

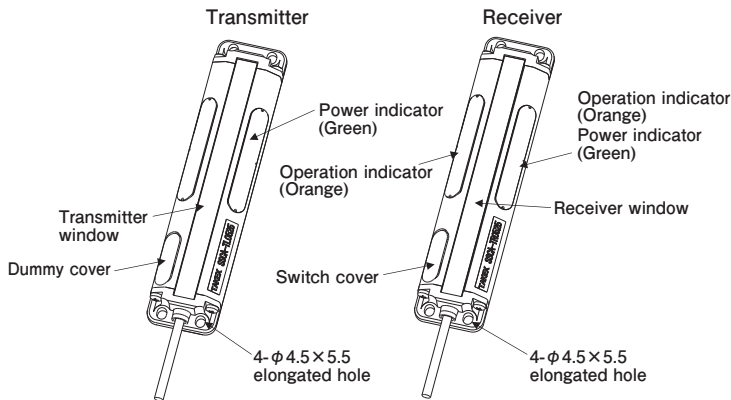
# TAKEX Sequential Array Scanning Type Light Curtain Sensor

## SSCA-T0525 Instruction Manual

**TAKENAKA ELECTRONIC INDUSTRIAL CO.,LTD.**

Head office : 5-22 Higashino Kitainoue-cho, Yamashina-ku, Kyoto 607-8141, Japan  
Telephone : +81-75-581-7111  
FAX : +81-75-581-7118

### 1 PARTS DESCRIPTION



### 2 SAFETY PRECAUTIONS

To ensure safety, be sure to follow the precautions below.

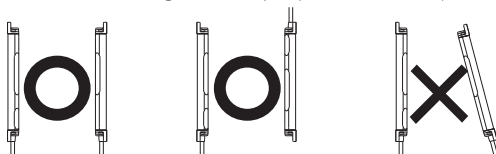
1. Do not use this product for safety critical applications.
2. Do not use this product when its housing or cable is damaged.
3. Do not attempt to disassemble, repair, or modify this product.
4. Do not use this product in an environment containing flammable, explosive, or corrosive gas.
5. Do not use this product in an environment exposed to chemicals or oil.
6. Do not use this product in an environment exposed to water including outdoors or underwater.
7. Do not exceed the rated specifications.
8. Do not expose this product to direct sunlight.
9. Do not use this product in a place where it may be exposed to vibration or shock.
10. Use a soft cloth to clean the transmitter/receiver window.
11. Do not use organic solvents such as alcohol or thinner.
12. Perform a daily operation check, weekly periodical check, and maintenance to ensure correct operation.
13. This product should be disposed of as industrial waste.

### 3 PRECAUTIONS FOR OPERATION

1. Be sure to route the sensor cables separate from any power transmission or high voltage lines, or else use shielded cables. Using the same conduit or ducting as high voltage or power lines may cause malfunctions or damage because of electromagnetic induction.
2. Do not apply excessive force to the cable.
3. When using a switching regulator, be sure to ground the frame ground (FG) terminal.
4. The sensor is enabled approx. 20ms after power is applied. Always power on the sensor prior to the load. If the power is turned on when the switch settings for the sensor are set to ① or ③ shown in SETTING, the output may already be turned ON before the unit is ready for use.
5. Turn off the power of the load first as this product may generate an output pulse when the power is turned off.
6. Avoid turning the power on and off in rapid succession.
7. When extending the cables, use conductors of at least 0.3mm<sup>2</sup> cross-sectional.
8. Limit the current from the power supply to 2A, in accordance with a wire size that matches the sensor.

