





- Light axis interval 80mm
- Anti Interference feature for adjacent installation (M/S switching)
- Longest -in-class detecting distance of 15 m
- Large indicators

### Type

| Series   | Detection method  | Detecting distance   | Light axis interval | No. of light axes | Detecting width | Set model No.   | Operation mode  | Detecting object                  |
|--|-------------------|--|---------------------|-------------------|-----------------|-----------------|---|-----------------------------------|
| <br><b>SS80</b> | Through-beam type | <br>3~15m | 80mm                | 2                 | 80mm            | <b>SS80-T2</b>  | <ul style="list-style-type: none"> <li>• A (activated when beams of all axes are received)/O (activated when beam of any axis is received) switching</li> <li>• M/S switching<br/>M: master<br/>S: slave<br/>(For prevention of interference between adjacently installed units)</li> </ul> | Opaque object of $\phi 92$ mm min |
|  |                   |  |                     | 4                 | 240mm           | <b>SS80-T4</b>  |   |                                   |
|  |                   |  |                     | 6                 | 400mm           | <b>SS80-T6</b>  |   |                                   |
|  |                   |  |                     | 8                 | 560mm           | <b>SS80-T8</b>  |   |                                   |
|  |                   |  |                     | 10                | 720mm           | <b>SS80-T10</b> |   |                                   |
|  |                   |  |                     | 12                | 880mm           | <b>SS80-T12</b> |   |                                   |
|  |                   |  |                     | 14                | 1040mm          | <b>SS80-T14</b> |   |                                   |
|  |                   |  |                     | 16                | 1200mm          | <b>SS80-T16</b> |   |                                   |
|  |                   |  |                     | 18                | 1360mm          | <b>SS80-T18</b> |   |                                   |
|  |                   |  |                     | 20                | 1520mm          | <b>SS80-T20</b> |   |                                   |
|  |                   |  |                     | 22                | 1680mm          | <b>SS80-T22</b> |   |                                   |
|  |                   |  |                     | 24                | 1840mm          | <b>SS80-T24</b> |   |                                   |

### Optional Parts

| Set model No.               | Discrete model No.               | Length | Description  |
|-----------------------------|----------------------------------|--------|--|
| <b>SS-H5</b><br>(Accessory) | <b>SS-H5L</b> (for transmitter)  | 5m     | Cord with connector (6.8mm outer diameter, four 0.5mm <sup>2</sup> cores, gray (transmitter) or black (receiver) covering) |
|                             | <b>SS-H5R</b> (for receiver)     |        |  |
| <b>SS-H10</b>               | <b>SS-H10L</b> (for transmitter) | 10m    |  |
|                             | <b>SS-H10R</b> (for receiver)    |        |  |

## Rating/Performance/Specification

| Series             |                          | SS80 series  |
|--------------------|--------------------------|--|
| Rating/performance | Detection method         | Through-beam type  |
|                    | Detecting distance       | 3-15m max.   |
|                    | Detecting object         | Opaque object of $\phi$ 92 min.  |
|                    | Light axis interval      | 80mm   |
|                    | Power supply             | 12-24V DC $\pm$ 10%  |
|                    | Output mode              | NPN open collector output Rating: sink current 100mA (30VDC) max.<br>(PNP output type (model No. ending with "-PN") is separately available)   |
|                    | Operation mode           | A/O mode switching A mode: activated when beams of all axes are received (deactivated when beam of any axis is blocked)<br>O mode: activated when beam of any axis is received (deactivated when beams of all axes are blocked)                        |
|                    | Response time            | 15ms max.  |
| Specification      | Light source(wavelength) | Infrared LED (880nm)   |
|                    | Light-sensitive element  | Photo transistor   |
|                    | Indicator                | Transmitter: Power indicator (green LED) / M/S indicator (red LED) / Light axis alignment indicator (green LED)<br>Receiver: Operation indicator (red LED) / Stable light reception indicator (green LED) / Light axis alignment indicator (green LED) |
|                    | Switch (SW)              | Transmitter: M/S mode switch provided<br>Receiver: A/O mode switch provided  |
|                    | Auxiliary functions      | Anti Interference feature for adjacent installation, output short circuit protection   |
|                    | Material                 | Case: aluminum / Front cover/lens: Acrylic   |
|                    | Connection               | Permanently attached cord with connector (cord length: 0.2m) / Cord with connector<br>Cord: with four 0.5mm <sup>2</sup> cores (Outer dimension: dia.6.8)  |
|                    | Accessory                | Cord with connector (cord length: 5m), mounting brackets, operation manual   |
| Notes              |                          | (PNP output type is separately available.)   |

