






SS10·SS20·SS40series Light Curtain Sensors



- Light axis interval: 10/20/40mm
- Anti Interference feature for parallel installation (M/S switching)
- Longest -in-class detecting distance of 7m (SS20/SS40 Series)

Type

| Series | Detection method | Detecting distance | Light axis interval | No. of light axes | Detecting width | Set model No. | Operation mode | Detecting object |
|--|--|---|---------------------|-------------------|-----------------|-----------------|--|----------------------------------|
|  SS10 |  Through-beam type |  2m | 10mm | 16 | 150mm | SS10-T16 | <ul style="list-style-type: none">• A/O switching A: output transistor activated when light beams of all axes are received (all axes ON)• O: output transistor activated when light beam of any axis is received (any axis ON)• M/S switching M: master S: slave (For prevention of interference between adjacently installed units) | Opaque object of ϕ 17mm min |
| | | | | 24 | 230mm | SS10-T24 | | |
| | | | | 32 | 310mm | SS10-T32 | | |
| | | | | 48 | 470mm | SS10-T48 | | |
| | | | | 64 | 630mm | SS10-T64 | | |
| | | | | 80 | 790mm | SS10-T80 | | |
|  SS20 | | 20mm | 8 | 140mm | SS20-T8 | | | Opaque object of ϕ 32mm min |
| | | | 12 | 220mm | SS20-T12 | | | |
| | | | 16 | 300mm | SS20-T16 | | | |
| | | | 20 | 380mm | SS20-T20 | | | |
| | | | 24 | 460mm | SS20-T24 | | | |
| | | | 32 | 620mm | SS20-T32 | | | |
|  SS40 | | 40mm | 4 | 120mm | SS40-T4 | | | Opaque object of ϕ 52mm min |
| | | | 6 | 200mm | SS40-T6 | | | |
| | | | 8 | 280mm | SS40-T8 | | | |
| | | | 10 | 360mm | SS40-T10 | | | |
| | | | 12 | 440mm | SS40-T12 | | | |
| | | | 16 | 600mm | SS40-T16 | | | |
| | | | 20 | 760mm | SS40-T20 | | | |
| | | | 24 | 920mm | SS40-T24 | | | |

• Number of axes

Models with numbers of axes other than mentioned in the "Type" table are available. See "Dimensions of portions" in "Dimensions." Contact Takex for details.

• Types with unnecessary light axis disabled

Sensors with the light axes for non-detecting area disabled are available on request.

• Types allowing installation in contact with glossy surface

Products with countermeasures provided for possible faulty operation due to light from the transmitter reflected on the surrounding floor or wall going around the detection object to reach the receiver are available for all models.

Type and model

- Products with countermeasure are provided for lateral reflection: "-BH" added at the end of the standard model No. (with countermeasure for horizontal light)

SS10・SS20・SS40

Rating/Performance/Specification

| Rating/performance | Series | SS10 series | SS20 series | SS40 series |
|--------------------|---------------------------|---|----------------------------------|----------------------------------|
| | Detection method | Through-beam | | |
| | Detecting distance | 2m max. | 7m max. | |
| | Detecting object | Opaque object of ϕ 17mm min. | Opaque object of ϕ 32mm min | Opaque object of ϕ 52mm min |
| | No. of light axes | (See "Type.") | | |
| | Detecting width | (See "Type.") | | |
| | Light axis interval | 10mm | 20mm | 40mm |
| | Power supply | 12-24V DC \pm 10% / Ripple 10% max. | | |
| | Output mode | NPN open collector (*) Rating: sink current 100mA (30VDC) max. | | |
| | Operation mode | A/O and M/S switching (with switch) | | |
| Response time | 30ms max. | 15ms max. | | |
| Specification | Light source (wavelength) | Infrared LED (860nm) | Infrared LED (950nm) | |
| | Light-sensitive element | Photo transistor | | |
| | Indicator | Transmitter: M/S indicator (red LED) / Power indicator (green LED) Receiver: Stable light reception indicator (green LED) / Operation indicator (red LED) | | |
| | Auxiliary functions | Output short circuit protection, Anti Interference feature provided for adjacent installation | | |
| | Switch | Transmitter: M/S mode switch (M: master / S: slave); integrated under screw on the back Receiver: Operation mode switch (A: illuminated when beams of all axes are received / O: activated when beam of any axis is received); integrated under screw on the back | | |
| | Material | Case: aluminum / Front cover/lens: Acrylic | | |
| | Connection | Permanently attached cord with connector (cord length: 0.2m) / Cord with connector Cord: with four 0.5mm ² cores (Outer dimension: dia.6.8) | | |
| | Mass | About 250-800g max. (transmitter/receiver) | | |
| | Accessory | Cord with connector (cord length: 5m), mounting brackets, operation manual | | |
| | Notes | (*) PNP open collector output type (source current: 100mA max.) is also available. | | |