### 4 MOUNTING

- Place the transmitter and receiver directly facing each other and fix them firmly to prevent the optical axes from shifting due to vibration or other reasons.
- Mount the sensor body using M4 screws, and tighten them with a torque of not exceeding 0.6N·m. (Prepare screws separately)

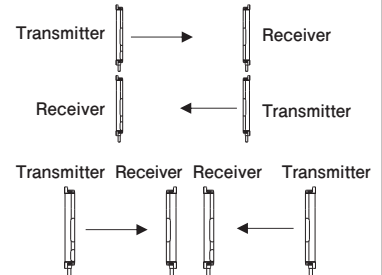


### Precautions for mounting

- If there is a reflective object (wall, floor, machine, etc.) within the detection width between the transmitter and receiver, detection may not be possible due to unwanted reflections entering the receiver.
- Position at least 100 mm away from any reflective surfaces present in any direction, such as glossy or polished surfaces.
- When the detection distance is short, detection of a small glossy object may be unstable due to surface reflections.
- When placing multiple sensors in a small space, be sure to prevent unwanted mutual interference between separate pairs of sensors.
- If the receiver directly receives light from another unwanted transmitter, the light blocking function may not be activated when the sensor is in the light blocking mode, while no problem occurs in the light receiving mode.

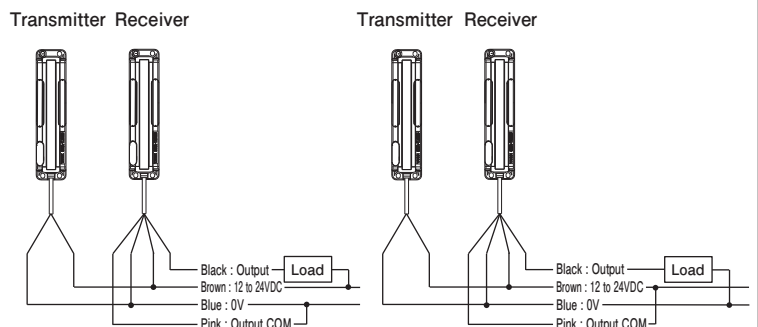
### Anti interference measure

- Install transmitter and receiver alternately
  - When interference in the vertical direction is anticipated
  - When interference from behind is anticipated

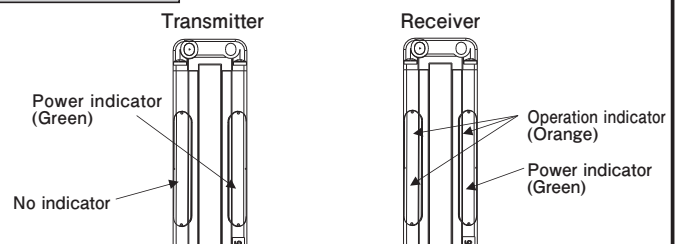


### 5 CONNECTION

- NPN output wiring (when output COM is 0V)
- PNP output wiring (when output COM is 12 to 24VDC)



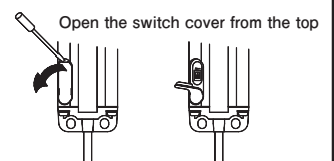
### 6 INDICATOR



### 7 SETTING

Be sure to operate the mode selector switch with the power turned off. The operation mode can be changed by setting the two slide switches inside the sensor.

	SW 1	SW 2	Operation mode	SW positioning	Notes
①	OFF	ON	When light beams of one : Output ON operation or more axes are blocked Indicator (orange LED) turns on	1 2 ON	
②	ON	ON	When light beams of one : Output OFF operation or more axes are blocked Indicator (orange LED) turns off	1 2 ON	Factory setting
③	OFF	OFF	When light beams of one : Output ON operation or more axes are received Indicator (orange LED) turns on	1 2 ON	
④	ON	OFF	When light beams of one : Output OFF operation or more axes are received Indicator (orange LED) turns off	1 2 ON	



