**TSS 01 - USER MANUAL**
**SpaceScan Series**
Photoelectric light curtains

**EN**

## Product Data

### Electrical Data

| | SST (Transmitter) | SSR (Receiver) |
|---|---|---|
| Supply voltage | 12 – 30 V dc | |
| Max. Voltage ripple | 15 % (within supply range) | |
| Current consumption | 100 mA (RMS) | 50 mA |
| Max. output load | - | 200 mA |
| Reverse polarity protected | Yes | |
| Short circuit protected | - | Yes |
| Inductive load protection | - | Yes |

### Environmental Data

| | |
|---|---|
| Light immunity @5º incidence | > 100.000 lux |
| Temperature, operation | -30 to + 60 ºC |
| Sealing class | IP 67 |
| Marking | UK CA CE |

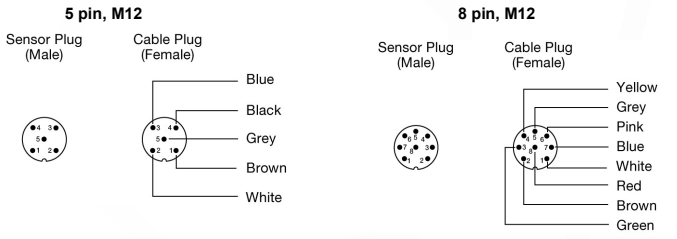
### Available Models

| | Model | Beam spacing | Sensing Range |
|---|---|---|---|
| Transmitter | SST 01-10-xxx-xxx-05-H-1D1-0.5-J5 | 5 mm | 10 m |
| | SST 01-10-xxx-xxx-10-H-1D1-0.5-J5 | 10 mm | |
| | SST 01-10-xxx-xxx-20-H-1D1-0.5-J5 | 20 mm | |
| | SST 01-10-xxx-xxx-40-H-1D1-0.5-J5 | 40 mm | |
| Receiver | SSR 01-4-xxx-xxx-05-H-1Dx-0.5-J8 | 5 mm | 0 m - 4 m |
| | SSR 01-4-xxx-xxx-10-H-1Dx-0.5-J8 | 10 mm | |
| | SSR 01-4-xxx-xxx-20-H-1Dx-0.5-J8 | 20 mm | |
| | SSR 01-4-xxx-xxx-40-H-1Dx-0.5-J8 | 40 mm | |
| | SSR 01-10-xxx-xxx-05-H-1Dx-0.5-J8 | 5 mm | 1 m – 10 m |
| | SSR 01-10-xxx-xxx-10-H-1Dx-0.5-J8 | 10 mm | |
| | SSR 01-10-xxx-xxx-20-H-1Dx-0.5-J8 | 20 mm | |
| | SSR 01-10-xxx-xxx-40-H-1Dx-0.5-J8 | 40 mm | |

| | Model | Otuput Mode |
|---|---|---|
| Receivers | SSR 01-x-xxx-xxx-xx-H-1D**1**-0.5-J8 | Light operated (Normally closed) |
| | SSR 01-x-xxx-xxx-xx-H-1D**2**-0.5-J8 | Dark operated (Normally open) |

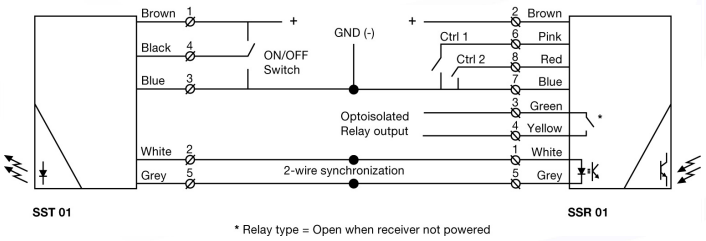
## Connection

### Wiring Diagrams




SST 5 pole M12 male connector | SSR 8 pole M12 male connector

| Transmitter Model | Black wire connected to ( - ) | Black wire not connected | Black wire connected to ( + ) |
|---|---|---|---|
| SST 01-10-xxx-xxx-xx-H-1D1-0.5-J5 | not transmitting | transmitting | transmitting |