Environmental Specification

| | |
|----------------------|--|
| Ambient light | 9,000lx max. |
| Ambient temperature | -10 - +55°C (non-freezing) |
| Ambient humidity | 35 - 85%RH (non-condensing) |
| Protective structure | IP66 |
| Vibration | 10-55Hz / 1.5mm amplitude / 2 hours each in 3 directions |

Current consumption by model

| Model | Current consumption |
|----------|---------------------|
| SS10-T16 | 90mA max. |
| SS10-T24 | 103mA max. |
| SS10-T32 | 116mA max. |
| SS10-T48 | 142mA max. |
| SS10-T64 | 168mA max. |
| SS10-T80 | 194mA max. |
| SS10-T96 | 220mA max. |
| SS20-T8 | 70mA max. |
| SS20-T12 | 80mA max. |
| SS20-T16 | 90mA max. |
| SS20-T20 | 100mA max. |
| SS20-T24 | 110mA max. |
| SS20-T32 | 130mA max. |
| SS20-T40 | 150mA max. |
| SS20-T48 | 170mA max. |
| SS40-T4 | 50mA max. |
| SS40-T6 | 55mA max. |
| SS40-T8 | 60mA max. |
| SS40-T10 | 65mA max. |
| SS40-T12 | 70mA max. |
| SS40-T16 | 80mA max. |
| SS40-T20 | 90mA max. |
| SS40-T24 | 100mA max. |

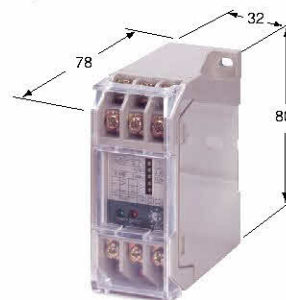
Optional Parts

- Cord with connector (10m)
- For transmitter: SS-H10L (gray covering)
- For receiver: SS-H10R (black covering)

Applicable power supply unit

PS Series

High capacity of 200mA at 12VDC



(General-purpose type)

PS3N

PS3N-SR

(Multifunctional type)

PS3F

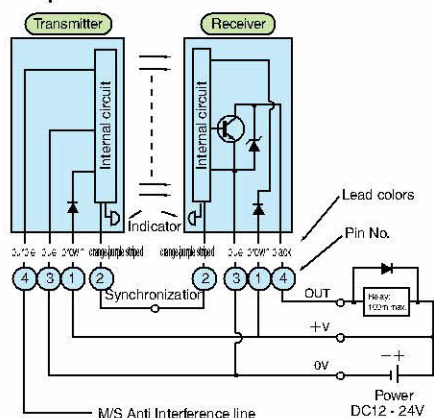
PS3F-SR

Indicator Operation

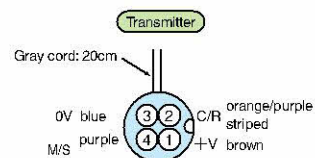
| | Name | Color | Description |
|-------------|----------------------------------|-------|---|
| Transmitter | Power indicator | Green | Illuminated when power is supplied |
| | M/S indicator | Red | Illuminated to indicate M mode Dis-illuminated to indicate S mode |
| Receiver | Stable light reception indicator | Green | Illuminated when the receive light intensity level is 120% or more of the operation level |
| | Operation indicator | Red | Illuminated when output transistor is activated A: illuminated when light beams of all axes are received O: illuminated when light beam of any axis is received |