## Environmental Specification

|                             |                      |  |
|-----------------------------|----------------------|--|
| 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 |

## Indicator Operation

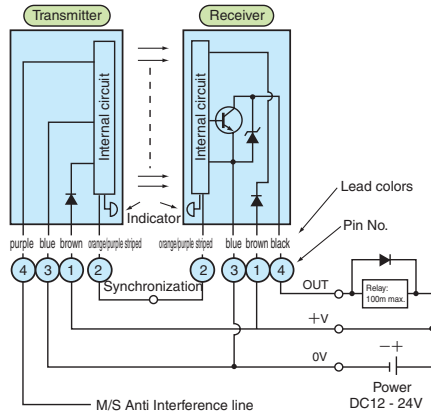
|             | Name                             | Color | Description   |
|-------------|----------------------------------|-------|---|
| Transmitter | Power indicator                  | Green | Illuminated when power is supplied  |
|             | M/S indicator                    | Red   | Illuminated to indicate M mode<br>Dis-illuminated to indicate S mode  |
|             | Light axis alignment indicator   | Green | Illuminated when power is supplied  |
| 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<br>A: illuminated when light beams of all axes are received<br>O: illuminated when light beam of any axis is received |
|             | Light axis alignment indicator   | Green | Illuminated when power is supplied  |

## • Specification by model

| Set model No. | No. of light axes | Detecting width | Current consumption (mA) | Mass (about in g) |          |
|---------------|-------------------|-----------------|--------------------------|-------------------|----------|
|               |                   |                 |                          | Transmitter       | Receiver |
| SS80-T2       | 2                 | 80              | 50                       | 250g max.         |          |
| SS80-T4       | 4                 | 240             | 56                       | 350g max.         |          |
| SS80-T6       | 6                 | 400             | 63                       | 450g max.         |          |
| SS80-T8       | 8                 | 560             | 69                       | 550g max.         |          |
| SS80-T10      | 10                | 720             | 75                       | 650g max.         |          |
| SS80-T12      | 12                | 880             | 82                       | 750g max.         |          |
| SS80-T14      | 14                | 1040            | 88                       | 850g max.         |          |
| SS80-T16      | 16                | 1200            | 95                       | 950g max.         |          |
| SS80-T18      | 18                | 1360            | 101                      | 1050g max.        |          |
| SS80-T20      | 20                | 1520            | 107                      | 1150g max.        |          |
| SS80-T22      | 22                | 1680            | 114                      | 1250g max.        |          |
| SS80-T24      | 24                | 1840            | 120                      | 1350g max.        |          |

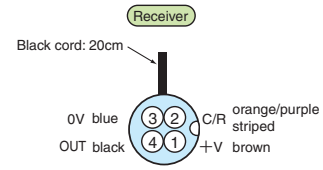
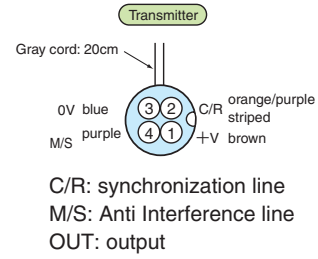
# SS80

## Input/Output Circuit and Connection



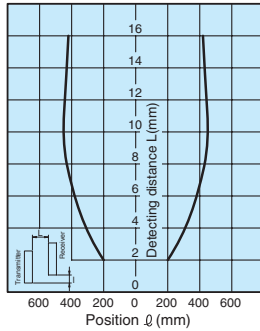
- The output transistor turns off when load short circuit or overload occurs. Check the load and turn the power back on.
- When not using the Anti Mutual Interference feature, leave the M/S Anti Mutual Interference line unconnected and ensure it will not come in contact with any other cord.

