

OMRON

型 E3ZS-T81A

单光束安全传感器

使用说明书

感谢您选择欧姆龙产品。
使用时，请务必遵守以下内容。
·由具备一定电气知识的人员使用。
·使用本品前，请仔细阅读本说明书，充分了解产品。
·为了您的方便，请妥善保管好本说明书。



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使用时的承诺事项

- 保证内容
- 1. 保证期限
本产品的保证期限为购买后或在指定地点交货后一年。
- 2. 保证范围
在上述保证期限内由于本公司的责任造成所购商品故障的情况下，本公司负责免费对故障产品进行维修或更换。但故障由以下原因引起时，则不属于保证对象范围：
a) 在本公司产品说明书所述条件·环境·使用方法以外的情况下使用而引起故障
b) 非本公司原因引起故障
c) 非本公司进行的改造和修理引起故障
d) 进行了本公司记录使用方法以外的使用
e) 货品出厂时，当时的科学技术水平无法预见可能引起问题时
f) 其他由于天灾、灾害等非本公司负责的因素
同时，上述保证仅指本公司产品本身，由于本公司产品故障所引起的损害排除在保证对象之外。

- 责任限定
因本产品引起的特别损失、间接损失、派生损失、逸失利益及事业损失等情况，不论其要求是基于合约责任、保证责任、过失责任或者过失责任中的任何一个，本公司一概不承担责任。

- 适用用途、条件
- 1. 当本产品与其他产品组合使用时，客户应事先确认适用规格·导则或者规则等。
此外，将本产品用于客户的系统、设备、装置时，客户应自己确认其适用性。
关于本产品对于客户用途的适用性，本公司不承担责任。商品目录中记载的应用实例仅作参考之用，应在确认机器、装置的机能和安全性之后，再进行使用。
- 2. 用于下述场合时，请与本公司销售人员商谈，确认产品规格书，并应选择额定·性能有一定余地的产品，同时应当考虑各种安全对策，即使发生故障，也能将危险降低到最小程度的安全回路等。
a) 屋外的用途、潜在化学污染或受到电气妨害的用途、或者在商品目录、使用说明书等中没有记载的条件及环境下使用。
b) 原子力控制设备、焚烧设备、铁道·航空·车辆设备、医用设备、娱乐机械、安全装置以及必须符合行政机关和个别业界特殊规定的设备。
c) 可能危及生命、财产的系统·机械·装置
d) 煤气、水道、电气的供给系统及24小时连续运转系统等需要高信赖的设备。
e) 其他，以上述的 a) ~ d) 为基准，需要高度安全性的用途。
- 3. 当用户将本产品用于与人身财产安全密切相关的场合时，应做到事前明确系统整体的危害性，为确保安全性应采用特殊的冗余设计，同时按照本公司产品在系统中的适用目的，做到配套的配电·设置等。
- 4. 请务必遵守各项使用注意事项和使用禁止事项，避免发生不正确使用以及由第三者造成的损害。

- 规格的变更
商品目录·使用说明书等中记载的商品规格以及附属品，可能因改善或者其他事由，需要进行变更。请在与本公司营业担当商谈之后，确认本产品的实际规格。

- 适用范围
上述内容仅限于日本国内的交易。
日本国外的交易及使用注意事项请与本公司营业担当接洽。

安全上的注意

●警告表示的意思

警告 如果不正确处理，则有可能对人身造成轻度或中度伤害，严重情况下，甚至会导致重伤或死亡。此外，还可能造成重大财物损失。

●图记号的意思

表示一般禁止。

●警告表示

警告

将单光束安全传感器 E3ZS作为确保人体安全的安全机器，或者作为安全系统的一部分使用时，请务必连接安全控制器 F3SX系列后使用。

- 将 E3ZS 连接在 F3SX 上使用，满足安全种类 2 (EN954-1) 的必要条件。
- E3ZS 不连接在 F3SX 上使用，是安全种类 1 (EN954-1)。
- 关于 F3SX 的额定和规格，请确认 F3SX 的用户手册 (SCHG-705)。

