

レーザ変位センサ センサヘッド

取扱説明書



A black Omron ZP-LS photoelectric sensor with a cable attached. The label on the sensor includes the Omron logo, the model number ZP-LS, and various safety and certification symbols (CE, triangle with exclamation mark, and a crossed-out trash can).

オムロン株式会社
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警告 傷を負ったり、万一の場合には重傷や死亡に至るおそれがあります。また、同様に重大な物的損害をもたらすおそれがあります。

安全を確保する目的で直接的または間接的に人体を検出する用途に本製品は使用できません。
人体保護用の検出装置として本製品を使用しないでください。

分解しないでください。分解すると、レーザ光がもれ出し視力障害を起こすおそれがあります。

ZP-LS300 ☐
ZP-LS600 ☐

 **LASER RADIATION**
DO NOT STARE INTO BEAM
OUTPUT:10mW PULSE DURATION:0.5ms
WAVELENGTH:660nm
CLASS 2 LASER PRODUCT
IEC 60825-1:2014

レーザー投光中心
光源:赤色レーザー(660nm)

レーザー投光中心
光源:赤色レーザー(660nm)

ZP-LS600□

Figure 1 illustrates the dimensions for mounting holes on two different plate sizes. The left diagram shows a plate with a top width of 28 and a right width of 47.5. The right diagram shows a plate with a top width of 35 and a right width of 66. Both diagrams specify the positions of mounting holes (2-M3) and reference planes (取付基準面).

Model ZP-LS□□

OMRON

Sensor Head for Laser Displacement 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:

Importer in EU: Omron Europe B.V.
Wegalaan 67-69
NL-2132 JD Hoofddorp,
The Netherlands

Manufacturer: Omron Corporation,
Shiokoji Horikawa, Shimogyo-ku,
Kyoto 600-8530 JAPAN

The following notice applies only to products that carry the CE mark. Notice:

In a residential environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

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PRECAUTIONS ON SAFETY

● Meaning 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.



WARNING

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purpose.



To safely use laser products



WARNING

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

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

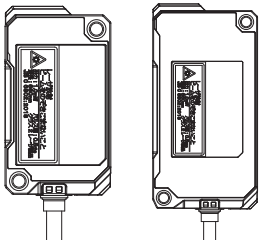
Do not disassemble this product. Doing so may cause exposure to the built-in light source which can damage eyes and skin. Never disassemble it.



Laser safety measures for laser equipment are stipulated by the country of use. Follow the instructions described below categorized in six cases.

•Usage in Japan

The JIS C6802:2018 standard stipulates the safety precautions that users must take according to the class of the laser product. This product is classified into class 2 defined by this standard. A JIS C 6802:2018 warning label is attached to the side of this product.



ZP-LS025□
ZP-LS050□
ZP-LS100□

ZP-LS300□
ZP-LS600□

•Usage in U.S.

This product is subjected to the U.S. FDA (Food and Drug Administration) laser regulations. This product is classified into Class 2 by the IEC 60825-1:2014 standard according to the regulations of Laser Notice No.56 of the FDA standard. This product is already reported to CDRH (Center for Devices and Radiological Health). Accession Number: 2420972-000

When using a device equipped with the product in the U.S., attach an FDA certification label and a Warning label near the sensor mounted on customer equipment.



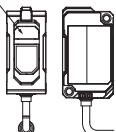
•Usage in Canada

This product is classified into Class 2 by the IEC60825-1:2014 standard.

When using a device equipped with the product in Canada, attach Warning labels near the sensor mounted on customer equipment.

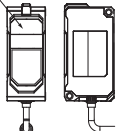


Center of laser projection
Light source
Red Laser (660 nm)



ZP-LS025□
ZP-LS050□
ZP-LS100□

Center of laser projection
Light source
Red Laser (660 nm)



ZP-LS300□
ZP-LS600□

•Usage in Europe

This product is classified into Class 2 by the EN60825-1:2014+A11:2021 standard.

When using a device equipped with the product in these countries, attach a Warning label near the sensor mounted on customer equipment.



•Usage in countries other than U.S., Canada, China and Europe

This product is classified into Class 2 by the IEC60825-1:2014 standard.

When using a device equipped with the product in these countries, attach a Warning label near the sensor mounted on customer equipment.



