



Smart Photo Sensor SPS02 Instruction Manual

Thank you for purchasing our product.
Before using this product, Please read through this instruction manual carefully in order to use this product correctly and safely.
After reading, keep this instruction manual handy so that you can refer to, whenever you need it.

TOSHIBA TELI CORPORATION

Information contained in this document is subject to change without prior notice.

D4213658E



Smart Photo Sensor

Contents

Safety Precautions	1
General Handling.....	2
RESTRICTION FOR USE.....	6
CASES FOR INDEMNITY (LIMITED WARRANTY)	7
Notes on using this product	8
1 Overview	11
2 Product Configuration.....	11
3 Option.....	12
4 Name of all parts	13
5 Connection Example	14
6 Wiring	16
7 Input and Output Circuit.....	17
8 Application Example.....	18
9 Specifications.....	18
10 Related Materials	20
11 Dimensions.....	21
12 Spectral Response Example.....	23
13 Warranty Rules.....	24
14 Repair	25

D4213658E



Safety Precautions

Before using this product, read these safety precautions carefully. Important information is shown in this Instruction Manual to protect users from bodily injuries and property damages, and to enable them to use the product safely and correctly.

Please be sure to thoroughly understand the meanings of the following signs and symbols before reading the main text that follow, and observe the instructions given herein.

[Definition of Safety Signs]

Safety Signs	Description
 WARNING	Indicates a potentially hazardous situation that may result in death or serious injury (*1) in the event of improper handling.
 CAUTION	Indicates a potentially hazardous situation that may result in light to moderate injuries (*2) or only in property damage (*3) in the event of improper handling.

Notes *1: "Serious injury" refers to cases of loss of eyesight, wounds, burns (high or low temperature), electric shock, broken bones, poisoning, etc., which leave after-effects or which require hospitalization or a long period of outpatient treatment of cure.

*2: "Light to moderate injuries" refers to injuries, burns, electric shock etc. that do not require hospitalization or long-term treatment.

*3: "Property damage" refers to cases of extensive damage involving damage to buildings, equipment, farm animals, pet animals and other belongings.

[Explanation of Safety Symbols]

Safety Symbols	Description
 PROHIBITED	This sign indicates PROHIBITION (Do not). The content of prohibition is shown by a picture or words beside the symbol.
 MANDATORY	This sign indicates MANDATORY ACTION (You are required to do). The content of action is shown by a picture or words beside the symbol.



Smart Photo Sensor

General Handling

WARNING



Unplug

- **Stop operation immediately when any abnormality or defect occurs.**
If abnormal conditions are present, such as smoke, a burning smell, ingress of water or foreign matter, or if the equipment is dropped or malfunctions, fire or electric shock may result.
Be always sure to disconnect the power cable from the wall socket at once and contact your dealer.



Do not get wet

- **Do not use the equipment in locations subject to water splashes.**
Otherwise, fire or electric shock may result.



Do not get wet

- **Do not disassemble, repair, or modify the equipment.**
Otherwise, fire or electric shock may result.
For internal repair, inspection, or cleaning, contact your sales representative.



Avoid

- **Do not place anything on the equipment.**
If metallic objects, liquid, or other foreign matter enters the equipment, fire or electric shock may result.



Avoid

- **Do not install the equipment in an unstable or inclined location or locations subject to vibration or impact.**
Otherwise, the equipment may topple over and cause personal injury.



Do not touch

- **During an electrical storm, do not touch the power cable and the connection cable.**
Otherwise, an electric shock may result.



Smart Photo Sensor



Instruction

- **Use the specified voltage.**
Use of an unspecified voltage may result in fire or electric shock.



Avoid

- **Do not be handled roughly, damaged, fabricated, bent forcefully, pulled, twisted, bundled, placed under heavy objects or heated the power cable and the connection cable.**
Otherwise, fire or electric shock may result.
-



Smart Photo Sensor

CAUTION



Instruction

- **Observe the following when installing the equipment:**

- Do not cover the equipment with a cloth, etc.
 - Do not place the equipment in a narrow location where heat is likely to accumulate.
- Otherwise, heat will accumulate inside the equipment, possibly resulting in a fire.



Avoid

- **Do not place the equipment in locations subject to high moisture, oil fumes, steam, or dust.**

Otherwise, fire or electric shock may result.



Avoid

- **Do not install the equipment in locations exposed to direct sunlight or humidity.**

Otherwise, the internal temperature of the equipment will rise, which may cause a fire.



Instruction

- **Use only specified the power cable and the connection cables.**

Otherwise, fire or electric shock may result.



Avoid

- **Do not give strong impact against the equipment.**

It may cause the trouble.



Instruction

- **When performing connection, turn off power.**

When connecting the power cable and the connection cable, turn off the equipment power.

Otherwise, fire or electric shock may result.



Avoid

- **Do not expose this product head to any intensive light (such as direct sunlight).**

Otherwise, its inner image pickup device might get damaged.



Avoid

- **Avoid short-circuiting signal output.**

Otherwise, a malfunction may occur.



Smart Photo Sensor



Avoid

- **Avoid giving a strong shock against the product body.**

It might cause a breakdown or damage. If the product is used in a system where its connector is subjected to strong repetitive shocks, its connector is possible to break down. If you intend to use the product in such a situation, if possible, bundle and fix a cable in the place near the product, and do not transmit a shock to the connector.



Instruction

- **Contact your sales representative to request periodic inspection and cleaning (every approx five years).**

Accumulation of dust inside the equipment may result in fire or electric shock. For inspection and cleaning costs, contact your sales representative.



