











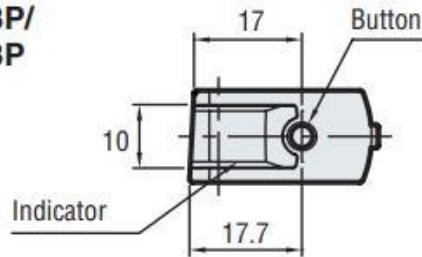
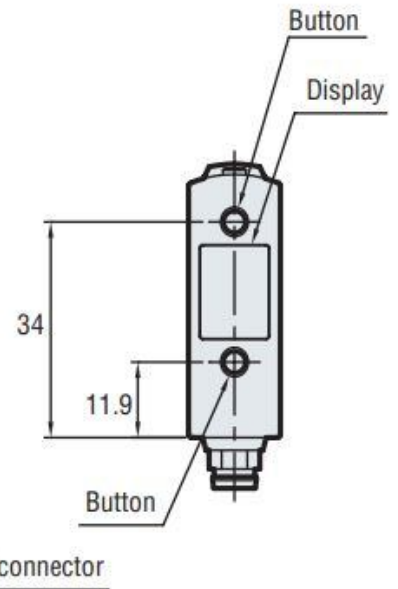
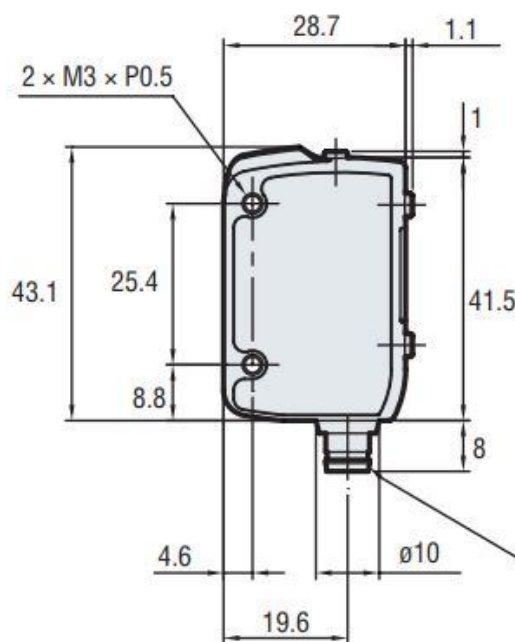
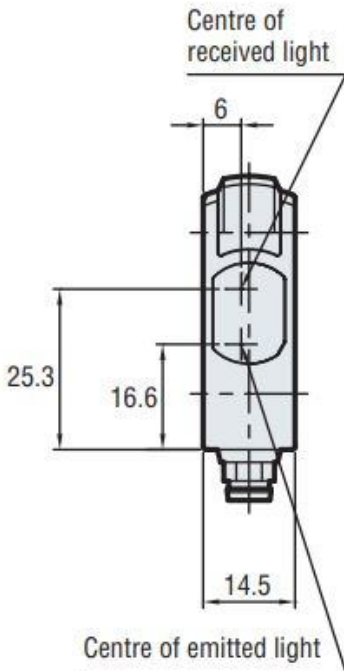


| Type | Detecting distance | Spot diameter | Standard detectable deviation | Connection method | Output | Model | Weight |
|---|---|---|--|-------------------|--------------------------|--------------------------|--------|
|  Rectangular w/ cable |  35 to 100 mm |  2 mm ±1 mm At detecting distance of 100 mm | 1.5 mm (35 to 50 mm) 3 mm (50 to 100 mm) | 2 m cable | NPN | LR-ZB100N | 110 g |
| PNP | | | | | LR-ZB100P | | |
|  Rectangular w/ M8 connector |  35 to 250 mm |  2.4 mm ±1.2 mm At detecting distance of 250 mm | 9 mm (35 to 180 mm) 25 mm (180 to 250 mm) | M8 4-pin | NPN | LR-ZB100CN | 55 g |
| M8 3-pin | | | | PNP | LR-ZB100CP | | |
| | | | | PNP | LR-ZB100C3P | | |
| M8 3-pin | | | | PNP | LR-ZB100C3P | | |
|  Rectangular w/ cable *Includes I-DATUM feature |  35 to 250 mm |  2.4 mm ±1.2 mm At detecting distance of 250 mm | 9 mm (35 to 180 mm) 25 mm (180 to 250 mm) | 2 m cable | NPN | LR-ZB250AN NEW | 110 g |
| PNP | | | | | LR-ZB250AP NEW | | |
|  Rectangular w/ M8 connector |  35 to 250 mm |  2.4 mm ±1.2 mm At detecting distance of 250 mm | 9 mm (35 to 180 mm) 25 mm (180 to 250 mm) | M8 4-pin | NPN | LR-ZB250CN | 55 g |
| M8 3-pin | | | | PNP | LR-ZB250CP | | |
| | | | | PNP | LR-ZB250C3P | | |
| M8 3-pin | | | | PNP | LR-ZB250C3P | | |