Precautions for Safe Use

- Never use this product with AC power supply. Otherwise it may explode.
- Before turning on the product's power, make sure that the supply voltage does not exceed the maximum power supply voltage.
- When attaching or detaching the sensor head, amplifier slave unit, or communication unit, be sure to turn off the power to the amplifier master unit. If you do this while the power is on, it may cause a malfunction.
- Do not connect to any amplifier unit other than the dedicated amplifier unit ZP-L3□□□.
- Do not use the product if the case is damaged.
- If you notice an abnormal condition such as a strange odor, extreme heating of the unit, or smoke, immediately stop using the product, turn off the power, and consult your dealer.
- Always turn off the power of the unit before connecting or disconnecting cables.
- Burn injury may occur. The product surface temperature rises depending on application conditions, such as the ambient temperature and the power supply voltage. Attention must be paid during operation or cleaning.

Precautions for Correct Use

- Do not install in the following locations:
 - Locations where the ambient temperature exceeds the rated temperature range.
 - Locations subject to sudden temperature changes (where condensation will form).
 - Locations where the relative humidity is below or above 35% to 85%.
 - Locations where there are corrosive or flammable gases.
 - Locations where there is dust, salt, or iron powder.
 - Locations where the device will be subject to direct vibration or shock.
 - Locations where there is strong scattered light (laser light, arc welding light, ultraviolet light, etc.)
 - Locations exposed to direct sunlight or next to a heater.
 - Locations where there is splashing or spraying of water, oil, or chemicals.
 - Locations where there is a strong electrical or magnetic field.
- Do not pull the cord too hard.
- Tightening torque for the mounting hole is 0.5 N·m (M3 screw).
- This product cannot be used as a detection device for human body protection.
- Do not attempt to disassemble, deform by pressure, incinerate, repair, or modify this product.
- After wiring and before turning on the power, check whether the power supply is correct, whether there are any incorrect connections such as load short circuits, and whether the load current is appropriate. There is a risk of malfunction due to incorrect wiring, etc.
- When changing settings, please check safety by stopping the device, etc.
- The cables must be less than 30 m in total length for amplifier units. To extend the cable from the sensor head, an optional extension cable (XS3W-M4□-R/ XS3W-M4□-PR) must be used.
- After turning on the power supply, allow to stand for at least 10 minutes before use. The internal temperature are unstable immediately after the power supply is turned on and attempting measurement may result in inconsistent measurement values.
- Do not use organic solvents (e.g. paint thinner and alcohol) for cleaning. Otherwise optical properties and protective structure may deteriorate.

- Dispose in accordance with applicable regulations.

Package contents

Sensor Head, Instruction sheet (this sheet), Compliance sheet, FDA certification label, Laser Warning labels, Sensor head fixing screw (2 pieces)*1
*1. ZP-LS025□/ ZP-LS050□/ ZP-LS100□ includes M3×30 mm, ZP-LS300□/ ZP-LS600□ includes M3×35 mm.

Environment

Ambient temperature: -10 to 50°C
Relative humidity: 35 to 85% (with no condensation)
Indoor use
Altitude: Max. 2,000 m
Pollution Degree 3
Degree of protection: IP67

Ratings

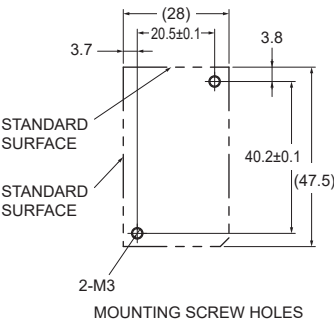
The power for this product is Supplied from an amplifier unit (ZP-L3□□□) only. The power for amplifier unit (ZP-L3□□□), you must use DC power supplies that satisfy the "Class 2" requirements.

Connection Method

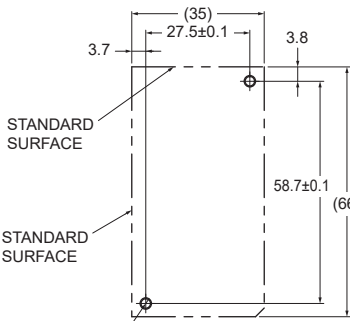
This product should be connected to an amplifier unit (ZP-L3□□□) or extension cable (XS3W-M4□-R/XS3W-M4□-PR).

Installation method

Attach slave devices with M3 screws.
Tightening torque of the screws is 0.5 N·m.
The mounting dimensions are shown below.



ZP-LS025□
ZP-LS050□
ZP-LS100□



ZP-LS300□
ZP-LS600□

[mm]

Conformance to EU Directives

This sensor complies with EN standards as follows:

- EN61326-1
- Electromagnetic environment : Industrial electromagnetic environment (EN/IEC 61326-1 Table 2)
- While receiving electromagnetic interference, the voltage/current output might vary within ±3% of full scale.

Relevant Manual

Man.No.	Model	Manual name
Z495	ZP-LS□□□/ ZP-L3□□□	ZP Series Laser Displacement Sensor User's Manual

Suitability for Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

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 PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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