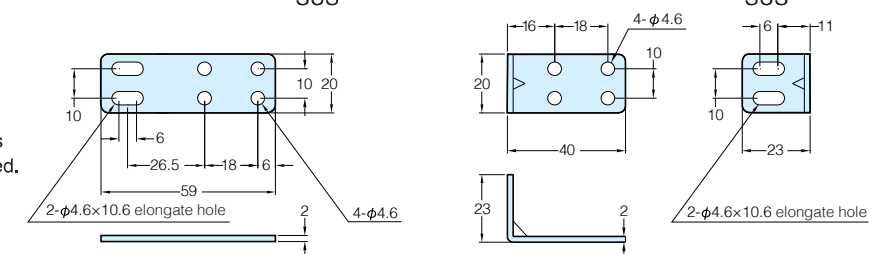
- Two types of mounting brackets are available
- The transmitter and the receiver need two brackets as a set, respectively.
- One set includes two pieces
- Four sets of M4x12 SEMS screws with washers and nuts are included.

Model:SSP-B1
Flat type

- Accessories
Screw: 4
Nut: 4
- Material
SUS

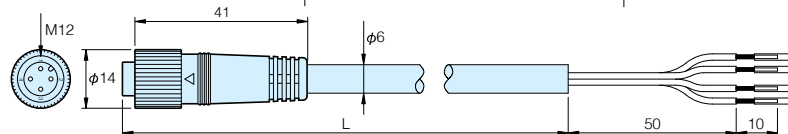
Model:SSP-B2
L-shaped plate type

- Accessories
Screw: 4
Nut: 4
- Material
SUS



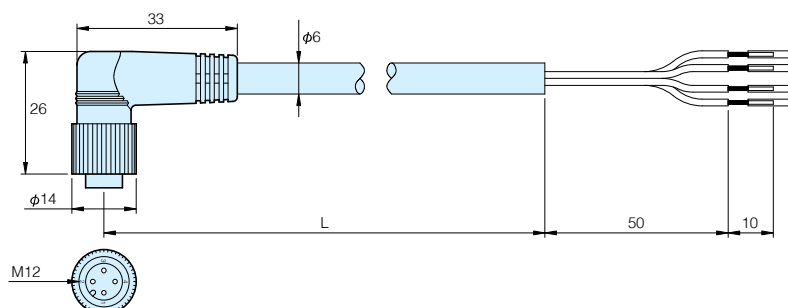
Cable with connector

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



CAD

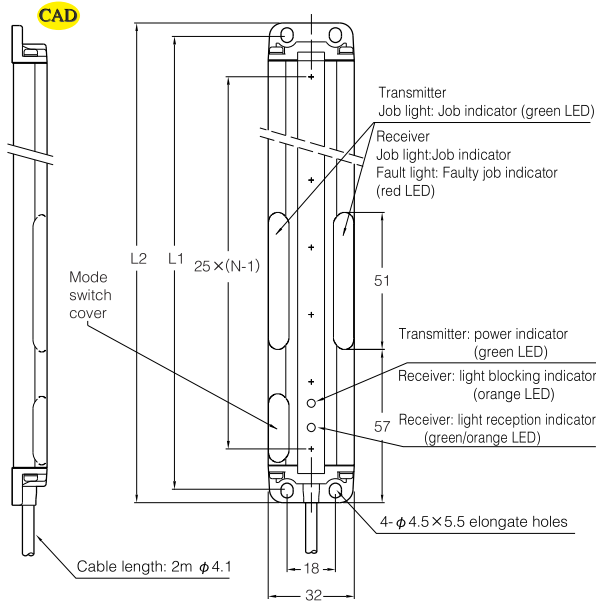
Model:FAC-D4R2L (L:2m)
FAC-D4R5L (L:5m)



SSP-T200

Dimensions (in mm)