RESTRICTION FOR USE

- Should the equipment be used in the following conditions or environments, give consideration to safety measures and inform us of such usage:
 1. Use of the equipment in the conditions or environment contrary to those specified, or use outdoors.
 2. Use of the equipment in applications expected to cause potential hazard to people or property, which require special safety measures to be adopted.
- This product can be used under diverse operating conditions. Determination of applicability of equipment or devices concerned shall be determined after analysis or testing as necessary by the designer of such equipment or devices, or personnel related to the specifications. Such designer or personnel shall assure the performance and safety of the equipment or devices.
- This product is not designed or manufactured to be used for control of equipment directly concerned with human life (*1) or equipment relating to maintenance of public services/functions involving factors of safety (*2). Therefore, the product shall not be used for such applications.
 - (*1) : Equipment directly concerned with human life refers to.
 - Medical equipment such as life-support systems, equipment for operating theaters.
 - Exhaust control equipment for exhaust gases such as toxic fumes or smoke.
 - Equipment mandatory to be installed by various laws and regulations such as the Fire Act or Building Standard Law.
 - Equipment related to the above.
 - (*2) : Equipment relating to maintenance of public services/functions involving factors of safety refers to.
 - Traffic control systems for air transportation, railways, roads, or marine transportation.
 - Equipment for nuclear power generation
 - Equipment related to the above



Smart Photo Sensor

CASES FOR INDEMNITY (LIMITED WARRANTY)

We shall be exempted from taking responsibility and held harmless for damage or losses incurred by the user in the following cases.

- In the case damage or losses are caused by natural disasters, such as an earthquake and thunder, fire, or other acts of God, acts by a third party, deliberate or accidental misuse by the user, or use under extreme operating conditions.
- In the case of indirect, additional, consequential damages (loss of business interests, suspension of business activities) are incurred as result of malfunction or non-function of the equipment, we shall be exempted from responsibility for such damages.

Also, in the case damage or losses are caused by an application using with this product.

- In the case damage or losses are caused by failure to observe the information contained in the instructions in this instruction manual and specifications.
- In the case damage or losses are caused by use contrary to the instructions in this instruction manual and specifications.
- In the case damage or losses are caused by malfunction or other problems resulting from unintended use of equipment or software etc. that are not specified.
- Expenses we bear on this product shall be limited to the individual price of the product.
- The item that is not described in specifications of this product is out of the guarantee.
- The case of damages or losses which are caused by incorrect connection of the cable is out of the guarantee.

D4213658E



Smart Photo Sensor

Notes on using this product

- Handle carefully

Do not drop the equipment or allow it to be subject to strong impact or vibration, as such action may cause malfunctions. Further, do not damage the connection cable, since this may cause wire breakage.

- Environmental operating conditions

Do not use the product in locations where the ambient temperature or humidity exceeds the specifications. Otherwise, internal components may be adversely affected. In particular, do not use the product in areas exposed to direct sunlight. Moreover, during shooting under high temperatures, white spots (noise) may be produced, depending on the subject or product conditions (such as increased gain). However, such phenomena are not malfunctions.

- This product can be used under various conditions, please be sure to test operation under the condition and the environment you use.

- Check a combination with the lens

Depending on the lens and lighting you use, an image is reflected as a ghost in the imaging area. However, this is not because of a fault of the product. In addition, depending on the lens you use, the performance of the product may not be brought out fully due to deterioration in resolution and brightness in the peripheral area, aberration and others. Be sure to check a combination with the product by using the lens and lightning you actually use. When installing a lens in the product, make sure carefully that it is not tilted. In addition, use a mounting screw free from defects and dirt. Otherwise, the lens etc. may be unable to be removed.

- Do not expose the product's image-pickup-plane to sunlight or other intense light directly
Its inner CMOS (Complementary Metal-Oxide Semiconductor) sensor might be damaged.

- Occurrence of noise on the screen

If an intense magnetic or electromagnetic field is generated near the product or connection cable, noise may be generated on the screen. If this occurs, move the product or the cable.

- Handling of the protective tape

If the product is not in use, affix the protective tape to the product to protect the CMOS sensor.

- If the equipment is not to be used for a long duration

Turn off power to the product for safety.



Smart Photo Sensor

- Maintenance

Turn off power to the equipment and wipe it with a dry cloth.

If it becomes severely contaminated, gently wipe the affected areas with a soft cloth dampened with diluted neutral detergent. Never use alcohol, benzene, thinner, or other chemicals because such chemicals may damage or discolor the paint and indications.

If the image pickup surface becomes dusty, contaminated, or scratched, consult your sales representative.

- Disposal

When disposing of the product, it may be necessary to disassemble it into separate parts, in accordance with the laws and regulations of your country and/or municipality concerning environmental contamination.

This product is marked this symbol to subject to EU Waste Electrical & Electronic Equipment (WEEE) directive.

Following information is only for EU-member states:

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about the take-back and recycling of this product, please contact your supplier where you purchased the product.



	"This symbol is applicable for EU member states only"
--	---

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be require to correct the interference at his own expense.