**LR-ZB100CN/ZB100CP/ZB100C3P/
ZB250CN/ZB250CP/ZB250C3P**



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| | | |
|--------|---|--|
| 型號 | LR-ZB100CP | |
| 類型 | 距離設定型 | |
| 形狀 | 矩形 | |
| 輸出形態 | PNP | |
| 連接方式 | M8 連接器 (4-pin) | |
| 檢測距離 | 35 至 100 mm (650 至 0) ^{*1} | |
| 標準檢測偏差 | 35 至 50 mm : 1.5 mm 50 至 100 mm : 3 mm | |
| 顯示解析度 | 2 (0.2 mm) | |
| 光點直徑 | 100 mm 時為約 2 × 1mm | |
| 反應時間 | 1.5 ms/10 ms/50 ms 切換方式 | |
| 光源 | 種類 | 紅光雷射 (660 nm) |
| | 雷射分類 | 第 1 類雷射產品 (IEC60825-1, FDA (CDRH) Part1040.10 ^{*2}) |
| 功能 | 指示燈 | 3 位數 7 段顯示 (紅色)、輸出指示燈 (黃色)、 DATUM 指示燈 (橙色)、1 spot 指示燈 (綠色) |
| | 計時器 | OFF / 開 - 延時 / 關 - 延時 / 單脈衝 |
| 電氣規格 | 電源電壓 | 10 至 30 VDC、包含紋波 10% (p-p)、Class2 或 LPS |
| | 功率消耗 | 450 mW 以下 (24 V 時 18 mA 以下、12 V 時 34 mA 以下) |
| | 控制輸出 | PNP 開路集電極 外加電壓 30 VDC 以下、控制電流 100 mA 以下、 殘留電壓 10 mA 以下時在 1.2 V 以下、10 至 100 mA 時在 2 V 以下 |
| | 保護電路 | 電源逆接保護、輸出過電流保護、輸出突波保護、輸出逆接保護 |
| | 輸出動作 | 入光時 ON / 遮光時 ON 切換方式 |
| | 外部輸入 | 輸入時間 調整: 35 ms 以上時 ON、35 ms 以上時 OFF 投光停止: 2 ms 以上時 ON、20 ms 以上時 OFF 短路電流 NPN: 1 mA 以下 / PNP: 2 mA 以下 |
| 環境抗耐性 | 外殼防護等級 | IP68 (IEC60529)、IP69K (DIN40050-9)、ECOLAB ^{*3} 、Diversey [*] 3 |
| | 絕緣電阻 | 20 MΩ 以上 (500 VDC) |
| | 環境光照 | 白熾燈 4,000 lux 以下 日光 8,000 lux 以下 ^{*4} |
| | 環境溫度 | -10 至 +50 °C (無凍結) |
| | 保存環境溫度 | -25 至 +75 °C (無凍結) |
| | 相對濕度 | 35 至 85 % RH (無凝結) |
| | 耐電壓 | 1,000 VAC、50/60 Hz、1 min. |
| | 耐振動性 | 10 至 55 Hz、雙倍振幅 1.5 mm、X,Y,Z 方向各 2 小時 |
| 耐衝擊性 | 1,000 m/s ² 、X,Y,Z 方向各 6 次 | |
| 材質 | 外殼: SUS316L、顯示屏: PES、鏡頭蓋: 附帶防止劃傷塗層的 PMMA、墊片 / 連接器環: FKM | |
| 附件 | 操作手冊、證明 / 識別標籤 (FDA) | |
| 重量 | 約 55 g | |

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^{*1} 與檢測距離相關的參考值。若對設定值進行調諧，值將會發生位移。另外，若超出「-99」，則顯示轉為「-FF」。

^{*2} FDA (CDRH) 的雷射分類是基於 IEC60825-1 並根據 Laser Notice No.50 的要求而實施的。

^{*3} 已通過對各公司清潔劑進行的耐久性實驗。

^{*4} 反應時間為 10 ms 時

Specifications



ECOLAB



| | | | | |
|-------------------------------|---|---|---|--|
| Type | | Distance based laser sensor | | |
| Appearance | | Rectangular | | |
| Model | NPN | 2 m cable | LR-ZB100N | LR-ZB250AN ⁶ NEW |
| | | M8 connector 4-pin | LR-ZB100CN | LR-ZB250CN |
| | PNP | 2 m cable | LR-ZB100P | LR-ZB250AP ⁶ NEW |
| | | 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 detectable 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 × 1 mm at 100 mm | | 2.4 × 1.2 mm at 250 mm |
| Response time | | 1.5 ms / 10 ms / 50 ms selectable | | |
| Light source | Type | Red laser (660 nm) | | |
| | Laser class | Class 1 laser product (IEC60825-1, FDA (CDRH) Part1040.10 ²) | | |
| Function | 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 | | |
| Specifications | 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 12 V) | | |
| | Control output | LR-ZBxN: NPN Open collector LR-ZBxP: 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), NEMA 4X, 6P, 13(NEMA250), ECOLAB ⁴ , Diversey ⁴ | | |
| Environmental resistance | Ambient light ⁵ | Incandescent lamp: 4000 lux or less Sunlight: 8000 lux or less | Incandescent lamp: 2000 lux or less Sunlight: 4000 lux or less | |
| | Ambient temperature | -10 to +50°C (No freezing) | | |
| | Storage temperature | -25 to +75°C (No freezing) | | |
| | Ambient humidity | 35 to 85% RH (No condensation) | | |
| | 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 MΩ 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 | | | |
| Accompanying items | Instruction Manual, Certification/Identification label (FDA) | | | |

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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 Have passed resistance tests with cleaning agents from multiple manufacturers.

⁵ When the response time is 10 ms

⁶ Includes I-DATUM feature