## Connector pin assignment

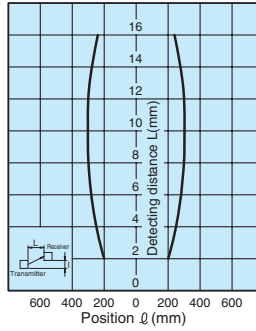


## Characteristics (Typical Example)

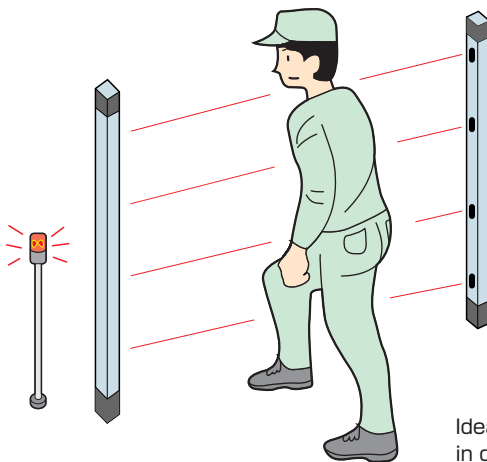
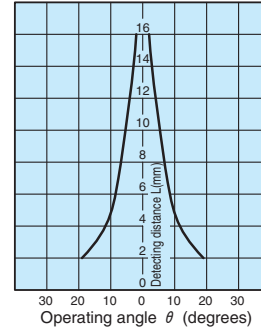
- Parallel displacement characteristics (Longitudinal)



- Parallel displacement characteristics (Horizontal)

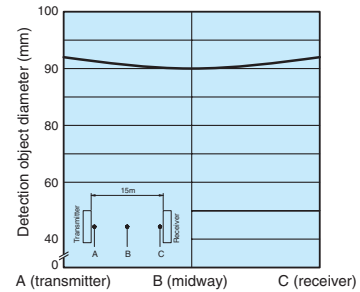


- Operating angle characteristics



Ideal for comparatively large works as in detection of passage or ingress.

- Smallest detectable object diameter characteristics



## 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)

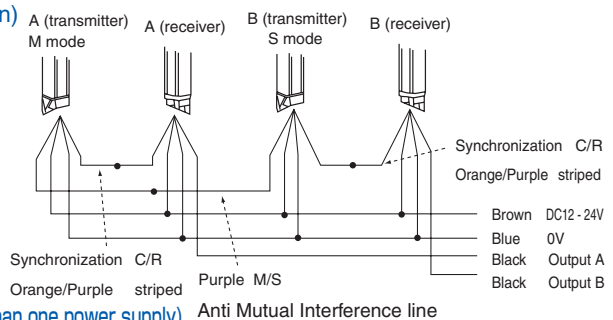


- A: output transistor activated when light beams of all axes are received (all axes reception ON)
  - O: output transistor activated when light beam of any axis is received (any axis reception ON)
- (Factory setting: A)

## 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.

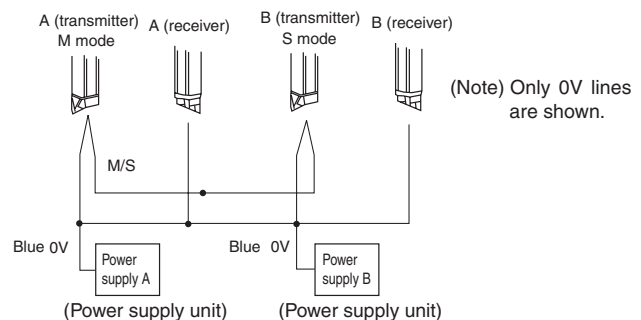
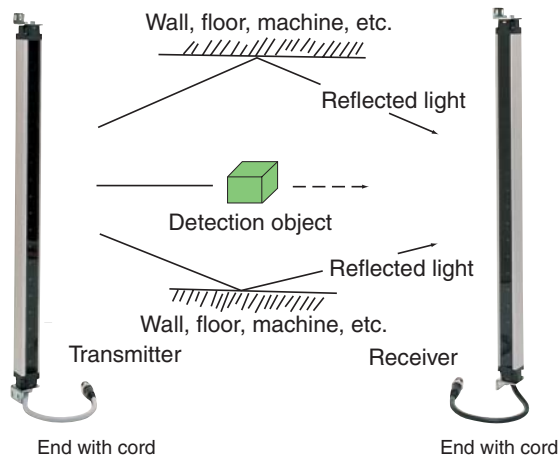
(Connection)



(With more than one power supply) Anti Mutual Interference line  
Connect the 0 V 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 50m.

