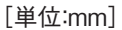


- 注1. 投光器と受光器の距離を500mmに設置し、受光器から250mmの位置で測定対象物を測定した場合。
ガラスエッジ位置測定モードの場合は、C0.1以上のガラス端面の検出が可能。(2値化レベル70%にて)
注2. 投光器と受光器の距離を100mmに設置し、受光器から50mmの位置で遮光した場合の理想直線に対する誤差の代表例。
(ZX-GT2840□□は、受光器から20mmの位置で測定)
注3. 投光器と受光器の距離を100mmに設置し、ZX-GTC□□に接続した際のアナログ出力のゆらぎ幅(±3σ)
注4. 投光器と受光器の距離を100mmに設置し、受光器から50mmの位置で半分遮光した場合の片側遮光値の変化。
(ZX-GT2840□□は、受光器から20mmの位置で測定)
注5. 標準モード使用時

ZX-GT28S11/41



(a)から(d)に記載されている他、本カタログ等記載の商品は自動車（二輪車含む。以下同じ）向けではありません。自動車を搭載する用途には利用しないで下さい。自動車搭載用商品については当社営業担当者にご相談ください。

*上記は適合用途の条件の一部です。当社のベスト、総合カタログ、データシート等最新版のカタログ、マニュアルに記載の保証・免責事項の内容をよく読んでご使用ください。

● **その他のお問い合わせ**
納期・価格・サンプル・仕様書は貴社のお取引先、または貴社担当オムロン販売員にご相談ください。
オムロン制御機器販売店やオムロン販売拠点は、Webページでご案内しています。

A(x) 2024年12月

OMRON

Model ZX-GT28(40)S11/41

Through-beam Sensor Heads for ZX-GTC□□ Smart Sensors

INSTRUCTION SHEET

Thank you for purchasing an OMRON ZX-GT28(40)S11/41 Through-beam Sensor Head for ZX-GTC□□ Smart Sensors. To ensure safety,read this Instruction Sheet carefully before using the Sensor, In addition, keep this Instruction Sheet in an easily accessible location for quick reference when needed.

TRACEABILITY INFORMATION:
Representative in EU:
Omron Europe B.V.
Wegalaan 67-69
2132 JD Hoofddorp,
The Netherlands
Manufacturer:
Omron Corporation,
Shiokoji Horikawa, Shimogyo-ku,
Kyoto 600-8530 JAPAN
Ayabe Factory
3-2 Narutani, Nakayama-cho,
Ayabe-shi, Kyoto 623-0105 JAPAN

The following notice applies only to products that carry the CE mark:
Notice:
This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.



© OMRON Corporation 2007 All Rights Reserved.

● Meanings of Signal Words

WARNING

Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

● Meaning of Alert Symbols

● Laser beam

Cautions to indicate potential Laser beam hazard.

● Do not disassemble

Indicates prohibition when there is a risk of minor injury from electrical shock or other source if the product is disassembled.

● Alert Statements / Messages d'alerte

WARNING / AVERTISSEMENT

Looking into the Outgoing light continuously may cause visual impairment. Do not look directly into the Outgoing light.

Caution-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Fixer en continu la lumière sortante peut provoquer des troubles visuels. Ne pas fixer directement la lumière sortante.

Attention-L'utilisation des commandes ou réglages ou l'exécution des procédures autres que celles spécifiées dans les présentes exigences peuvent être la cause d'une exposition à un rayonnement dangereux.

Do not disassemble this product. Doing so may cause exposure to the built-in light source which can damage eyes and skin. Never disassemble it.

Ne pas démonter ce produit. Cela pourrait provoquer une exposition à la source lumineuse intégrée, qui peut endommager les yeux et la peau. Ne jamais le démonter.

PRECAUTIONS FOR SAFE USE

- Please observe the following precautions for safe use of the product:
- 1.Do not use the product in environments where it can be exposed to inflammable/explosive gas.
 - 2.Do not disassemble, repair, modify, deform, or burn this product.
 - 3.Dispose of this product as industrial waste.
 - 4.Tighten the screw surely to fix the product.
 - 5.Use this product with the specified power-supply voltage.
 - 6.Install the product away from high voltage equipment and power equipment to secure the safety of the operation and maintenance.
 - 7.Use ZX-GTC serie as a Controller or it might cause malfunction or breakdown.
 - 8.Stop using the product and turn it off immediately, when you found something is wrong. Then, contact us.