警告

受光器的模式选择输入线连接在 0V 时，遮光时会变为 ON (Dark ON)，不能构筑安全系统。所以必须将模式选择输入线连接在 DC24V 上、入光时 ON (Light ON) 的状态下使用。

请一直保持本产品与机械危险领域的安全距离。请按照相关的规格 (EN999)

对于确认机器检知能力的测试物体，请使用直径 18mm、有效长 200mm 以上的不透明物体。透明物体不能检测。

请不要使用反射型的构成。可能会导致不能检测、甚至可能受重伤。

请设置成不受光泽面影响的状态。否则可能会导致不能检测、甚至可能受重伤。

多台使用时，请务必设置成不会发生相互干涉的状态。否则可能会导致不能检测、甚至可能受重伤。

本产品不能对从危险领域飞来的物体进行人体保护。请另行设置遮蔽物或围墙。

进行接线时，请务必切断电源。若在通电中进行接线的话，可能会触电。

请不要连接交流电源或额定以上的直流电源。可能会造成传感器破裂、燃烧、或者触电事故等危险。
供给电源请务必依据如 EMC 或电气机器安全规格等那样的、使用 E3ZS 的国家的规定及基准进行。例如，请确认是否有依据 EN60742 的二重绝缘必要条件、EU 的 EMC 指令或低电压指令。

安全上的要点

- 请在充分阅读本使用说明书后，正确使用本产品。
- 与安全控制器 F3SX 组合使用时，请正确连接在 B1 模块上使用。
- 不能使负载短路。请务必不要通过超过额定的电流。
请不要供给逆极性电压。E3ZS 导线的接线路径中请隔离高压线、动力线。或者请将单独配管使用作为原则。
- 请不要撕去传感器上贴着的标签 (黄色)。会发生不能满足规格的情况。
- 请确认连接导线以不紧绷、有一定的余裕、并且不妨碍作业人员或物体移动的状态接线。
- 请不要分解、修理、改造 E3ZS。
- 请作为产业废弃物进行废弃处理。

使用上的注意

- 请不要在以下环境中使用。
·日光直射、强光照的场所
·湿度高或易结露的场所
·含腐蚀性气体、引火性气体、爆炸性气体的场所
·有烟雾或微粒等可能引发品质低下的场所
·超过规格规定的振动或冲击能传送到传感器的场所
·使用水、油、药品的场所
- 请不要在水中使用 E3ZS。
- 延长导线必须使用截面积 0.3mm² 以上、长度 100m 以内的电线。
- 请注意安装部的紧固强度不要超过 0.5N·m。此外，如果不充分紧固，在有振动的情况下容易松动。
- 清洁时请不要使用稀释剂、汽油、及丙酮类。
- 电源规格

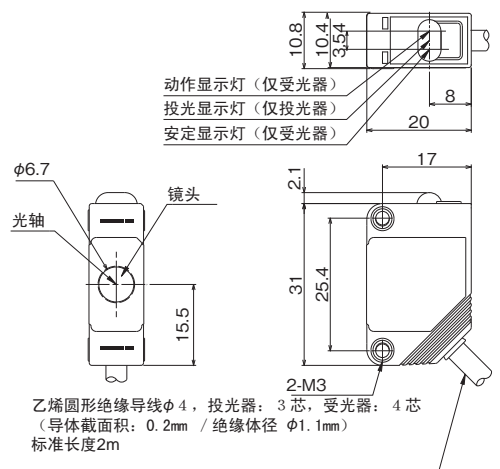
组合的直流电源请使用以下 UL 认证品。

(1) 符合 UL508 的限制电压电流回路
满足以下条件、用绝缘变压器的 2 次侧卷线做电源的回路
·最大电压 (无负载时)：30Vrms (42.4V 峰值) 以下并且
·最大电流：① 8A 以下 (包括短路时) 或者
② 利用保持下表额定值的回路保护机器 (保险丝等) 限制的场所