 中华人民共和国 环保使用期限	<p>环保使用期限标识，是根据电子信息产品污染控制管理办法以及，电子信息产品污染控制标识要求(SJ/T11364-2014)、电子信息产品环保使用期限通则，制定的适用于中国境内销售的电子信息产品的标识。</p> <p>电子信息产品只要按照安全及使用说明内容，正常使用情况下，从生产月期算起，在此期限内，产品中含有的有毒有害物质不致发生外泄或突变，不致对环境造成严重污染或对其人身、财产造成严重损害。</p> <p>产品正常使用后，要废弃在环保使用年限内或者刚到年限的产品时，请根据国家标准采取适当的方法进行处置。</p> <p>另外，此期限不同于质量/功能的保证期限。</p> <p>The Mark and Information are applicable for People's Republic of China only.</p>
--	--

<产品中有毒有害物质或元素的名称及含量>

部件名称	有毒有害物质或元素					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
相机本体	×	○	○	○	○	○

「本表格依据SJ/T 11364的规定编制」

○：表示该有毒有害物质在该部件所有均质材料中的含量均在电子信息产品中有毒有害物质的限量要求标准规定的限量要求(GB/T26572)以下

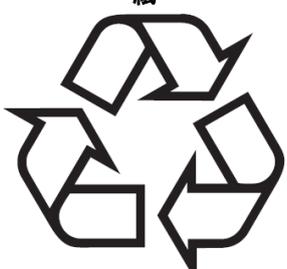
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出电子信息产品中有毒有害物质的限量要求标准规定的限量要求(GB/T26572)

This information is applicable for People's Republic of China only.

リサイクルに関する情報(包装物)

有关再利用的信息(包装物)

Information on recycling of wrapping composition

内部緩衝材料・袋 内部缓冲材料・袋 Internal buffer materials・Bag	
	<p>紙</p>  <p>紙 Paper</p>



Smart Photo Sensor

1 Overview

A Smart Photo Sensor is ultra-compact and contains high-speed image processing system. A device that can construct an image system by one chip is used in this sensor. It is capable to high-speed process the image because of preprocessing in the device, and it is also capable to determine a result that a former photoelectric sensor was incapable to.

An interface supplies GPIO, USB and RS-232, and it is possible to embed them in various uses. GPIO is used for determining the permission for the result of preprocessing, and USB is used for changing the parameters and the image transfer. RS-232 is prepared for recognition of the object position and PLC transmission.

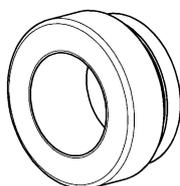
It is possible to choose a suitable application and embed it according to conditions of use such as the environment, the object and the result of preprocessing. As for application development, Visual Architect (optional) with user-friendly and graphical programming environment is prepared and the customers can arrange it.

The Smart Photo Sensor is the most ideal for a customer who requests a scene that the former photoelectric sensor was incapable to determine or simple preprocess that does not require high-quality image processing system.

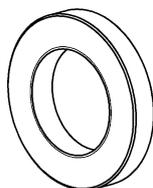
The Smart Photo Sensor supports RoHS restricting of the use of certain Hazardous Substances in electrical and electronic equipment.

2 Product Configuration

- SPS02 bodyx1
- Manualx1
- S-Mount Adapterx1



- Lens Locking Ringx1

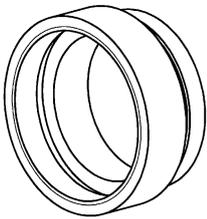




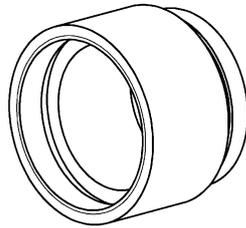
Smart Photo Sensor

3 Option

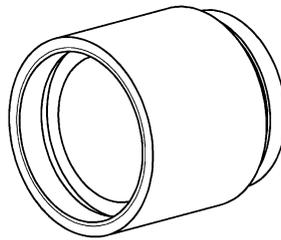
- Development Environment Visual Architect
- USB cable (TypeA – microB)
- Various of S-Mount Lens
Contact your dealer / distributor for details.
- Extension Tube for S-Mount Lens



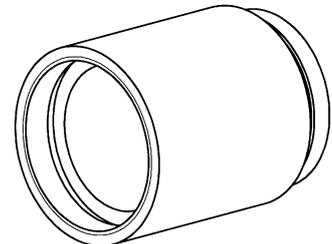
L=5mmx1



L=10mmx1

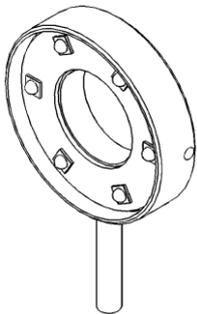


L=15mmx1



L=20mmx1

- LED Lamp

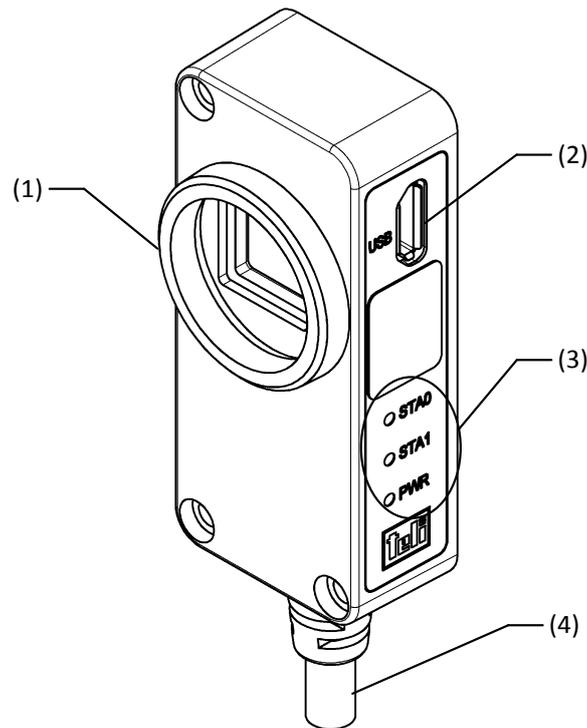


- Power Supply for LED Lamp



Smart Photo Sensor

4 Name of all parts



(1) Lens Mount

Attach the lens or the lens adapter according to the purpose of use.