* Relay type = Open when receiver not powered

Wiring diagram

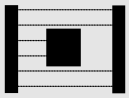
## Installation & Adjustments

### Adjustment

No initial set up or adjustments are required, due the automatic signal-tracking (AST) feature that automatically adjusts the gain of each individual beam on the system.

| | |
|---|---|
| 1 | Mount the transmitter (SST) and receiver (SSR) facing each other and correctly aligned. |
| 2 | Wire the sensor according to the wiring diagram.<br>Notice that the pin 7 on the SSR and the pin 3 on SST (blue wires) must be connected together to a common GND ( – ).<br>Make sure the SSR output load does not exceed 200 mA. |
| 3 | Check for correct wiring before turning power on. |
| 4 | When the power on indicators (green LED) is on the system is operating. |
| 5 | The position of the receiver and transmitter must not be changed after power-up. The light curtain is only intended for static applications. |

### Output Logic

| Detection | Output mode | Output status | Output indicator (yellow led) |
|---|---|---|---|
| Present  | Dark operated | Closed | On |
| | Light operated | Open | Off |
| Absent  | Dark operated | Open | Off |
| | Light operated | Closed | On |

### SST, Test Input

The transmitter SST can be externally disabled and enabled via the black control wire for test purposes. When the transmitter is disabled the receiver will break/open the output relay and the output indicator (yellow LED) will be turned off.

### SSR, Parallel or crossed beam selection, Ctrl 1

Crossed beams can be selected by connecting pin 6 permanently (pink SSR Ctrl 1 wire) to ground (GND) before power on. The green LED (Power on indicator) will flash 2 times after power-up if crossed beams are selected.

### SSR, Blanking function, Ctrl 2

This function will ensure that the light curtain will ignore the beams under normal operation which are obstructed during the blanking setup.

The blanking setup mode is activated by powering up the SSR with pin 8 (red SSR Ctr2 wire) connected to ground (GND). Blanking setup time up to 2,5 seconds from power up (depending on the model). The SSR will blink with the green LED (approximately 0,5 Hz) when blanking is completed and stored in non-volatile memory. Remove the power to the SSR and remove the pin 8 wire from ground and power SSR up again to resume normal operation with blanked beams. The yellow LED (output indicator) on SSR will flash 2 times after power-up if one or more beams are blanked.

During normal operation pin 8 can be left connected to (+) V dc or disconnected. Notice that the beams will remain blanked until a new blanking procedure is done.

### Indicators

| | |
|---|---|
| Red LED | Status indicator |
| Yellow LED | Output indicator |
| Green LED | Power on indicator |