无负载电压 (V 峰值)	最大额定电流 (A)
0~20	5.0
超过 20、但 30 以下	100 峰值电压值

(2) 符合 UL1310 的 Class2 电源单元
(3) 符合 UL1585 的 Class2 变压器做电源的最大电压 30Vrms (42.4V 峰值) 以下的回路 (Class2 回路)

外部尺寸图

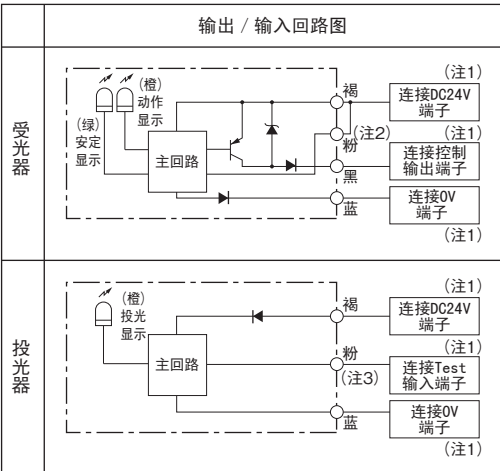


额定 / 性能

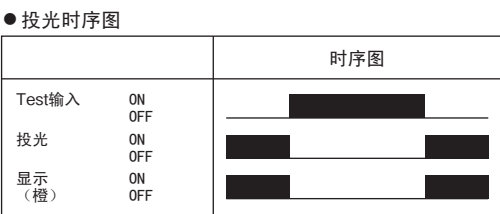
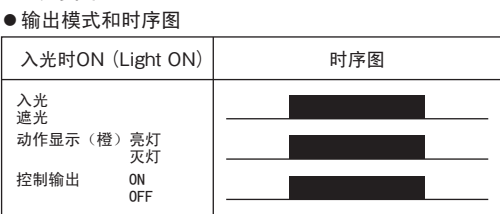
检出方式	对射型
连接控制器	F3SX 系列
电源电压	DC12~24V ±10%、波动 (p-p) 10% 以下 (作为安全种类 2 (EN954-1) 的安全机器或者安全系统的一部分使用时，请连接 F3SX)
有效开口角	±5° (3m 的条件下)
消费电流	投光器：15mA 以下 受光器：20mA 以下
检出距离	0.2~3m
标准检出物体	φ18mm 以上的不透明体
响应时间	1.0ms (但是，E3ZS 单体) (连接 F3SX 使用时，根据 F3SX 的不同型号，响应时间不同。具体请参照 F3SX 的用户手册。)
控制输出	PNP 晶体管输出负载电流：100mA 以下 输出残留电压 1V 以下 (负载电流未达 10mA 时) 输出残留电压 2V 以下 (负载电流 10~100mA 以下时) (因导线延长的电压下降除外) (作为安全种类 2 (EN954-1) 的安全机器或者安全系统的一部分使用时，请连接 F3SX。)
关闭元件的类别	DC-13 (电磁负载的控制)
Test 输入 (投光器)	E3ZS
	DC22.5V~DC24V：投光 OFF (源电流：3mA 以下) 开放或者 0~2.5V：投光 OFF (漏电流：0.1mA 以下) (作为安全种类 2 (EN954-1) 的安全机器或者安全系统的一部分使用时，请连接 F3SX。)
电源复位时间	100ms
使用周围照度	受光面光照度 白炽灯：3,000lx 以下 太阳：10,000lx 以下
周围温度	动作时：-10~55℃、保存时：-10~70℃ (但是，没有结冰、结露)
周围湿度	动作时：35~85%RH、保存时：35~95%RH (但是，没有结冰、结露)
绝缘电阻	20MΩ 以上 (DC 500V)
耐电压	AC 1,000V、50/60Hz、1min.
耐振动	耐久 10~55Hz 复振幅 1.5mm X、Y、Z 各方向 2h
	动作极限 10~55Hz 复振幅 0.7mm X、Y、Z 各方向 50min.
耐冲击	耐久 500m/s ² (约 50G) X、Y、Z 各方向 3 回
	动作极限 100m/s ² (约 10G) X、Y、Z 各方向 1,000 回
保护构造	IEC 规格 IP67
光源	红色发光二极管
显示	投光器：橙 / 投光显示 受光器：绿 / 安定显示、橙 / 动作显示
保护回路	电源·输出逆接保护、负载短路保护
重量 (包装状态)	约 120g (1 套)
适用规格	E3ZS 单体使用时 EN954-1 (种类 1) IEC60947-5-3 (PDF-D) UL508 E3ZS 连接在 F3SX 上使用 IEC61496-1 Type2 ESPE IEC61496-2 Type2 AOPD EN954-1 (种类 2) UL508 UL61496-1 Type2 ESPE UL61496-2 Type2 AOPD
附属品	使用说明书

