

Model ZS-HLDS60/HLDS150

Sensor Head for Smart Sensor ZS-HLDC□□

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
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:
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 2005 All Rights Reserved.

PRECAUTIONS ON SAFETY

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

● Alert Statements in this Sheet / 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 or modify this product.
3. Be sure to make sure that locking mechanisms are locked before use.
4. Dispose of this product as industrial waste.

PRECAUTIONS FOR CORRECT USE

1. Do not install the product in locations subjected to the following conditions:
 - Reflection of intense light (such as other laser beams or electric arc-welding machines)
 - Presence of dust, oil droplets or spray on the filter on the front of the Sensor Head
 - Presence of corrosive or flammable gases
 - Direct vibration or shock
2. Pre-installation Checks
 - The product cannot accurately measure the following types of objects: (transparent objects, objects having an extremely low reflection factor, objects smaller than the spot diameter, objects with a large curvature, excessively inclined objects, etc.)
3. Wiring
 - Avoid wiring the cable between the Sensor Head and Sensor Controller including this product near high voltage lines and power lines. Wiring them together or placing them in the same duct may cause induction, resulting in malfunction or damage.
 - Before connecting/disconnecting the Sensor Head, make sure that the Smart Sensor is turned OFF. The Smart Sensor may break down if the Sensor Head is connected or disconnected while the power is ON.
4. 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.
 - To remove dust particles, use a blower brush.
 - To remove stubborn dirt, wipe gently with a soft cloth moistened with a small amount of alcohol.
5. Compatibility
 - The Sensor Head is compatible with the Sensor Controller, and can be used if purchased separately.
6. Influence of external light
 - Do not install a sensor head under the condition that strong light.
 - When a target is glossy, the target might reflect another light such as fluorescent from ceiling into the sensor head, which might cause malfunction. In this case, prevent the light from being incident into the sensor head.

LASER SAFETY / SÉCURITÉ LASER

● Handling Precautions

The ZS-HLDS60/HLDS150 emits a visible laser beam. Do not stare directly into the laser. Make sure that the laser beam path is terminated. A non-reflective matte painted surface is ideal at the end of the laser beam path. If specular objects are present in the laser beam path, make sure that they are prevented from reflecting the laser beam. When used without an enclosure, make sure the laser path from eye level is avoided. Caution-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

● Specifications

| Item | Model | ZS-HLDS60 | ZS-HLDS150 |
|------------------------------------|----------------|---|--|
| Optical system | | Diffuse reflection | Diffuse reflection |
| Measuring center distance | | 600mm | ±1500mm |
| Measuring range | | ±350mm | ±500mm |
| Light source | | Visible semiconductor laser(wavelength 650nm, 1mW max., JIS Class2, IEC/EN Class2, FDA Class2) | |
| Beam diameter (*1) | | 0.3×16mm(at 500mm) | 1.5×40mm(at 1500mm) |
| Linearity (*2) | | ±0.07%F.S.(250 to 750mm) ±0.1%F.S.(750 to 950mm) | ±0.2%F.S. |
| Resolution (*3) | | 8μm(at 250mm), 40μm(at 600mm) | 500μm(at 1500mm) |
| Temperature characteristic (*4) | | | ±0.01%F.S./°C |
| Sampling cycle (*5) | | | 110μs |
| Indicators | NEAR indicator | Lit near measuring center distance, and nearer than measuring center distance inside the measuring range Blinks when the measurement target is outside of the measuring range or when the received light amount is insufficient | |
| | FAR indicator | Lit near measuring center distance, and further than measuring center distance inside the measuring range Blinks when the measurement target is outside of the measuring range or when the received light amount is insufficient | |
| Operating ambient illumination | | Illumination on received light surface 1000 lx or less (incandescent light) | Illumination on received light surface 500 lx or less (incandescent light) |
| Ambient temperature | | | Operating: 0 to +50°C, Storage: -15 to +60°C (with no icing or condensation) |
| Ambient humidity | | | Operating and storage: 35% to 85% RH (with no condensation) |
| Degree of protection (*6) | | | IP66 |
| Vibration resistance (destructive) | | 10 to 150 Hz, 0.35-mm half amplitude 80 min each in X, Y, and Z directions | |
| Shock resistance (destruction) | | 150mm/s ² , for 3 times each in X, Y and Z directions | |
| Materials | | Case: aluminum die-cast, front cover: glass | |
| Cable length | | 0.5 m, 2 m | |
| Weight | | Approx. 800 g | |
| Accessories | | Laser label(6 for Warning labels, 1 for FDA), Ferrite core (4 pcs), Insure Lock (2 pcs), Instruction Sheet | |

*1 Defined as 1/e2 (13.5 %) of the center optical intensity in the measurement center distance (effective value). The beam diameter is sometimes influenced by the ambient conditions of the workpiece such as leaked light from the main beam.

*2 This is the error on the measured value with respect to an ideal straight line. In the diffuse reflection mode, the standard workpiece is white aluminum/ceramic. Linearity may change according to the workpiece.