M/S Anti Interference line (purple)

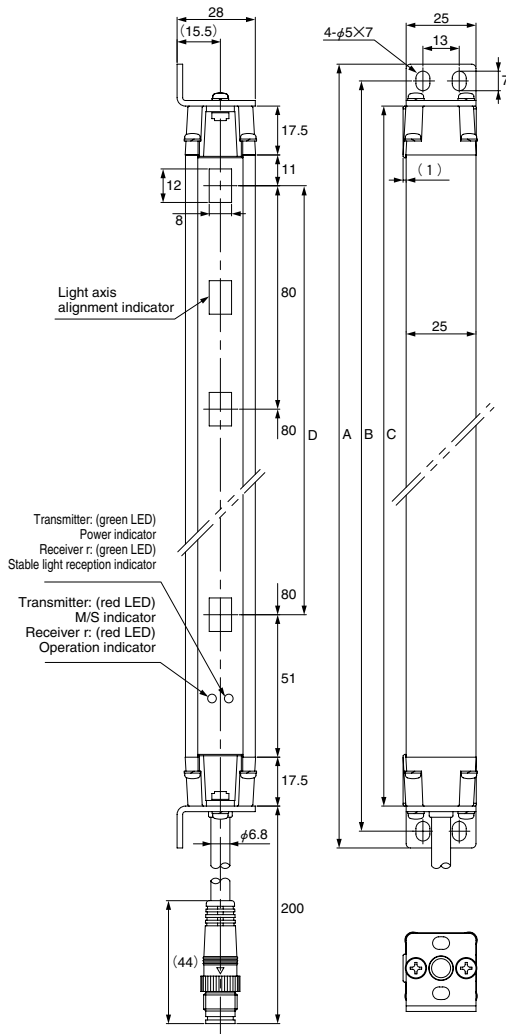
The total length of the cord between the transmitters of the two sets of sensors should be within 50m.

# SS80

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

## SS800 series

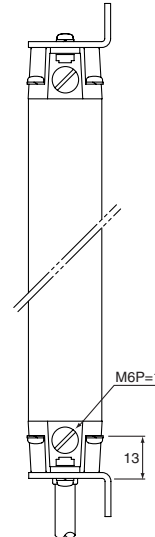
**CAD** (Only receiver is shown in the figure as an example. With transmitter, orientation of mounting bracket is reversed. )



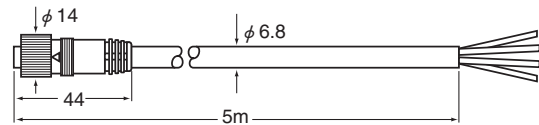
• Dimensions of portions (in mm)

| Model    | A    | B    | C    | D    |
|----------|------|------|------|------|
| SS80-T2  | 207  | 195  | 177  | 80   |
| SS80-T4  | 367  | 355  | 337  | 240  |
| SS80-T6  | 527  | 515  | 497  | 400  |
| SS80-T8  | 687  | 675  | 657  | 560  |
| SS80-T10 | 847  | 835  | 817  | 720  |
| SS80-T12 | 1007 | 995  | 977  | 880  |
| SS80-T14 | 1167 | 1155 | 1137 | 1040 |
| SS80-T16 | 1327 | 1315 | 1297 | 1200 |
| SS80-T18 | 1487 | 1475 | 1457 | 1360 |
| SS80-T20 | 1647 | 1635 | 1617 | 1520 |
| SS80-T22 | 1807 | 1795 | 1777 | 1680 |
| SS80-T24 | 1967 | 1955 | 1937 | 1840 |

## Back view



## Cord with connector (accessory)



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