PRECATIONS FOR CORRECT USE

- 1.Do not install the product in locations subjected to the following conditions:
 - Place with intense ambient light (Laser light, Arc welding light) and strong electromagnetic field.
 - Place where dust, oil droplets or condensation is attacked on the front filter.
 - Place where vibration or shock reaches.
 - Ambient temperature exceeds rated range.
 - Place where temperature change is rapid
 - Place where relative humidity exceeds range of 35-85%.
 - Place with corrosive or flammable gas.
 - Place with dust, salinity, and iron filings.
 - Place where sunlight strikes directly.
 - Place with spray of water, oil, and chemical.
- 2.Wiring
 - Do not wire Sensor Head-Controller cable near to the high voltage line and power line.Wiring them together or placing them in the same duct may cause induction, resulting in malfunction or damage.
 - Do not connect/disconnect the Senser Head from the Controller with power on, or it might get damaged.
- 3.Cleaning
 - Do not use paint thinner, benzene, acetone or kerosene to clean the Sensor Head. Doing so will melt the surface of the Sensor Head.
 - When dust and a fingerprint are stuck in the glass surface of the sensor head, a malfunction and a measurement error are caused.When big dust stuck, blow by a blower brush (for Camera Lenses). Do not blow by breath.When small dust and fingerprint stuck, wipe it up gently by the soft cloth (ex. Lens Cleaner) which moistened with a small amount of alcohol. And wipe it up by the soft cloth dried after that. Do not wipe it up hard. When the glass surface was damaged, you can't measure precisely (ex. Glass edge measurement).
- 4.Compatibility
 - A Sensor Head is compatible with a Controller, and can be used if purchased separately.
- 5.Warm-up
 - Wait ten minutes or more touse the product after power is on. Measurements might change gradually because the circuit is not steady immediately after turning on the power supply.

LASER SAFETY (ZX-GT28E11/41)
SÉCURITÉ LASER (ZX-GT28E11/41)

- Attention in handling
The visible laser light is emitted. Do not stare into the beam. Do not disassemble the product. Laser light is exposed.
- (1) Use this product as specified in this instruction sheet. Otherwise, you may be exposed to Hazardous laser radiation.
 - (2) Be careful not to expose your eyes directly to the laser radiation or indirectly to laser radiation reflected from mirror or shiny surfaces.
 - (3) To avoid exposure to hazardous laser radiation, do not displace nor remove the protective housing during operation, maintenance, and any other servicing.
 - (4) The user should return the product to OMRON for all repair and servicing.
 - (5) As for countries other than those of Europe, observe the regulation and standards specified by each country. For further details about laser safety, refer to Operation Manual.
- Note: Use of controls, adjustment, of procedures other than those specified herein may result in hazardous radiation exposure.
- Laser safety measures for laser devices are stipulated both in Japan and overseas. Here, five cases are described.
- (1) Usage in Japan
The JIS C6802:2014 standard stipulates the safety precautions that users must take according to the class of the laser product. The ZX-GT28(40)S11/41 is classified into class 1 defined by this standard.
- labeling on Laser Use
the ZX-GT28(40)S11/41 has the following explanatory label on the side of the sensors.

クラス1レーザ製品

- (2) USA
When a laser device is exported to the USA, it falls under the laser regulations of the FDA(Food and Drug Administration). The ZX-GT28(40)S11/41 is classified as a class-II laser by 21CFR1040, and it has already been registered with the CDRH(Center for Devices and Radiological Health). Ask your OMRON representative for details.
- Technical standards have been provided with the ZX-GT28(40)S11/41. When exporting to the USA, refer to the following illustration and replace the label with the caution label.
It is assumed that the ZX-GT28(40)S11/41 will be incorporated into a final system device. When incorporating the ZX-GT28(40)S11/41, comply with the following technical standards:
US Federal Law 21 CFR 1040.10 and 1040.11.