(2) Micro-USB Type B Receptacle

Connector receptacle to connect with USB cable.

This port operates at USB2.0 high speed.

You can also transfer the image or set up parameter in real time via USB.

(3) LED Signal Light

- STA0 (Red) When setting "RED LED" block in Visual Architect, you can link LED display to any event.
- STA1 (Green) When setting "Green LED" block in Visual Architect, you can link LED display to any event.
- PWR (Orange) When you turn on power, it lights up.

(4) I/O cable for the power supply

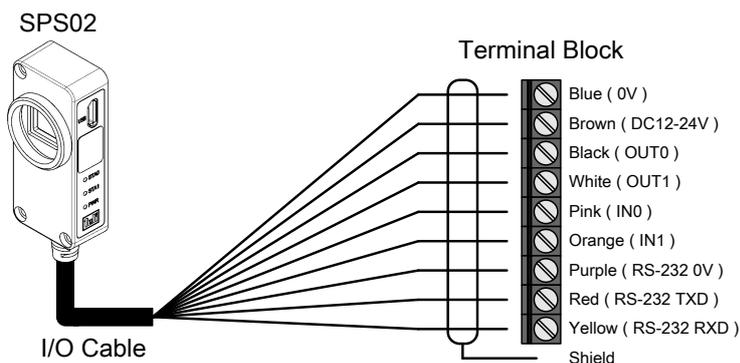
Direct cable for power and input / output signal, when stand-alone is operating, use this cable only.



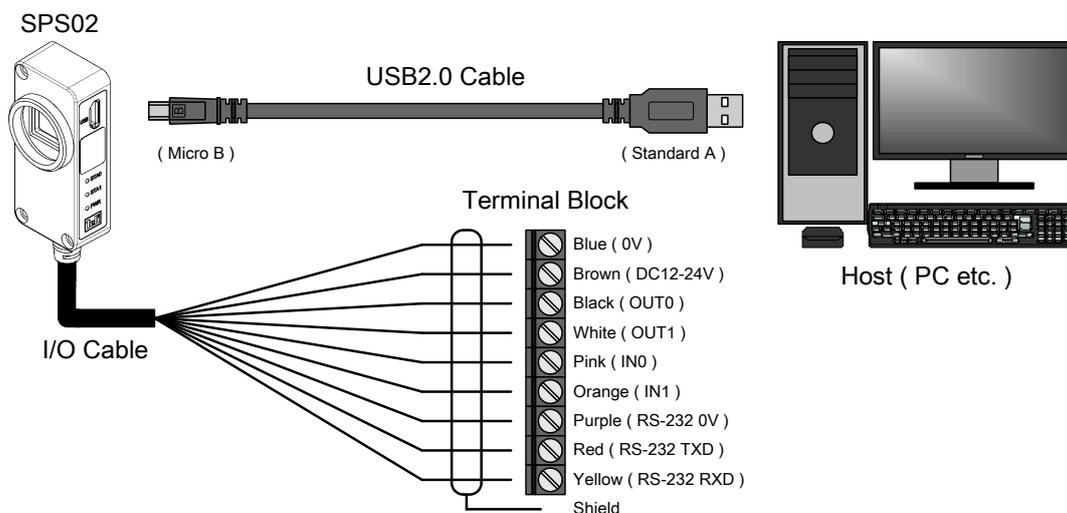
Smart Photo Sensor

5 Connection Example

- In the case of connect an I/O cable for the power supply to a terminal block.



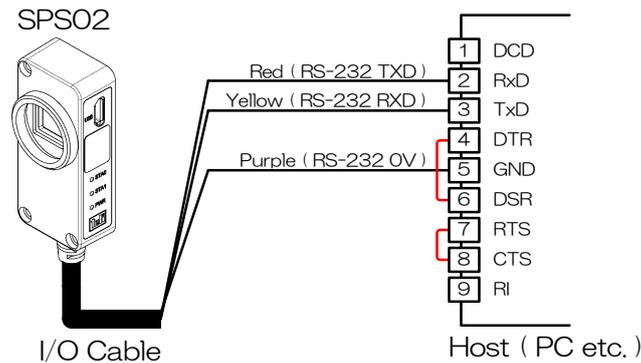
- In the case of connect an I/O cable for the power supply and a USB cable to a terminal block.



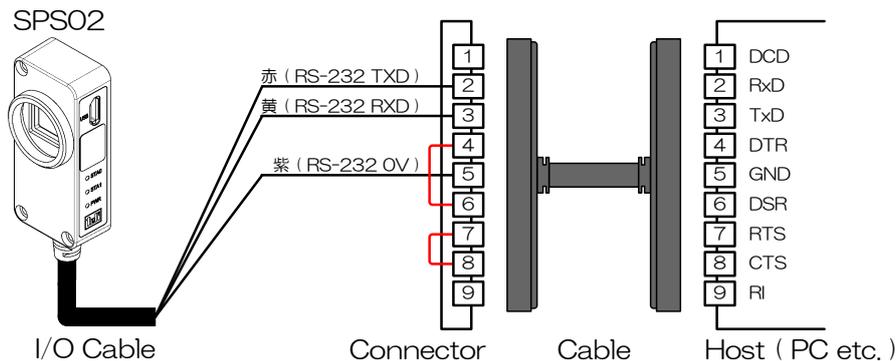


Smart Photo Sensor

- Example : RS-232 signals connection directly to the host



- Example : RS-232 signals connection to the host with commercial cable and connector