回路图

- PNP 输出 输出模式：入光时 ON (Light ON)

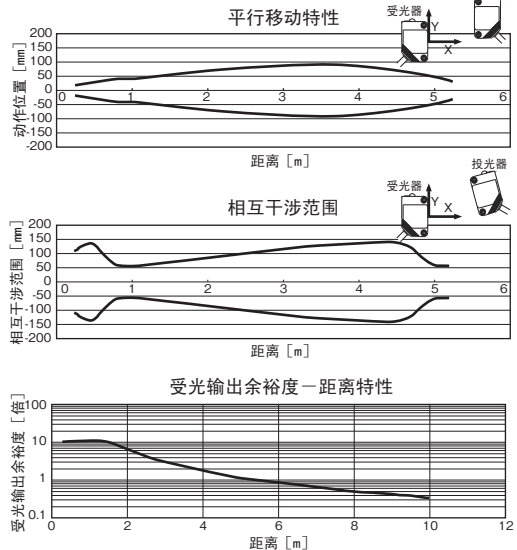


时序图



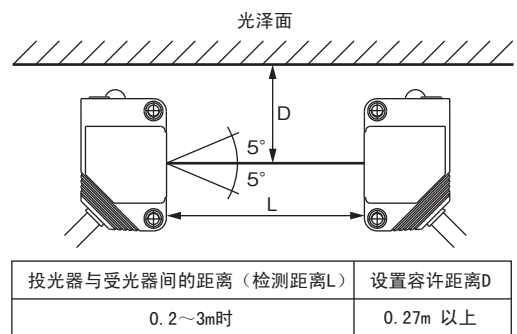
*F3SX 每 20ms 会进行自我诊断。

特性图



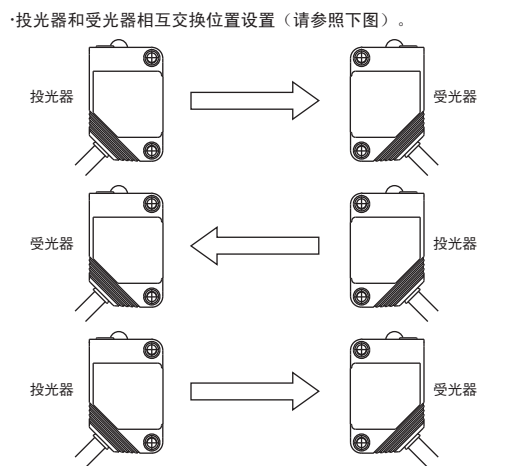
光泽面的影响

如果有金属制的墙壁或地板、天花板、工件等光泽面 (反射率高的面)，就需要保证充分的距离，使其免受反射光的影响。请离开光泽面 D 以上距离，按照以下所示进行设置。



相互干涉的影响

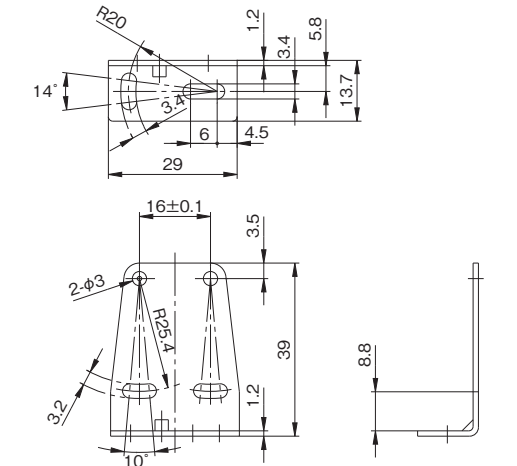
为了避免单光束安全传感器之间的相互干涉，设置时请考虑以下项目。



※使用多个单光束安全传感器时，请务必确认不会发生相互干涉。

附件 (另售)