FDA Certification

This laser Product complies with 21 CFR 1040.10 and 1040.11
OMRON Corporation
Shiokoji Horikawa,Shimogyo-ku,
Kyoto 600-8530 JAPAN
Place of manufacture
AYABE Factory,OMRON Corp.
Manufactured in

FDA Laser Aperture Label

AVOID EXPOSURE
Laser radiation is emitted from this aperture

FDA Caution Label

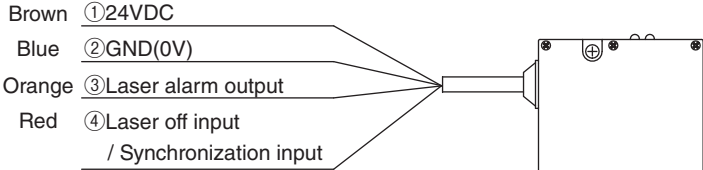
CAUTION
LASER RADIATION
DO NOT STARE INTO BEAM
PEAK POWER 200 mW
PULSE DURATION 10 μs
WAVE LENGTH 650 nm
CLASS II LASER PRODUCT

EU Label

CLASS 1 LASER PRODUCT

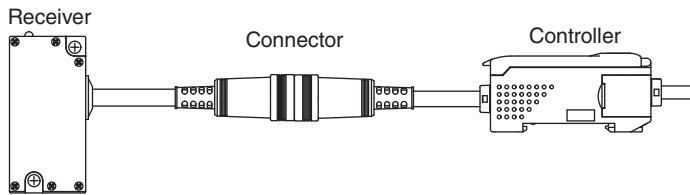
■Connection

Emitter



- ①24VDC
This is for power supply.
The wire is also used as common I/O terminal with PNP type.
- ②GND(0V)
This is for GND(0V).
The wire is also used as common I/O terminal with NPN type.
- ③Laser alarm output
This is alarm output for the laser deterioration.
When the laser begins to deteriorate, the output turns on.
- ④Laser off input/Synchronization input
The laser do not emit when this turns ON.
Synchronization mode is available when this wire connects with synchronization output of ZX-GTC11/41. The influence of the ambience light can be reduced.
Laser off is also available with synchronization mode with the wire short-circuited to 0V (For the PNP type: 24V)

Receiver



Please connect the receiver with the connector of Controller ZX-GTC11/41
Please fix the connector to avoid influence by vibration.

■Reting/Performance

Item	Set Model	ZX-GT28S11	ZX-GT2840S11	ZX-GT28S41	ZX-GT2840S41
Emitter Model	ZX-GT28E11			ZX-GT28E41	
Receiver Model	ZX-GT28R				
Light source	Visible-light semiconductor Laser diode (wavelength:650nm, JIS Class1, IEC/EN Class1, FDA Class II)				
Measurement width	28mm				
Sensing distance	0~500mm	40mm	0~500mm	40mm	
Min. sensing object	Dia0.5mm *1	Dia0.2mm	Dia0.5mm *1	Dia0.2mm	
Linearity	±0.1%F.S. *2				
Resolution	10μm(number of process values to average:16) *3				
Measurement period	Stability mode:1.5ms, Speedy mode:0.5ms				
Temperature drift	±0.01%F.S/°C *4				
Indicator (Emitter)	Laser on indicator (green), Laser alarm indicator (red)				
Indicator (Receiver)	Beam alignment (green)				
Laser off input	On: Short-circuited with 0V terminal or 1.5V or less			On: Short-circuited to supply voltage within 1.5V or supply voltage	
/Synchronization input	Off: Open (leakage current 0.1mA max.)			Off: Open (leakage current 0.1mA max.)	
Laser deterioration output	NPN Open collector output 30VDC 20mA max. Residual voltage 1.2V or less			PNP Open collector output 30VDC 20mA max. Residual voltage 2V or less	
Current consumption (Emitter)	30mA max.				
Power supply voltage (Emitter)	24VDC +10%,-15% Ripple (p-p) 10% max.				
Dielectric strength	1000VDC at 50/60Hz for 1min				
Insulation resistance	20MΩ at 500VDC				
Ambient luminance (Emitter)	Incandescent lamp: 3000lx max.				
Ambient luminance (Receiver)	Incandescent lamp: 1000lx max. *5				
Ambient temperature	Operating:0 to +40℃, Storage:-15 to +50℃ (with no icing or condensation)				
Ambient humidity	Operating/Storage:35 to +85% (with no condensation)				
Vibration (resistance)	10 to 150Hz Half-amplitude of 0.75mm for 80 minutes each in X,Y, and Z directions				
Protective structure	IEC60529 IP40				
Cable length	2m				
Material	Case: Aluminum die-cast, Front cover: Glass				
Weight (paced state)	Approx.550g	Approx.570g	Approx.550g	Approx.570g	
Accessories	Instruction manual, Laser safety labels				