Notes on Connection:

- Please confirm the power supply of this product off when wiring of an I/O cable for the power supply. It causes the breakdown.
- When wiring of an I/O cable for the power supply, please confirm the combination of color and signal name carefully to avoid a wrong connection. It causes the breakdown.
- In the case that USB Cable is long or thin, input voltage may not satisfy specifications of the power supply voltage of this product by voltage drop. Please confirm it before use.
- Lost packets may occur by an electrical characteristic of the transmission line of using USB devices (USB Cable, Interface Card)

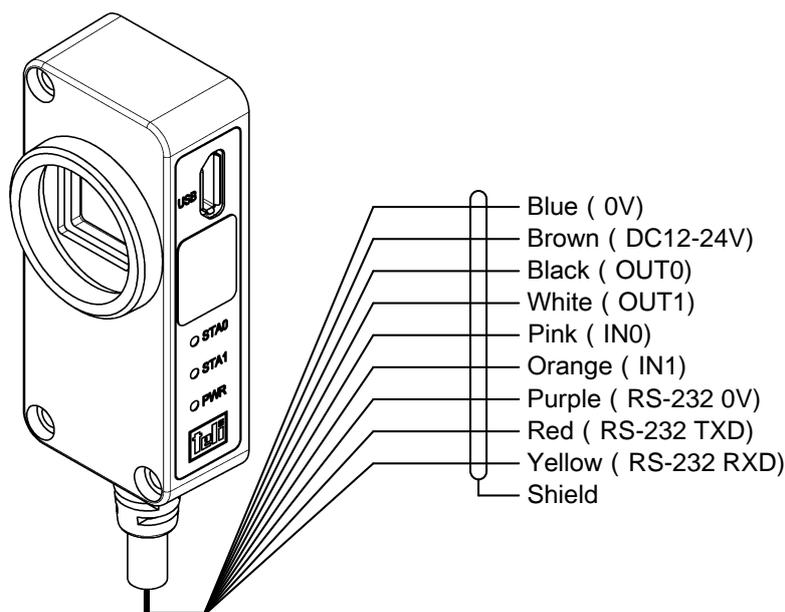
D4213658E



Smart Photo Sensor

6 Wiring

The tip of an I/O cable for the power supply is scattering. Please wire it with a terminal block or a connector.

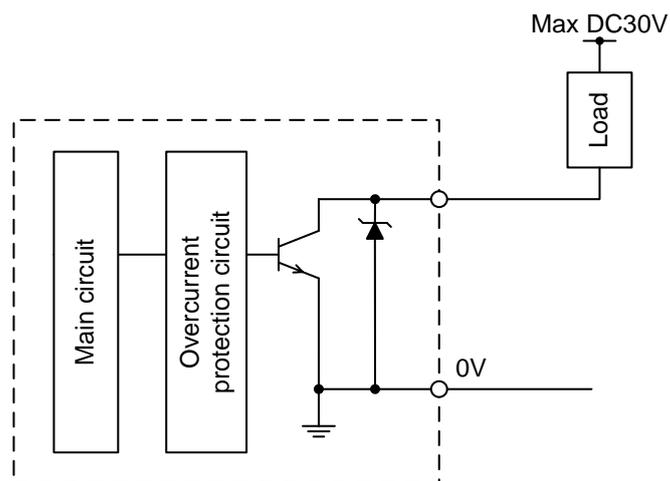


Color	Signal Name	Function	Size	Cable length	Bend Radius [Minimum]
Blue	0V	GND of the external power supply GND of the I/O Signal	AWG26	1[m]	44[mm]
Brown	DC12-24V	External Power Supply DC12~24V			
Black	OUT0	Signal Output			
White	OUT1	Signal Output			
Pink	IN0	Signal Input			
Orange	IN1	Signal Input			
Purple	RS-232 0V	GND of the RS-232			
Red	RS-232 TXD	TXD of the RS-232			
Yellow	RS-232 RXD	RXD of the RS-232			
—	Shield	Shield of the cable			

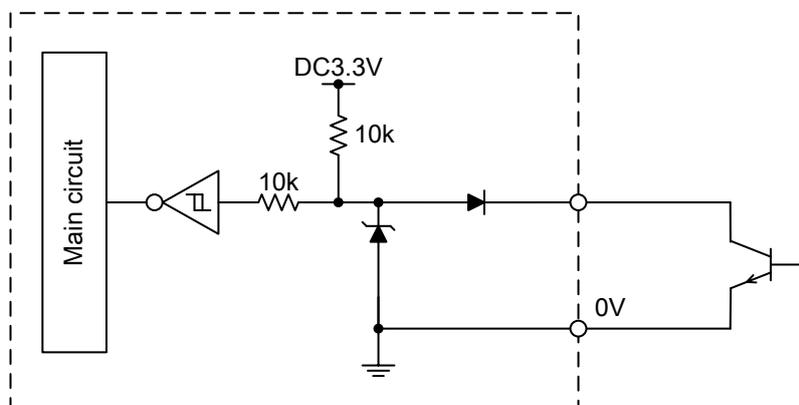


7 Input and Output Circuit

7-1 Output Circuit



7-2 Input Circuit





Smart Photo Sensor

8 Application Example

- Checking if all the parts are ready.
- Counting the number of the part.
- Positioning of the circuit board.
- Deciding the amount of liquid in the bottle.
- Checking the label.