- 金属安装配件 (型 E39-L104)



■ 制造商
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电话：(86) 21-5050-9988

■ 技术咨询
欧姆龙 (中国) 有限公司
地址：中国上海市浦东新区银城中路 200 号中银大厦 2211 室
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技术咨询热线：800-820-4535
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OMRON Corporation

OMRON

Model **E3ZS-T81A**

SINGLE BEAM SAFETY SENSOR

INSTRUCTION SHEET

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.

Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.

TRACEABILITY INFORMATION:
 Representative in EU: Omron Europe B.V. Wegalaan 67-69, 2132 JD Hoofddorp, The Netherlands
 Manufacturer: Omron Corporation, Shiohji Horikawa, Shimogyo-ku, Kyoto 600-8530 JAPAN
 Shanghai Factory No.789 Jinji Road, Jingjiao Export Processing District, Pudong New Area, Shanghai, 201206 CHINA

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.

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SUITABILITY FOR USE

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the product in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this instruction sheet.

Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.

Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PERFORMANCE DATA

Performance data given in this manual is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your OMRON representative at any time to confirm actual specifications of purchased product.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

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Precautions on Safety

Meanings of Signal Words



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.

Meanings of Alert Symbols



Indicates prohibited actions.

Alert Statements



When the single beam safety sensor model E3ZS is used as a safety device or a part of safety systems for ensuring safety of personnel, be sure to use it with the safety controller model F3SX series.

- When the E3ZS is used with the F3SX, the requirements of the Category 2 (EN954-1) are satisfied.
- When the E3ZS is used without the F3SX, it corresponds to the Category 1 (EN954-1).
- Read the F3SX users manual (SCHG-705) about the rating or other specifications of the F3SX.

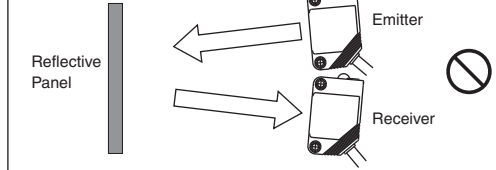


If the mode selection input line of the receiver is connected to 0V, the output turns ON when light is interrupted (Dark ON), which no longer configures the safety system. Be sure to connect the mode selection input line to 24V DC to make the sensor output ON when light is incident (Light ON).

Always maintain a safe distance between the E3ZS and a hazardous part of a machine. Be sure to refer to the related standards (EN999) for the calculation of safety distance.

Use an opaque test rod with 18mm in diameter and 200mm or greater in effective length to check the detection capability. The E3ZS cannot detect transparent materials.

Do not use the E3ZS in a reflective configuration, otherwise detection may fail.



Do not install the E3ZS in a location where it can be affected by wall reflections to avoid detection failure, which may result in serious injury.

When using multiple sets of E3ZS, arrange them to prevent mutual interference. Failure to do so may cause the sensor not to detect, resulting in serious injury.

The E3ZS does not offer protection to the operator's body from projectiles existing in the hazardous area. Proper means of mechanical guarding must be provided to ensure protection from these potentially hazardous projectiles.

Wiring must be done while the power is turned OFF. Doing it with the power ON may cause an electric shock.

Do not connect the E3ZS to an AC or DC power supply with higher voltage than nominal DC24V. Otherwise the sensor may explode, burn, or cause electric shock. The power supply must conform to regulatory requirements and standards, regarding EMC and electrical equipment safety, of the country where the E3ZS is installed. For example, the power supply must fulfill EN60742 requirements for double insulation and must conform to EMC Directive and Low Voltage Directive in EU.