SS10·SS20·SS40

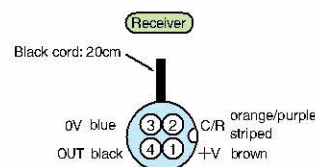
Input/Output Circuit and Connection



Connector pin assignment



C/R: synchronization line
M/S: Anti Interference line
OUT: output

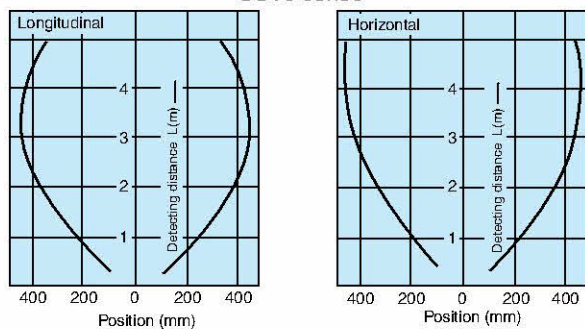


- The output transistor turns off when load short circuit or overload occurs. Check the load and turn the power back on.
- When not using the Anti Interference feature, leave the M/S Anti Interference line unconnected and ensure it will not come in contact with any other cord.

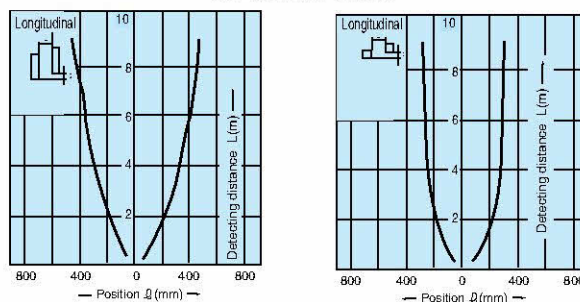
Characteristics (Typical Example)

- Parallel displacement characteristics

SS10 series

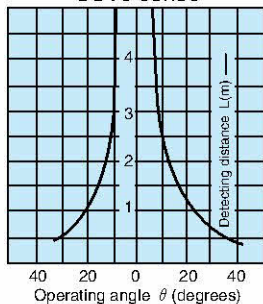


SS20/SS40 series

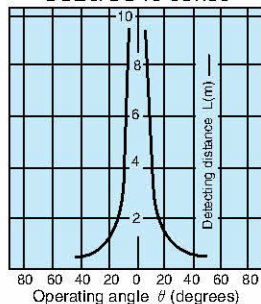


- Operating angle characteristics

SS10 series

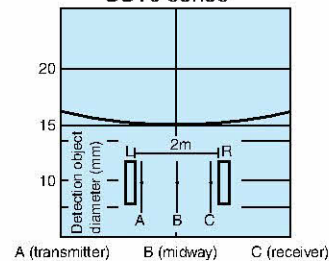


SS20/SS40 series

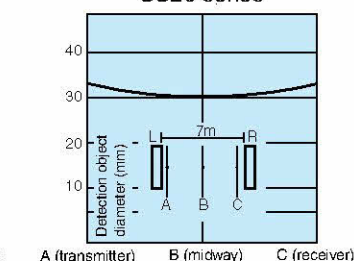


- AE Smallest detectable object diameter characteristics

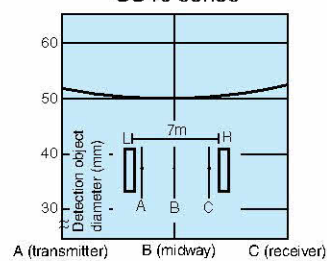
SS10 series



SS20 series



SS40 series



SS10·SS20·SS40

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 press safety device or other safety device for protection of human body 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 in the unlikely event of failure.
- This sensor is intended for detection of ingress of human body or object passing through an arbitrary point not involving protection of human body or safety.
- When using this sensor for safety purposes, ensure safe operation of the system as a whole including detection and control.

M/S (master/slave) Switching

This feature is for prevention of interference.
(With the screw on the back of the transmitter removed)



- Set the switch of either transmitter to M (master) and of the other to S (slave) and connect the Anti Interference lines of both (purple (orange) = pin No. 4) to each other. The M/S indicator of the master transmitter is illuminated (when activated) and the M/S indicator of the slave transmitter remains unilluminated. For standalone use, be sure to set the switch to M to enable the M/S indicator.