9 Specifications

Imager	
Image Sensor	Type 1/2 CMOS sensor
Number of Effective Pixels	144 x 176
Cell Size	33.6 x 33.6[μm]
Sensing Area	4.8 x 5.9[mm]
Exposure Time	1 μ ~20ms
I/O Specification	
Output	2 Line NPN Open Collector Power Supply Voltage : 30V (maximum) Residual Voltage : 1V (maximum) Load Current : 100mA (maximum)
Input	2 Line ON Voltage : 0.5V (maximum) ON Current : 330 μ A (short-circuit) OFF Current : 50 μ A (maximum)
USB	USB2.0 High speed USB-Micro Type-B Receptacle
RS-232	TXD / RXD
Protection Circuit for GPIO	Output : Over Current Protection Input : Over Voltage Protection
LED Signal Light	STA0 : Red STA1 : Green PWR : Orange
Power Supply	I/O cable for the power supply: DC12~24V \pm 10%(ripple 10% or less) USB cable : DC5V \pm 5% (ripple 10% or less) If both an I/O cable for the power supply and a USB cable are connected, power is supplied from an I/O cable for the power supply.
Power Consumption	2.4W
Ambient Conditions	
Operation Temperature	0~40°C
Storage Temperature	-10~60°C
Operation / Storage Humidity	35~85%RH (no condensation)

D4213658E



Smart Photo Sensor

EMC condition	EMI : EN61000-6-4、 FCC Part 15 Subpart B Class A EMS : EN61000-6-2
Vibration Resistance	10~55Hz Double Amplitude 1.5mm Two hours for each XYZ direction
Shock Resistance	500m/s ² 6direction For each three times
Dimensions	22(W) x 50(H) x 12(D)[mm] (not including protrusion)
Mass (including 1meter cable)	About 56g
Lend Mount	M17 P=0.75

Notes on Heat Radiation:

The temperature of this product housing must be kept less than 60 °C.

Please provide sufficient heat radiation depending on your installation.

Notes on Heat Radiation:

The power consumption differs from an SPS Application you write on in this product. When using the SPS Application you arranged, please be sure about the influence of the heat under the condition and the environment you use.

Notes on Conformity of the EMC:

The adaptability of the safety standard of this product is assured in the condition of combination with the following parts:

- USB Cable U2C-MF20BK (ELECOM Co., Ltd)
- USB Connector Adaptor USA-MMC (Miyoshi Co., Ltd)

Please confirm the EMC compatibility of equipment and device.