Precautions for Safe Use

- Read this instruction sheet thoroughly to understand before using the product.
- When used in combination with the F3SX safety controller, make sure that the B1 module is properly connected.
- A load must not be shorted. A load must not be used with current higher than the rating. Do not apply the reversed supplied voltage. Be sure to route the E3ZS cable separated from high-potential power line or through an exclusive conduit.
- Do not remove the label (yellow) from the sensor. Doing so may violate the specifications.
- Wire the cable so that it has some slack and does not prevent personnel or object passage. Allow some leeway for the wires and do not tight the wires when connection cable to F3SX, and confirm that any cable may not block the movements of workers or objects.
- Do not disassemble, repair or modify the E3ZS.
- Be sure to dispose of the E3ZS as industrial waste.

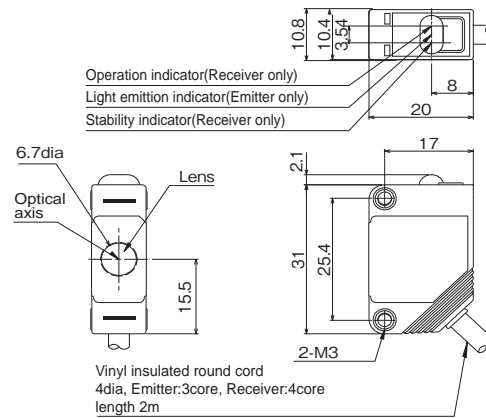
Precautions for Correct Use

- Do not install the E3ZS in the following environments:
 - Areas exposed to intense interference light, such as direct sunlight;
 - Areas with high-humidity where condensation is likely to occur;
 - Areas exposed to corrosive, flammable or explosive gases;
 - Areas in the presence of substances, such as heavy smoke or particulate matter, that may deteriorate product quality;
 - Areas exposed to vibration or shock levels higher than specification provisions;
 - Areas where the product may come in direct contact with water, oil, and chemicals;
- Do not install the E3ZS in water.
- To extend the cable, use a wire of cross-sectional area 0.3mm² or more. However do not extend it more than 100m.
- Be careful not to exceed a tightening torque of 0.5 Nm. Also, if it is not tight enough, vibration may cause it to come loose.
- When cleaning, avoid using thinner, benzene or acetone.
- Power supply specifications
 For combined DC power supply, use the following UL certified products:
 (1) Limited voltage current circuit that conforms to UL508
 Circuit with a power supply that consists of a secondary coil of an insulated transformer that satisfies the following conditions:
 -Maximum voltage (with no load): 30Vrms (42.4V peak) or less, and
 -Maximum current : ① 8A or less (including short-circuit), or ② When limited by a circuit protector (fuse, etc.) with the ratings shown in the table below

No-load voltage (V peak)	Maximum current rating (A)
0 to 20	5.0
More than 20, up to 30	1.00 Peak voltage value

- Class 2 power supply unit that conforms to UL1310
- Circuit (class 2 circuit) with 30Vrms (42.4V peak) or less of maximum voltage, and which uses a class 2 transformer that conforms to UL1585 as its power supply