*3 This is the "peak-to-peak" displacement conversion value of the displacement output in the measuring center distance when the number of samples to average is set to 128, and the measuring mode is set to the high-resolution mode. In diffuse reflection mode, the standard workpiece is white aluminum ceramics. Minimum resolution is 0.25μm.

*4 This is the typical value obtained in the measuring center distance when the sensor and workpiece are fixed by an aluminum tool.

*5 This value is obtained when the measuring mode is set to the high speed mode.

*6 Please inquire about IP67.

(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. This product is classified into Class 2 defined by this standard.

(2) Usage in US
When this product is installed in a device and exported to the U.S., it is subject to the US.FDA(Food and Drug Administration)laser regulations. This product is classified into Class 2 by the IEC60825-1:2014 standard according to the provisions of laser Notice No. 56 of the FDA standard. This product is already reported to CDRH (Center for Devices and Radiological Health). Accession Number :0622389-006

Because this product is made a texturing, we can not attach an FDA certification label on the main body, so we enclose it in the packing box. When exporting a device equipped with the product to the US., attach an FDA certification label. Please make sure that the label are affixed at the correct locations as indicated.

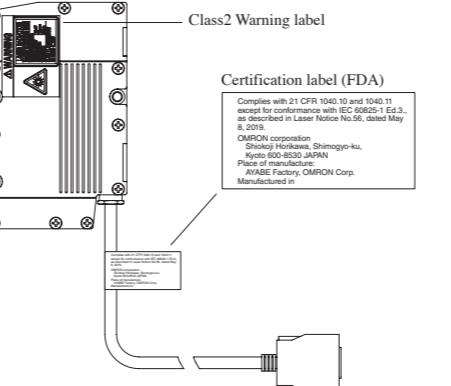
(3) Usage in China
This product is classified into class 2 by the GB/T 7247.1-2024 standard. When using in China, warning labels must be replaced by Chinese ones supplied with the product.

(4) Usage in Canada
The ZS-HLDS60/150 is Classified into Class 2 by the IEC 60825-1:2014 standard. Le ZS-HLDS60/150 est classé dans la classe 2 selon la norme IEC 60825-1:2014.



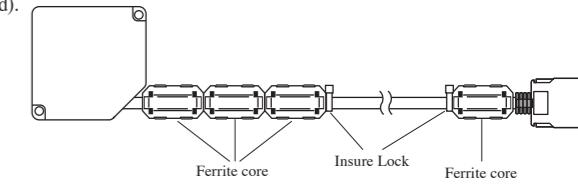
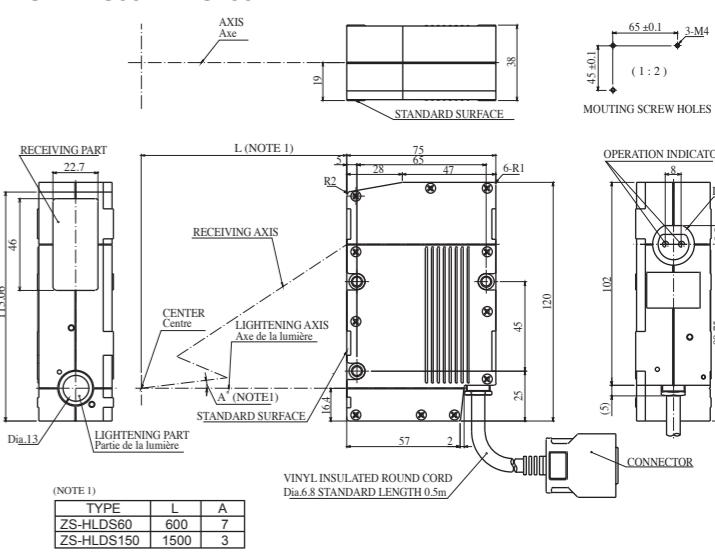
(5) Usage in a country other than Japan, U.S., China and Canada
For countries other than Japan, U.S., China and Canada, warning labels must be replaced by suitable for the area ones supplied with the product. EN60825-1 is provided for products used in Europe, and the content of this standard differs. The ZS-HLDS60/150 is categorized as Class 2 device as stipulated in EN 60825-1:2014+A11:2021.

● Place to affix the label



● Attaching the ferrite core

Attach three ferrite cores (provided with the Sensor Head) to the Sensor Head side of the Sensor Head cable, and attach one ferrite core to the connector side of the Sensor Head cable. If the ferrite core comes loose from the cable, fasten the ferrite core in place with the Insure Lock (supplied).

● Dimensions
ZS-HLDS60/HLDS150

● Serial number

The serial number "SSSSMYY" on the label on the product indicates the date of manufacture.
SSSS: identification number
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.)

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.

OMRON Corporation **Industrial Automation Company**
Kyoto, JAPAN Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.
Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.
4388 Alexandra Road, #08-01/02 Alexandra
Technopark, Singapore 119968
Tel: (65) 6835-3011 / Fax: (65) 6835-3011

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-6023-0333 / Fax: (86) 21-5037-2388

OMRON Canada Inc.
1675 Trans Canada Route Suite 105,
Dorval, Quebec H9P 1J1, Canada