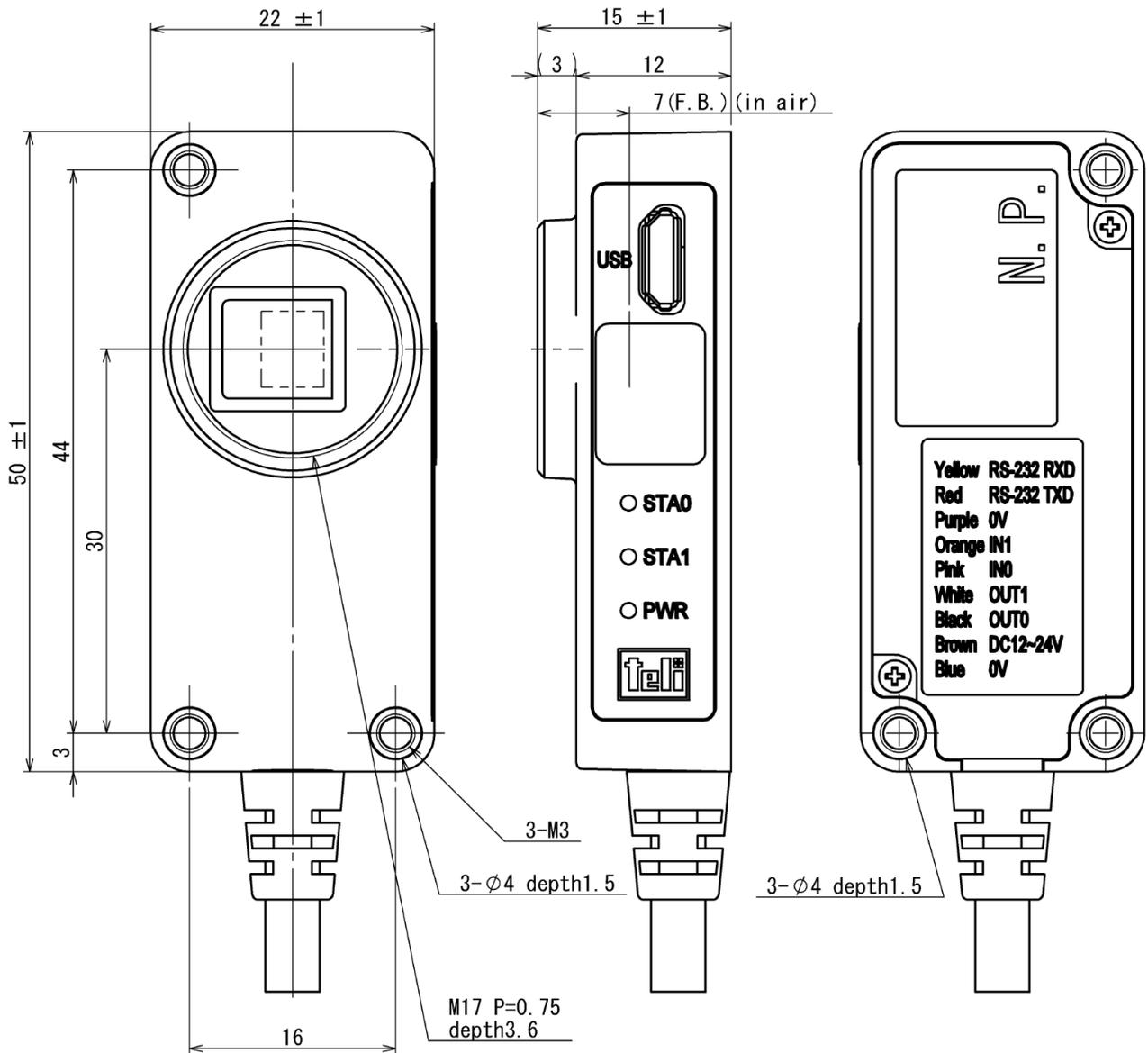
10 Related Materials

- SPS & Visual Architect Quick Start Guide
- SPS Visual Architect User Guide
- SPS Block Library Reference
- SPS Communication Manager Reference
- SPS Custom C/C++ Block API Reference
- SPS Custom CFPP API Block Reference
- SPS CFPP Code Reference



Smart Photo Sensor

11 Dimensions

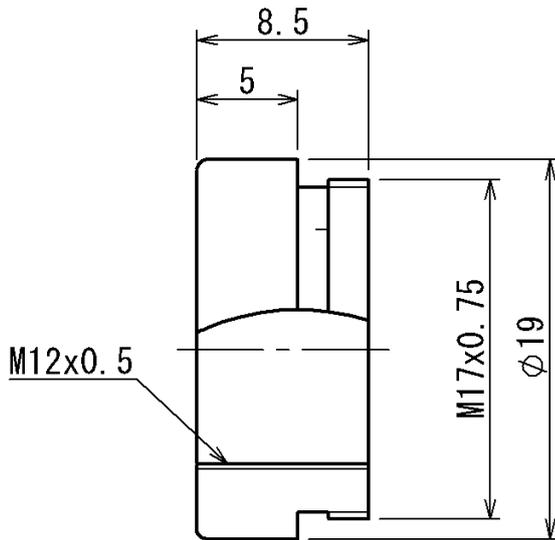


[mm]

D4213658E

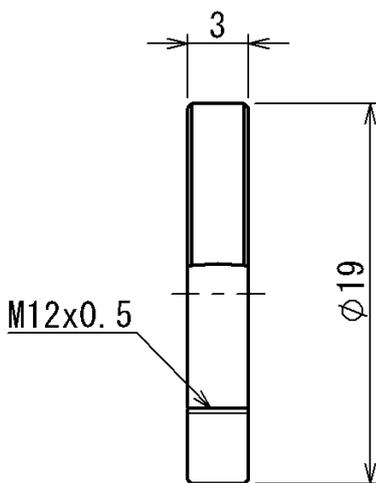


● S-Mount Adapter



[mm]

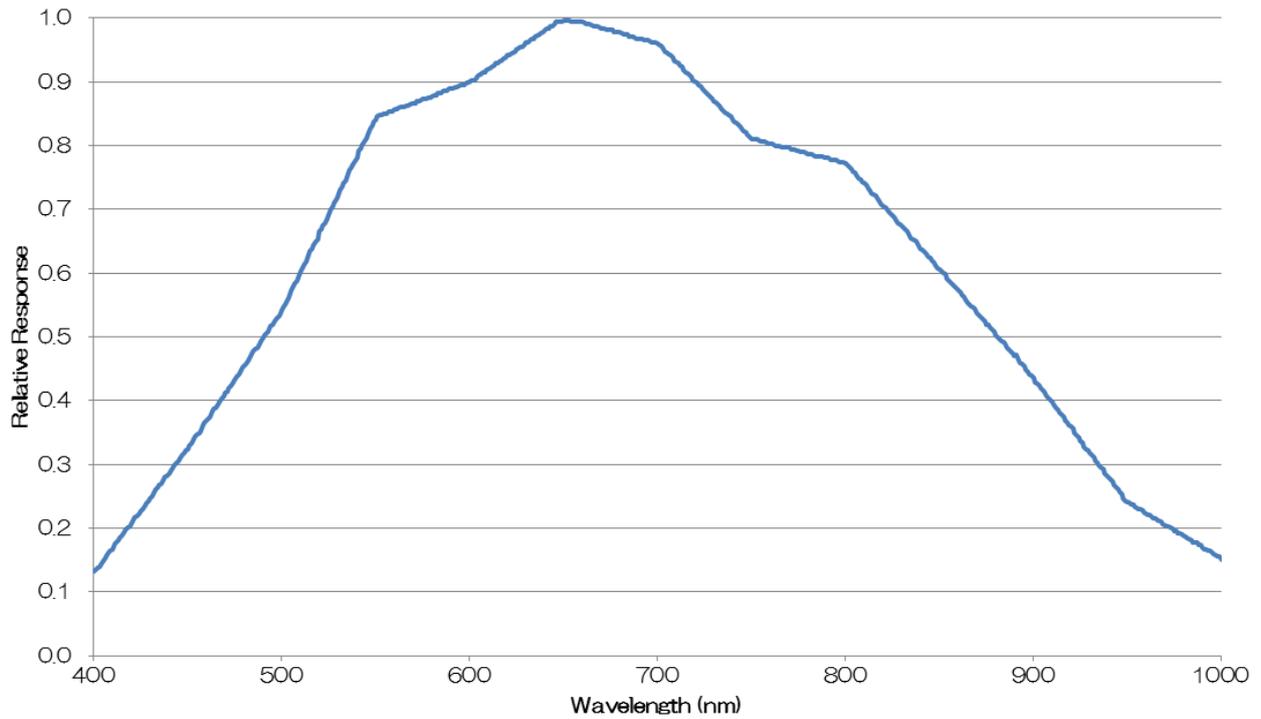
● Lens Locking Ring



[mm]



12 Spectral Response Example





13 Warranty Rules

13-1 Warranty term

Warranty term is 12 months after your purchase. We may assume the date of the purchase from our shipping date when the date is unidentified.

