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Keyence lr-z setting guide

Keyence lr-z series setting guide. Keyence lr-tb5000c setup.

1 LR-ZB*N/P Series IM E Self-contained CMOS Laser Sensor LR-ZB F N/P Series Instruction Manual Read this manual before using the product in order to achieve maximum performance. Keep this manual in a safe place after reading it so that it can be used at any time. The following symbols alert you to important messages. Be sure to read these messages carefully. * The laser classification for FDA (CDRH) is implemented based on IEC60825-1 in accordance with the requirements of Laser Notice No.50. , Certification and Identification Label • When using this product in the U.S. affix the Certification and Identification Label included in the package of this product as shown on the right. (Affix this label in a location that is not splashed with oils or chemicals.) , UL Certification This product is an UL/C-UL Listed product. • UL File No. E301717/Category NRKH, NRKH7/Enclosure Type 1 (UL50) Be sure to consider the following specifications when using this product as a UL/CUL Listed Product.

- Use a power supply with Class 2 output defined in NFPA70 (NEC: National Electrical Code). • Power supply/ Control input/ Control output shall be connected to a single Class 2 source only. • Install the product at the ambient temperature 45°C or below when using with following optional cable. (OP-73864, OP-73865, OP-87396, OP-85499, OP-85500, OP-85497, OP-87399, OP-85584, OP-85585) . CE Marking KEYENCE Corporation has confirmed that this product complies with the essential requirements of the applicable EC Directive, based on the following specifications. Be sure to consider the following specifications when using this product in a member state of European Union. z EMC Directive (2004/108/EC) • Applicable standard EMI: 60947-5-2, Class A/EMS: 60947-5-2 These specifications do not give any guarantee that the end-product with this product incorporated complies with the essential requirements of EMC Directive. The manufacturer of the end-product is solely responsible for the compliance on the end-product itself according to EMC Directive. *1 Display reading used as a guide for the detecting distance. When the setting value is tuned, the readout shifts. When the value exceeds “-99”, “-FF” is displayed. *2 The laser classification for FDA (CDRH) is implemented based on IEC60825-1 in accordance with the requirements of Laser Notice No.50. *3 M8 connector (3-pin) type does not include the external input function. *4 When the response time is 10 ms NPN type (LR-ZB*N) PNP type (LR-ZB * P) It indicates a hazardous situation which, if not avoided, could result in death or serious injury.It indicates a situation which, if not avoided, could result in product damage as well as property damage. Safety Information for LR-ZB Series • This product is only intended to detect object(s). Do not use this product for the purpose to protect a human body or part of a human body.
- This product is not intended for use as an explosion-proof product. Do not use this product in a hazardous location and/or potentially explosive atmosphere.
- This product uses DC power.The product may explode or burn if an AC voltage is applied. • Do not wire the cable along with power lines or high-tension lines, as the sensor may malfunction or be damaged due to noise.
- When using a commercially available switching regulator, ground the frame ground terminal and ground terminal.



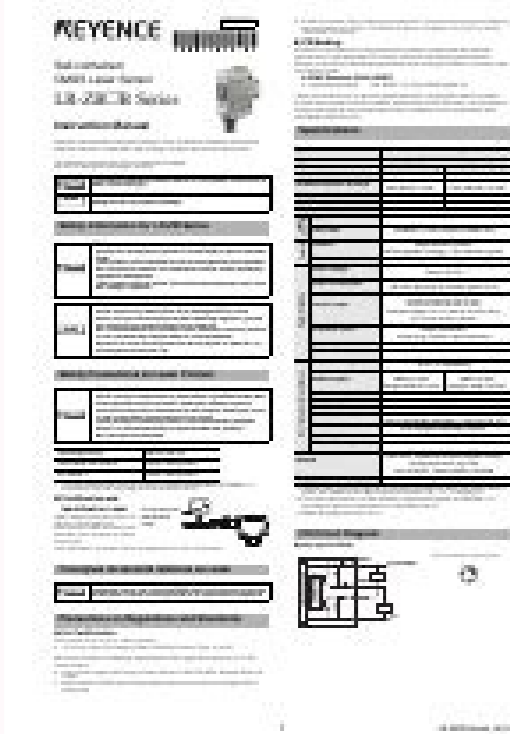
- Do not disassemble this product. Laser emission from this product is not automatically stopped when it is disassembled. • Use with an over current protection device which is rated 30 V or more and not more than 1 A. Safety Precautions on Laser Product • This product uses a semiconductor laser for the light source. • Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. • Follow the instructions mentioned in this manual.