## 8 RATING/PERFORMANCE/SPECIFICATIONS

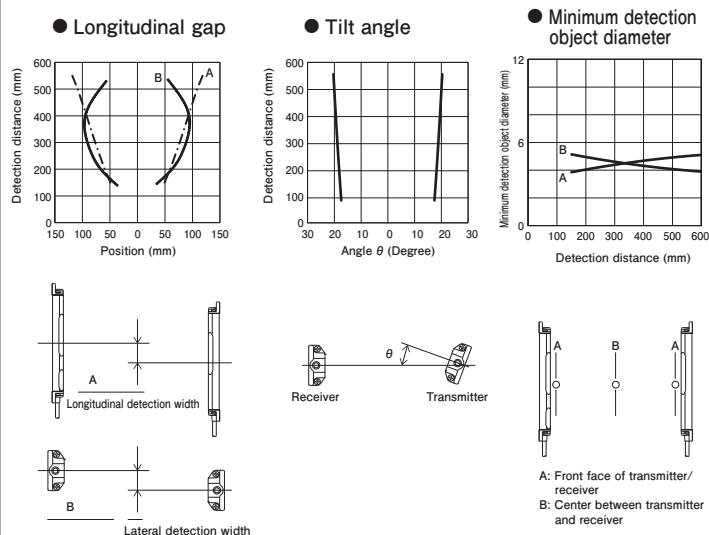
Model	SSCA-T0525
Detection method	Through beam type
Detection distance	150 to 500 mm *1
Detection object	Opaque objects with $\phi 6$ mm or more
Number of optical axes	20 axes
Detection width	105 mm
Beam interval	5.55 mm
Operation power supply	12 to 24VDC $\pm 10\%$ , Ripple: 10% or less
Current consumption	Transmitter: 50 mA or less Receiver: 120mA(1440mW) or less (12VDC) 60mA(1440mW) or less (24VDC)
Output mode	PhotoMOS output (Short-circuit protection provided) Load current: 100mA (30VDC) or less, Residual voltage : 2V or less
Operation mode	ON/OFF output when light beams of all axes are received — ON/OFF when light beams of any axes are blocked (switchable) ON/OFF output when light beams of all axes are blocked — ON/OFF when light beams of any axes are received (switchable)
Response time	Up to 15 ms
Light source	Infrared LED
Indicators	Transmitter: Power indicator (Green LED) Receiver: Power indicator (Green LED), Operation indicator (Orange LED)
Switch	Light ON/Dark ON selector switch Operation of all axes/ one or more axes selector switch
Material	Case: Aluminum, Cap: Polybutylene terephthalate (PBT)
Connection method	Cord-attached type 4.1 mm o.d. Transmitter: 0.3mm <sup>2</sup> x 2-core, 2m (Gray) Receiver: 0.2mm <sup>2</sup> x 4-core, 2m (Black)
Weight	Transmitter: Approx. 110 g, Receiver: Approx. 110 g
Accessories	Instruction manual

\*1 The detection distance indicates the distance that can be set on the transmitter/receiver. Detection is possible even if the object is placed close to the transmitter/receiver.

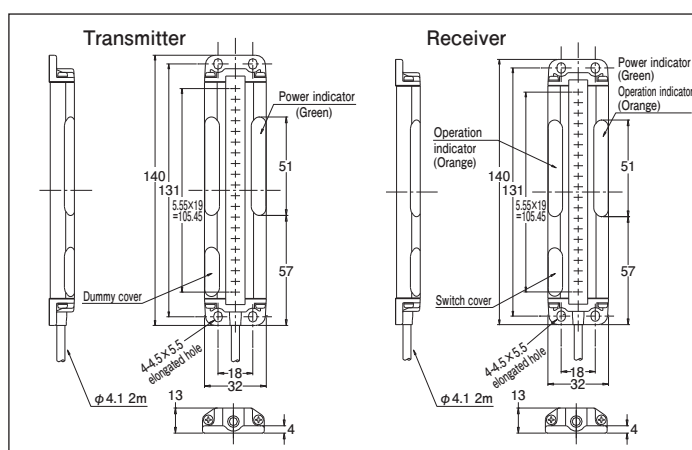
## 9 ENVIRONMENTAL SPECIFICATIONS

Ambient light	5,000 lx or less
Ambient temperature	-10 to +55°C (no freezing)
Ambient humidity	35 to 85%RH (no dew condensation)
Protection	IP 62
Anti-vibration	10 to 55Hz, double amplitude 1.5 mm, X, Y, Z directions, 2 hours each
Shock	500 m/s <sup>2</sup> , 3 times each in X, Y and Z directions
Dielectric withstand voltage	500VAC for 1 min
Insulation resistance	At least 20M $\Omega$ with 500VDC Megger