DIMENSIONS

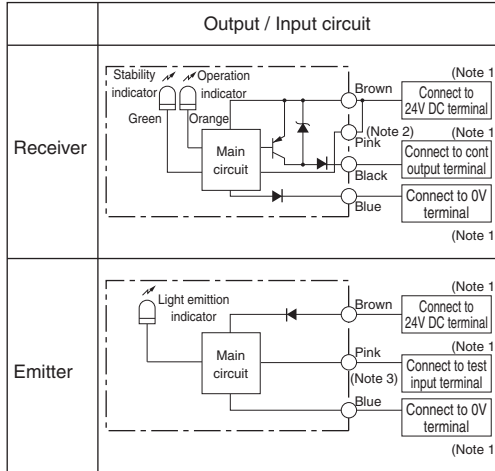


RATINGS / PERFORMANCE

Detection method		Through beam type
Controller		Model F3SX series
Power supply voltage		12 to 24V DC ±10% (ripple p-p 10% max) When the E3ZS is used as a part of safe apparatus or safe systems Category2(EN954-1), use it with F3SX.
Operating angle		±5°(at 3m)
Current consumption		Emitter : 15mA max. Receiver : 20mA max.
Sensing distance		0.2~3m
Standard object		Opaque object of φ18mm or more.
Response time		1.0ms (E3ZS only) (Response time depends on the F3SX. For the details, see the users manual of the F3SX.)
Control output		Transistor output PNP, load current 100mA max Output residual voltage of 1V or less (when load current is less than 10mA) Output residual voltage of 2V or less (when load current is from 10 to 100mA) (except for voltage drop due to cable extension) When the E3ZS is used as a part of safe apparatus or safe systems Category2(EN954-1), use it with F3SX.
Utilization categories for switching elements		DC-13 (Control of electromagnets)
Test Input (Emitter)	E3ZS	22.5 to 24V DC : Emitting OFF (Source current : 3mA max) Open or 0 to 2.5 V DC : Emitting ON (Leakage current : 0.1mA max) When the E3ZS is used as a part of safe apparatus or safe systems Category2(EN954-1), use it with F3SX.
Power reset time		100ms
Ambient illumination		Illumination intensity Incandescent lamp : 3000 lx max. Sunlight : 10000 lx max.
Ambient temperature		Operating : -10~55°C, Storage : -10~70°C (not freezing or condensation)
Ambient humidity		Operating : 35~85% RH, Storage : 35~95% RH (not freezing or condensation)
Insulation resistance		20MΩ or more (by 500V DC megger)
Dielectric strength voltage		1000V AC, 50/60Hz for 1 min.
Vibration resistance	Durability	10~55 Hz, 1.5mm double amplitude, each X, Y, Z direction, 2 hours
	Operation limit	10~55 Hz, 0.7mm double amplitude, each X, Y, Z direction, 50 min.
Shock resistance	Durability	500m/s ² (approx. 50G), each X, Y, Z direction for 3 times
	Operation limit	100m/s ² (approx. 10G), each X, Y, Z direction for 1,000 times
Enclosure ratings		IEC standard IP67
Light source		Red LED
Indicators		Emitter : Orange / Light emission Receiver : Green / Stability, Orange / Operation
Circuit protection		Output short-circuit and power supply reverse polarity
Weight		Approx. 120g (1set)
Applicable standards		When using E3ZS by itself: EN954-1 (Category 1) IEC60947-5-3 (PDF-D) UL508 When E3ZS is connected to F3SX: IEC61496-1 Type2 ESPE IEC61496-2 Type2 AOPD EN954-1 (Category 2) UL508 UL61496-1 Type2 ESPE UL61496-2 Type2 AOPD
Accessories		-Instruction sheet

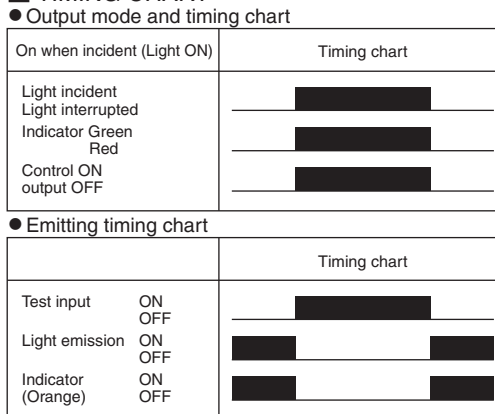
CIRCUIT DIAGRAM

- PNP output
- Output mode : ON when incident (Light ON)