Operation Mode Switching

(With the screw on the back of the receiver removed)



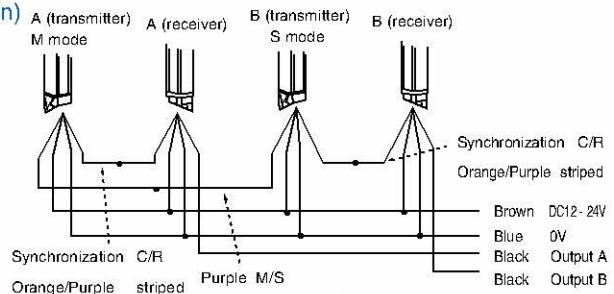
- A: output transistor activated when light beams of all axes are received (all axes reception ON)
- O: output transistor activated when light beam of any axis is received (any axis reception ON)

(Factory setting: A)

Anti Interference

- When using two sets of sensors installed adjacently, connect the Anti Interference lines (purple) of Transmitters A and B with each other.
- Connect the 0 V lines of the Transmitters A and B and Receivers A and B together.
- Set the M/S (master/slave) mode switch of Transmitter A to M and of Transmitter B to S.
- When all wiring has been completed, supply power and check the operation of the M/S indicators of the transmitters:
Transmitter A (M mode): M/S indicator illuminated
Transmitter B (S mode): M/S transmitter not illuminated
- When not using Anti Interference, leave the line for this feature unconnected and ensure it will not come in contact with any other cord.

(Connection)

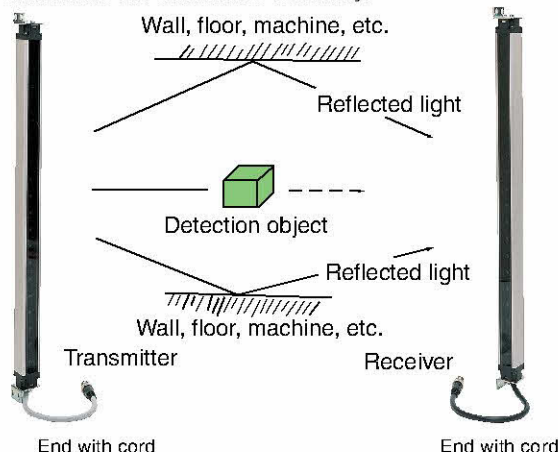


(With more than one power supply)

Connect the 0V lines of the Transmitters A and B and Receivers A and B together.

Notes on Installation

- Any reflecting object (wall, floor, machine, etc.) within the effective 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.
- Make sure that the ends of the transmitter and receiver with the cord are oriented either upward or downward. The sensor does not function if the transmitter and receiver are not oriented the same way.



Cord Extension

C/R synchronization line (orange/purple striped)

The total length of the cord between the transmitter and receiver should be within 50 m.

M/S Anti Interference line (purple)

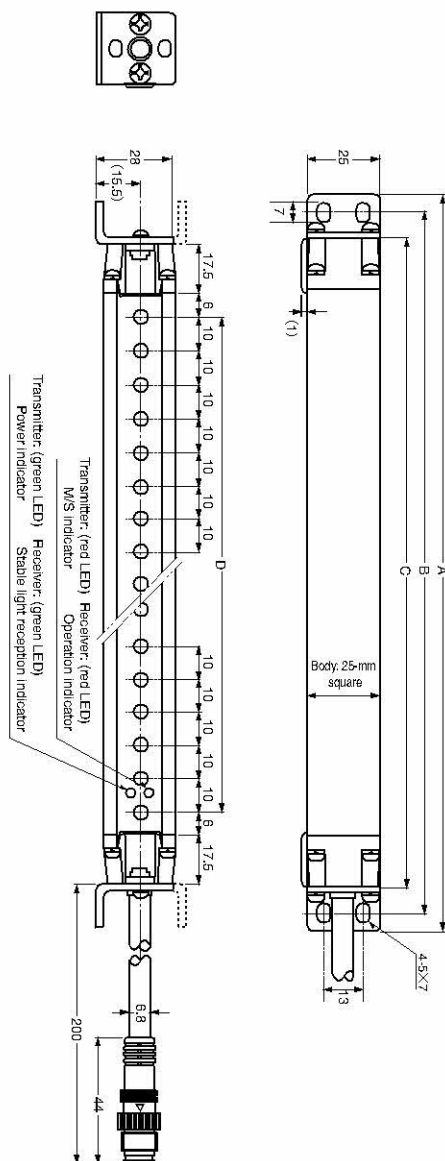
The total length of the cord between the transmitters of the two sets of sensors should be within 50 m.