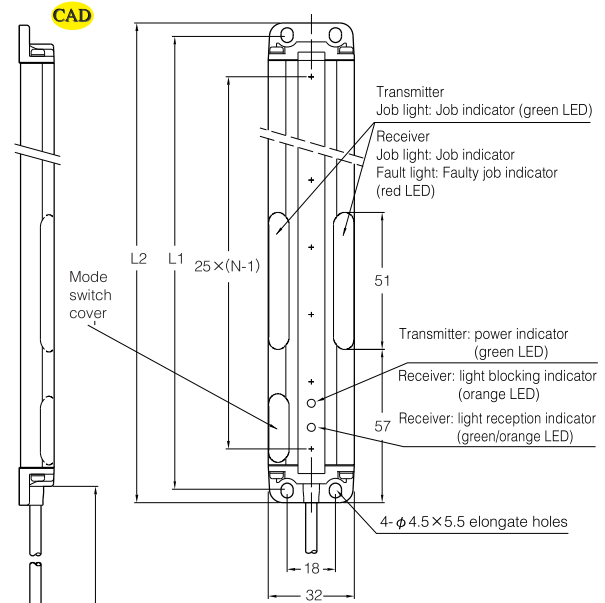
SSP-T200 series



Parts dimensions (in mm)

Model	N	L1	L2
SSP-T205	5	130	140
SSP-T210	10	255	265
SSP-T213	13	330	340
SSP-T216	16	405	415

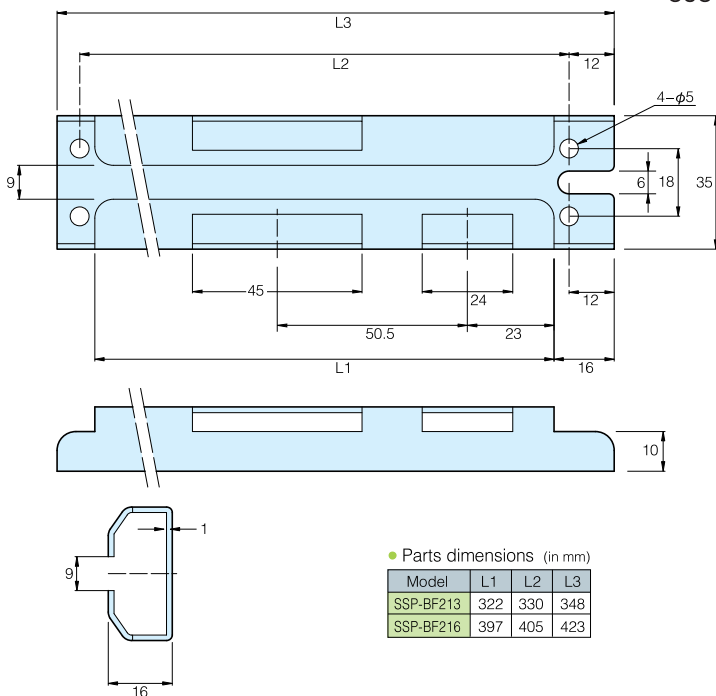
SSP-T200-PJ series



Parts dimensions (in mm)

Model	N	L1	L2
SSP-T205-PJ	5	130	140
SSP-T210-PJ	10	255	265
SSP-T213-PJ	13	330	340
SSP-T216-PJ	16	405	415

Protective cover



Parts dimensions (in mm)

Model	L1	L2	L3
SSP-BF213	322	330	348
SSP-BF216	397	405	423

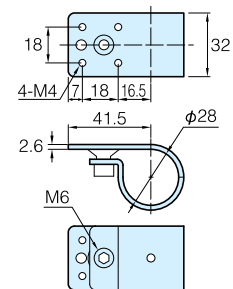
Material SUS

Mounting bracket

- Two types of mounting brackets are available
- One set includes two pieces

- Accessories
- Screw: 4
- Material Resin (black)

Model: SSP-BR1



Mounting bracket

- One set includes two pieces

- Accessories
- Screw: 4
- Nut: 4
- Material Resin (black)

Model : SSP-BR2