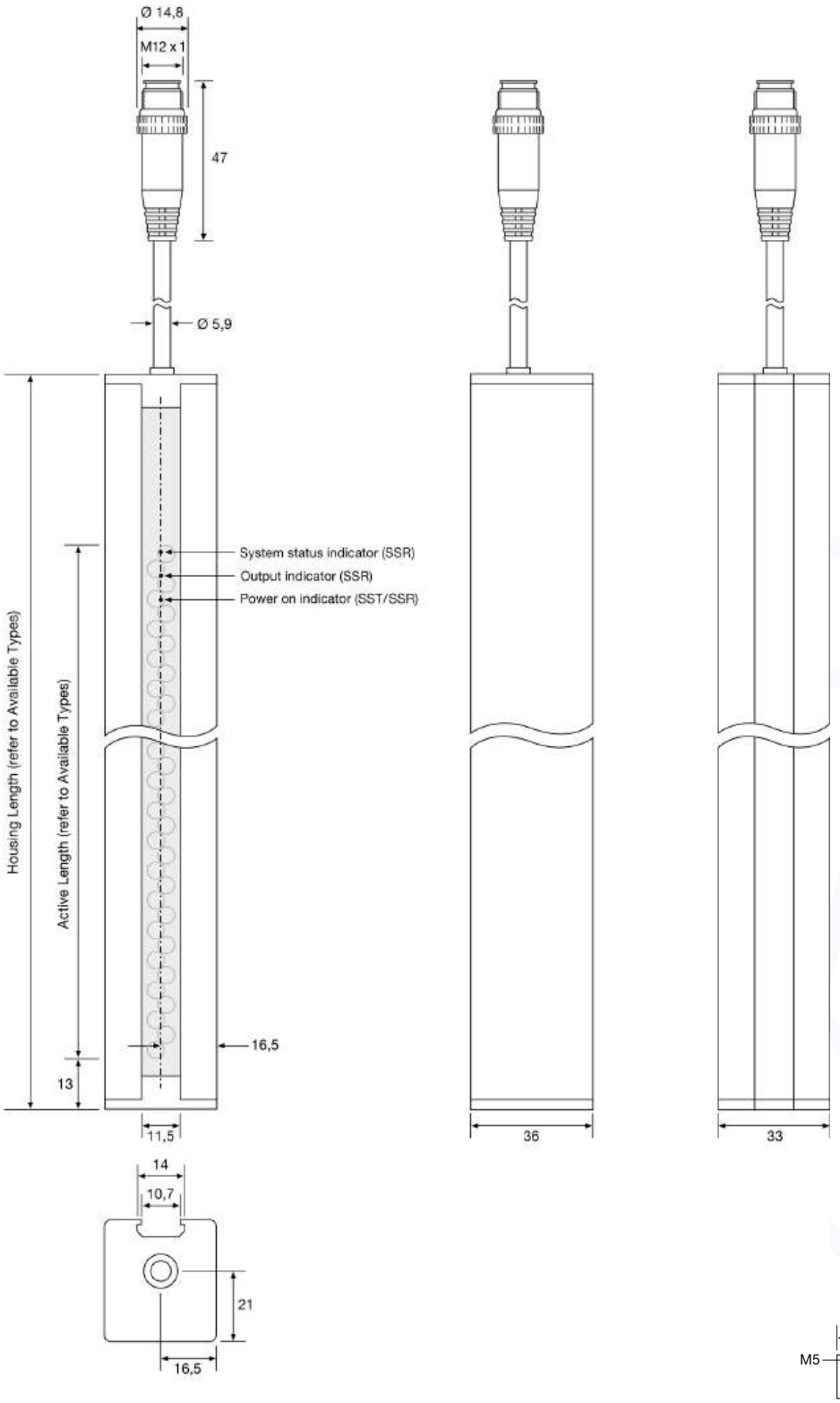
### Troubleshooting

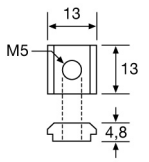
| Probable Reason | Corrective Action |
|---|---|
| **1.** Symptom: Status indicator (Red LED) on SSR is constant on. | |
| SST has no power. | Check supply and supply cable to the SST |
| SST & SSR white, grey and blue wires are not connected correctly. | Connect the wires. |
| **2.** Symptom: Status indicator (Red LED) on SSR is flashing quickly after power-up. | |
| One or more beams are obstructed during power-up | Remove obstruction between SSR and SST or perform a blanking for the SSR to ignore the obstruction. |
| **3.** Symptom: Green LED on SSR is flashing. | |
| Blanking setup is completed. | Turn off the SSR. Remove connection between pin 8 (red wire) and (-) pin 7 (blue wire).<br>Turn the SSR on again. Be aware that beams may now be blanked.<br>Repeat correct blanking process without obstruction of any beams if no beams are intended to be blanked. |
| **4.** Symptom: Output indicator (Yellow LED) on SSR is flashing. | |
| Severe electrical interference. | Separate SSR and SST supply cable from high voltage cables. |
| Severe ambient light. | Swap position of SSR and SST. |
| Cross talk from another light curtain or photo sensor | Swap position of SSR and SST. |
| Cross talk from a nearby HF strip light | Swap position of SSR and SST or remove the strip light. |
| **5.** Symptom: Status and output indicators (Red and Yellow LED's) are off and output is open. | |
| One or more beams are blocked or the rails are out of sensing range. | Remove obstruction or reduce the distance between the rails. |
| The test input on SST is activated | Remove SST pin 4 (black wire) from ground. |

**Warning**
This device is not to be used for Personnel Protection in Machine Guarding Safety applications. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel machine guarding stand-alone safety applications.

**V 1.6 Part Number: 0666220723**
November 2022 edition

## Dimensions and Descriptions




**T-Slot Mounting Fixture**
(2 units included)

(Units in mm) (* 5 mm channel spacing showed in diagram.)

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