13-2 Limited Warranty

Free warranty is not applicable for the troubles, damages or losses caused by the cases of the followings, even if it is during the warranty term.

- (1) Natural exhaust, wear or degradation of a component parts.
- (2) Handling against the instructions and conditions described in the instruction manual.
- (3) Remodeling, adjustment and the part exchange. (including the opening of the enclosure box and the alteration)
- (4) Using the accessories not included with the product or our non-designated optional articles.
- (5) Damages caused during the transportation or deficiency of the handling such as drop or fall of the products after the products having been transferred to customers, leaving the products to corrosive environment such as sunlight, fire, sand, soil, heat, moisture, or an inappropriate storing method.
- (6) A fire, an earthquake, a flood, a lightning, or other natural disasters, pollution and a short circuit, abnormal voltage, excessive physical pressure, theft, other accident.
- (7) When connected to a product which is not recommended.
- (8) When connected to the power supply which is not suitable.
- (9) Forgery product, products which does not have proper serial number, products of which serial number is forged, damaged or deleted.
- (10) In the case defects are caused by malfunction or other problems resulting from unintended use of equipment or software etc. that are not specified.
- (11) All defects that happened after the expiration for a warranty term.



14 Repair

14-1 Repair methods

Exchange to a replacement or an equal function product.

14-2 Repair request methods

On the occasion of a repair request, please return the defective product with the failure situation report sheet to be filled out.

Please read the following instructions carefully.

- (1) Please return our product alone, taking out of your equipment in case that our product is installed to an equipment.
- (2) We are unable to return the information such as your own serial numbers, control number, the identification seal, if it is attached to the returned products. Please keep record before you return the product.
- (3) As the data saved in the product will not be kept after the repair, please take out data before return.
- (4) We are unable to accept the cancellation after the repair request by the customer's reason.
- (5) About the repair product shipping expenses, please bear the charges when you return the product to us. We bear the charges to you from us only for a warranty period.
- (6) We are unable to accept your request of a delivery date and time of the product return, or the delivery method.
- (7) We are unable to accept a trouble factor investigation, the request of the repair report.
- (8) We accept a repair of out of warranty product, if it is repairable.
- (9) The proprietary rights of the repair request products after the exchange repair belong to us.
- (10) The immunity from responsibility of the product is applied in the repair completion products.

In order to grasp the details of failure, please fill out the following information, and send us the defective product with this report sheet enclosed.

(1) Customer information

Company Name		Department	Your Name
Telephone number	E-Mail address		FAX number
Postal code number	Address		

(2) Return address Please fill out this information, if the return address is different from above address (1).

The offered personal information is not used for any purposes other than after-sale service, such as repair of a product and an inquiry, and the questionnaire of the improvement in customer satisfaction.
 Moreover, except for the case where it commissions "The offered personal information is not used for any purposes other than after-sale service, such as repair of a product and an inquiry, and the questionnaire of the improvement in customer satisfaction."
 Moreover, except for the case where it commissions within limits required for the above-mentioned purpose achievement, it does not indicate to a third party without a visitor's consent.
 We pay careful attention and manage a visitor's information."

(3) Before submitting your request to repair, please refer the following solutions to fix common problems.

*In any case of the following items, please perform in an environment that permits the maximal amount of safety.
 *When turning on/off power, follow the procedure as provided by the device and make sure that it is safe and does not interfere with operation.

1) LED (Orange) light on the side of the product does not turn on. Check → <input type="checkbox"/> Solid light <input type="checkbox"/> No light <input type="checkbox"/> Other
• Make sure that power and I/O cable and a USB cable are connected to the product correctly and power is supplied. *If both power and I/O cable and a USB cable are connected, power is supplied from an I/O cable for the power supply.
2) GPIO and RS-232 does not operate. Check → <input type="checkbox"/> Correct <input type="checkbox"/> Incorrect <input type="checkbox"/> Other
• Make sure that there is power and I/O cable breakage, and it is connected to your device correctly. • Please turn off this product once, switch on a power supply again after passing for a while, and confirm operation. • If you wrote on application to the product, re-write again and check operation.
3) A image is not output. Check → <input type="checkbox"/> Correct <input type="checkbox"/> Incorrect <input type="checkbox"/> Other
• Make sure that a USB cable are connected to the product correctly and power is supplied. • Please turn off this product once, switch on a power supply again after passing for a while, and confirm operation. • If you wrote on application to the product, re-write again and check operation.

(4) Failure situation

■ Accrual date Month: Day: Year:

Model name	Serial No.	Your dealer
		Purchase date Month: Year:
Condition of failure (Please specify symptoms of trouble.) _____		

As for the SPS application or the setting information that a customer saved, all data, the setting information and SPS application will be deleted in order for us to install our own test application when confirming the phenomenon.
 Also we doesn't do back-up of the data. Please understand and accept that we assumes no responsibility for the data in advance.

(5) From when

Unknown From the beginning After a while After environment was changed.
 (Others : _____)

(6) Occurrence frequency

Unknown It certainly occurs. It sometimes occurs. It occurs, after time passes.
 (Others : _____)

<For dealer use>

Reception date : Receipt No. : JOB No: Check :