SS10·SS20·SS40

Dimensions (in mm)(Only receiver is shown in the figure as an example. With transmitter, orientation of mounting bracket is reversed.)

SS10 series

CAD



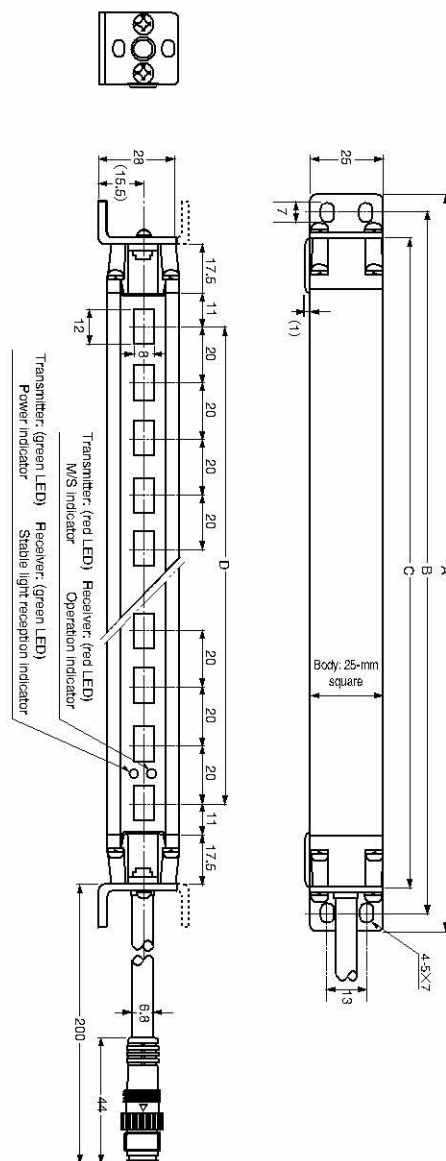
• Dimensions of portions

(in mm)

| Model | A | B | C | D |
|----------|------|------|-----|-----|
| SS10-T16 | 227 | 215 | 197 | 150 |
| SS10-T24 | 307 | 295 | 277 | 230 |
| SS10-T32 | 387 | 375 | 357 | 310 |
| SS10-T40 | 467 | 455 | 437 | 390 |
| SS10-T48 | 547 | 535 | 517 | 470 |
| SS10-T56 | 627 | 615 | 597 | 550 |
| SS10-T64 | 707 | 695 | 677 | 630 |
| SS10-T72 | 787 | 775 | 757 | 710 |
| SS10-T80 | 867 | 855 | 837 | 790 |
| SS10-T88 | 947 | 935 | 917 | 870 |
| SS10-T96 | 1027 | 1015 | 997 | 950 |

SS20 series

CAD



• Dimensions of portions

(in mm)

| Model | A | B | C | D |
|----------|------|------|-----|-----|
| SS20-T8 | 227 | 215 | 197 | 140 |
| SS20-T12 | 307 | 295 | 277 | 220 |
| SS20-T16 | 387 | 375 | 357 | 300 |
| SS20-T20 | 467 | 455 | 437 | 380 |
| SS20-T24 | 547 | 535 | 517 | 460 |
| SS20-T28 | 627 | 615 | 597 | 540 |
| SS20-T32 | 707 | 695 | 677 | 620 |
| SS20-T36 | 787 | 775 | 757 | 700 |
| SS20-T40 | 867 | 855 | 837 | 780 |
| SS20-T44 | 947 | 935 | 917 | 860 |
| SS20-T48 | 1027 | 1015 | 997 | 940 |