Otherwise, injury to the human body (eyes and skin) may result.



- Laser emission from this product is not automatically stopped when it is disassembled.Do not disassemble this product. • Do not stare into the beam. Wavelength/Output 660 nm/145 μW FDA(CDRH) Part1040.10 * Class 1 laser product IEC 60825-1 Class 1 laser product Consignes de sécurité relatives au Laser 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.



Precautions on Regulations and Standards WARNING NOTICE WARNING NOTICE WARNING Certification and Identification Label AVERTISSEMENT Specifications Type Distance setting Appearance Rectangular NPN 2 m cable LR-ZB100N LR-ZB250N M8 connector 4-pin LR-ZB100CN LR-ZB250CN PNP 2 m cable LR-ZB100P LR-ZB250P M8 connector 4-pin LR-ZB100CP LR-ZB250CP M8 connector 3-pin LR-ZB100C3P LR-ZB250C3P Detectable distance 35 to 100 mm (650 to 0) *1 35 to 250 mm (215 to 0) *1 Standard detection deviation 35 to 50 mm ; 1.5 mm 50 to 100 mm ; 3 mm 35 to 180 mm ; 9 mm 180 to 250 mm ; 25 mm Display resolution 2 (0.2 mm) 1 to 3 (1 to 3 mm) Spot diameter 2 X 1 mm at 100 mm 2.4 X 1.2 mm at 250 mm Response time 1.5 ms / 10 ms / 50 ms selectable Type Red laser (660 nm) Laser class Class 1 laser product (IEC60825-1, FDA (CDRH) Part1040.10 *2) Indicator 3-digit 7-segment display (red), output indicator (yellow), DATUM indicator (orange), 1 spot indicator (green) Timer OFF/ON delay/OFF delay/One-shot Power voltage 10 to 30 VDC, including 10% ripple (P-P), Class 2 or LPS Power consumption 450 mW or less (18 mA or less at 24 V, 34 mA or less at 12V) Control output LR-ZB*N: NPN Open collector LR-ZB*P: PNP Open collector Applied voltage 30 VDC or less, Control current 100 mA or less, Residual voltage 1.2 V or less at 10 mA or less, 2 V or less at 10 to 100 mA Protection circuit Protection against reverse power connection, output overcurrent, output surge, reverse output connection Output operation Light-ON / Dark-ON selectable External input *3 Input time calibration: 35 ms or more ON, 35 ms or more OFF Laser emission stop: 2 ms or more ON, 20 ms or more OFF Short-circuit current NPN: 1 mA or less/PNP: 2 mA or less Enclosure rating IP68 (IEC60529)/IP69K (DIN40050-9)/ 4X, 6P, 13 (NEMA250) Ambient light *4 Incandescent lamp: 4000 lx or less Sunlight: 8000 lx or less Incandescent lamp: 2000 lx or less Sunlight: 4000 lx or less Ambient temperature -10 to +50°C Storage temperature -25 to +75°C Ambient humidity 35 to 85%RH Shock resistance 1000 m/s 2 in X, Y, Z axis directions respectively 6 times Vibration resistance 10 to 55 Hz Double amplitude 1.5 mm in the X, Y, Z axis directions respectively, 2 hours Insulating resistance 20 M Ω or more (500 VDC) Withstand voltage 1000 VAC 50/60 Hz 1 min Material Case: SUS316L, Display: PES, Lens cover: PMMA with scratch-resistant coating, Packing/Connector ring: FKM Weight 2 m cable type: Approx. 110 g (Including cable) M8 connector type: Approx. 55 g I/O Circuit Diagram Model Light source Connection Specifications Environmenta l r esi st anc e 3 VDC PLC, etc. Sensor main circuit Load Ov ercurrent protection circuit 10 to 30 VDC 0 V Brown/1 Blue/3 White/2 Black/4 1 2 3 4 1 3 4 M8 connector (4-pin) type M8 connector (3-pin) type * Cable type, M8 4-pin connector type only 96M11812