## 10 DETECTION CHARACTERISTICS (Typical)



## 11 DIMENSIONS (in mm)



## 12 WARRANTY

The product is covered by a warranty based on the Quality Regulations of Takenaka Electronic Industrial Co., LTD. (Takenaka). Regarding the warranty, please feel free to ask any questions to Takenaka, Takex sales office or authorized distributors.

### 1 (Warranty period)

The warranty period is one (1) year after delivery to a designated location. This warranty does not apply to expendable supplies like batteries or relays, and products of other manufacturers which Takenaka markets.

### 2 (Scope of warranty)

If any defect is found during the warranty period, Takenaka will, at its option, repair or replace the defective product at the location of delivery. This warranty is void and of no effect if the product is subject to improper use or handling, improper maintenance, modification, repair made by persons not authorized by Takenaka or a lack of reasonable care. The warranty does not cover defects caused by the other product, reason including fire, flood, earthquake, lightning surge and other natural disasters.

- If the product is used inappropriately or used under inappropriate conditions that are not described in the instruction manual or specifications.
  - If the defect is caused by improper maintenance, including a failure to replace consumable or periodical parts as described in the instruction manual or specifications.
  - If the defect is not directly caused by the warranted product.
  - If the products is modified or repaired by persons not authorized by Takenaka.
  - If the defect is caused by rough handling, dropping, or collision after the product is delivered.
  - If the defect could not be predicted from a technical viewpoint at the time Takenaka made the agreement for, manufactured, or installed the product.
  - If the defect is caused by a natural disaster such as a fire, flood, earthquake, lightning (including a lightning surge) and so on, or an accident such as an abnormal voltage that Takenaka is not responsible for.
- The warranty provided here is only for the Takenaka product and does not cover any secondary damage caused by problems related to the product.

### 3 (Target of warranty)

- In case that the product is used in combination with other products or as a part of a system, Buyer should confirm the compatibility of the product to the application by relevant laws, decrees, standards and regulations.
- This product is designed and manufactured for use in general industries.

This warranty does not cover the application of the product to:

- Nuclear power facilities including power station, incineration plant, public utilities including railway, vehicle and airway facilities, medical devices, amusement machines, safety devices and facilities that are governed by regulation of government or industrial organization.
- Facilities that may cause danger or serious effects on human life and assets.
- Utilities like electricity, gas or water facilities. Facilities that are required 24 hour continuous operation.
- Outdoor use or use in improper conditions or environment.
- Other facilities which requires broad and detailed consideration concerning safety and reliability equivalent to the above.

This warranty may cover these application in case that Takenaka is notified about the application of the product before sale and Buyer approves the compatibility and the specifications of the product by written agreement and / or by providing required safety measures.

## 13 DISCLAIMER

- This product is designed to detect a presence or passage of an object. This product does not have any function to prevent accidents, death or injuries. Takenaka will assume no responsibility for damages or losses resulting from accidents or disasters caused by a failure of the product, complete wiring or installation or any act that does not follow the instruction manual.
- Earthquakes, lightning (including lightning surges), fires that we are not responsible for, acts or incidents caused by third parties, intentional or accidental misuse, or usage under other abnormal conditions.
- Any secondary damage caused by the usage, faulty operation, or malfunction of the product like suspended operation or malfunction of a connected device or system, damage to a device, loss of profit, interruption of business, corruption or loss of memory contents, cost of restoration, etc.
- Misuse, failure related to maintenance, installation or deinstallation, or failure to follow the contents of the instruction manual.
- Any malfunction (including false alarm or lost alarm) caused by the combination with a connected device or software over that we have no control.
- The responsibility of Takenaka is limited to the extent of repair or replacement of the product. The expenses we are liable for will not exceed the original product cost.