*1. Measurement condition
(F.S.=28mm:Measurement width)

The distance between an emitter and a receiver: 500mm, A sensing object: at 250mm from a receiver
The glass with C0.1 can be detected by Glass edge mode. (At Binary level 70%)

*2. Linearity is given as the typical value deviated from the ideal straight line of measurement value.

Measurement condition

The distance between an emitter and a receiver: 100mm, A sensing object: at 50mm from a receiver, ZX-GT2840S11/41: A sensing object: at 20mm from a receiver.

*3. Indicates the amount of fluctuation ($\pm 3\sigma$) in the linear output when connected to the ZX-GTC11/41.

*4. Measurement condition

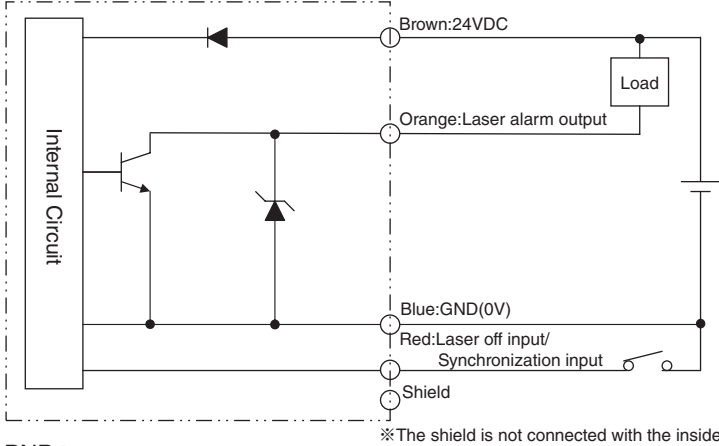
One-side interruption

The distance between an emitter and a receiver: 100mm, A sensing object: at 50mm from a receiver, ZX-GT2840S11/41: A sensing object: at 20mm from a receiver.

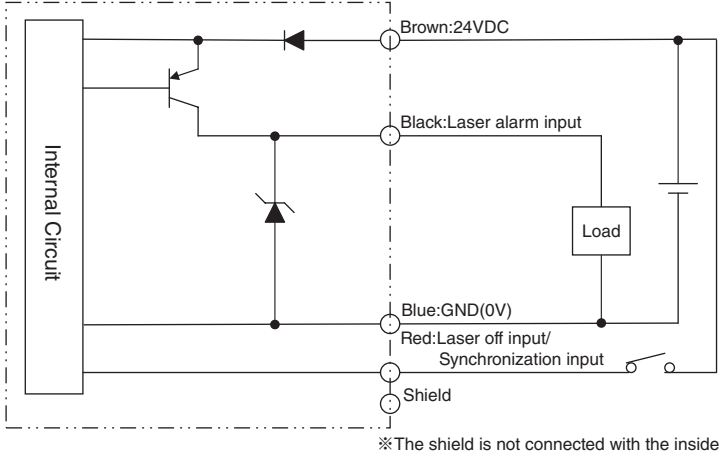
*5. At stability mode

■Input/Output stage circuit

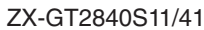
NPN type



PNP type



ZX-GT28S11/41



M: Months of production 1-9 for Jan.-Sep., X for Oct., Y for Nov., Z for Dec.
YY: Year of manufacture (last 2 digits of A.D.)

DⓅ May, 2025