SS10·SS20·SS40

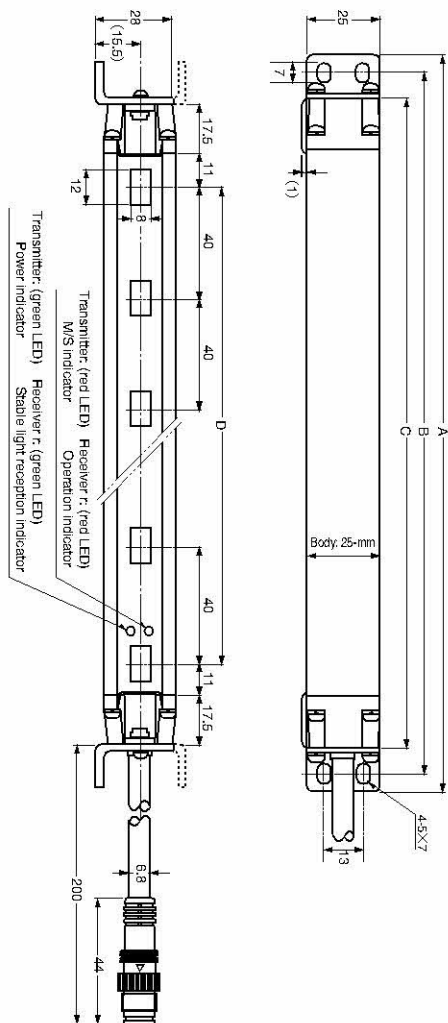
Dimensions (in mm)

SS40 series

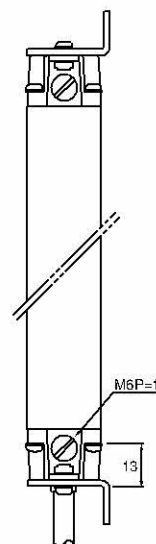
CAD



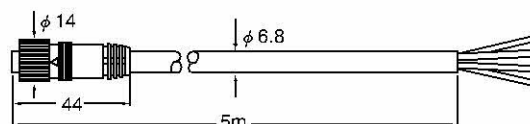
(Only receiver is shown in the figure as an example.
With transmitter, orientation of mounting bracket is reversed.)



Back view (common to all sensors of the series)



Cord with connector (accessory)



SS-H5L (covering: gray)
SS-H5R (covering: black)

Dimensions of portions

(in mm)

| Model | A | B | C | D | Model | A | B | C | D |
|----------|------|------|------|------|----------|------|------|------|------|
| SS40-T4 | 207 | 195 | 177 | 120 | SS40-T28 | 1167 | 1155 | 1137 | 1080 |
| SS40-T6 | 287 | 275 | 257 | 200 | SS40-T30 | 1247 | 1235 | 1217 | 1160 |
| SS40-T8 | 367 | 355 | 337 | 280 | SS40-T32 | 1327 | 1315 | 1297 | 1240 |
| SS40-T10 | 427 | 435 | 417 | 360 | SS40-T34 | 1407 | 1395 | 1377 | 1320 |
| SS40-T12 | 527 | 515 | 497 | 440 | SS40-T36 | 1487 | 1475 | 1457 | 1400 |
| SS40-T14 | 607 | 595 | 577 | 520 | SS40-T38 | 1567 | 1555 | 1537 | 1480 |
| SS40-T16 | 687 | 675 | 657 | 600 | SS40-T40 | 1647 | 1635 | 1617 | 1560 |
| SS40-T18 | 767 | 755 | 737 | 680 | SS40-T42 | 1727 | 1715 | 1697 | 1640 |
| SS40-T20 | 847 | 835 | 817 | 760 | SS40-T44 | 1807 | 1795 | 1777 | 1720 |
| SS40-T22 | 927 | 915 | 897 | 840 | SS40-T46 | 1887 | 1875 | 1857 | 1800 |
| SS40-T24 | 1007 | 995 | 977 | 920 | SS40-T48 | 1967 | 1955 | 1937 | 1880 |
| SS40-T26 | 1087 | 1075 | 1057 | 1000 | | | | | |