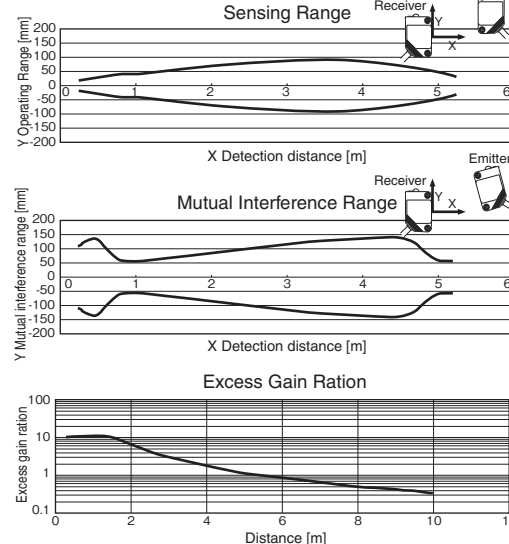
- (Note 1) When the E3ZS is used as a part of safe apparatus or safe systems Category2(EN954-1), connect to the B1 module of the F3SX. Do not connect to the other modules.
 -For the details, see the users manual of the F3SX.
 (Note 2) Be sure to connect the "Mode selection input" to 24V DC terminal.
 (Note 3) When the E3ZS is used without being connected to F3SX, test input should be connected to 0V.

TIMING CHART



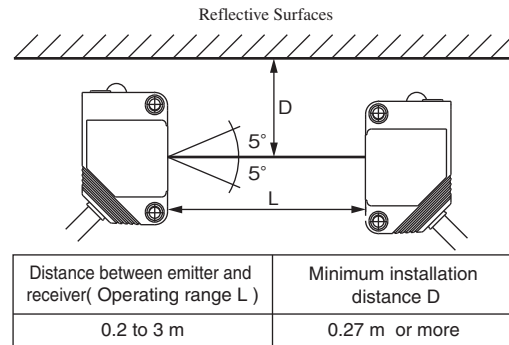
*The F3SX executes a periodic self-diagnosis every 20 ms.

ENGINEERING DATA



INFLUENCE OF REFLECTIVE SURFACES

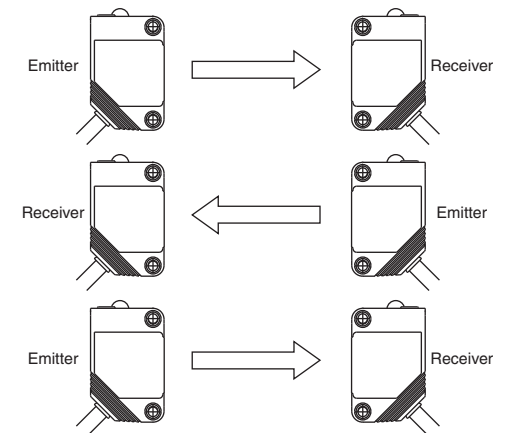
Install the E3ZS with minimum distance D (given below) away from reflective surfaces (highly reflective surfaces) such as metal walls, floors, ceilings, and work pieces



INFLUENCE OF MUTUAL INTERFERENCE

When installing two or more E3ZSs to each other, considerations must be made to prevent mutual interference.

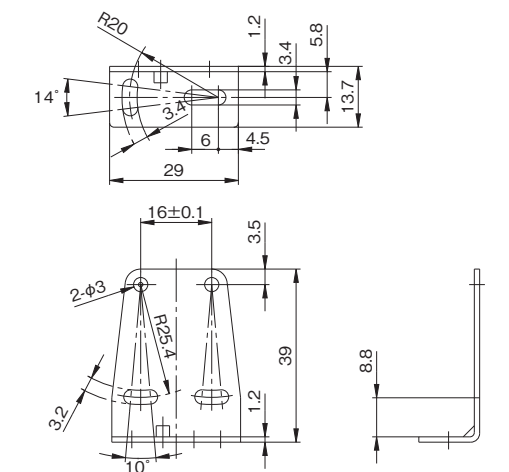
- Install so that any E3ZSs emit in the opposite directions (See below).



- Install a light interrupting wall in between sensors.
 - Install the E3ZSs facing away from the one another to eliminate mutual interference.
- Note : When using multiple sets of E3ZSs, be sure to confirm that mutual interference is not occurred.

ACCESSORY (OPTIONAL)

- Mounting Bracket (Model E39-L104)



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