Microphotonic Devices (Light Convergent Reflective Sensor)
B5W-LA01

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

Features

- Robust performance with little influence from sensing object color or material.
- Detects objects with mirror reflective surfaces and transparent objects.
- Analog voltage output.
- Maximum sensing distance of 70 mm.

■ Absolute Maximum Ratings (Ta = 25°C)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Ratings</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>V_{CC}</td>
<td>5.5</td>
<td>V</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>Topr</td>
<td>-10 to +60</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>Tstg</td>
<td>-25 to +80</td>
<td>°C</td>
</tr>
</tbody>
</table>

■ Electrical and Optical Characteristics (Ta = 25°C)

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Characteristics</th>
<th>Unit</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating supply voltage</td>
<td>V_{CC}</td>
<td>4.5 5.0 5.5 V</td>
<td></td>
<td>---</td>
</tr>
<tr>
<td>Maximum Output voltage</td>
<td>V_{max}</td>
<td>--- 3.3 --- V</td>
<td></td>
<td>---</td>
</tr>
<tr>
<td>Output voltage (Far)</td>
<td>V_{ofar}</td>
<td>--- --- 30 mV</td>
<td></td>
<td>At L = 70 mm by White paper *</td>
</tr>
<tr>
<td>Output voltage (Near)</td>
<td>V_{onear}</td>
<td>70 --- --- mV</td>
<td></td>
<td>At L = 22.8 mm by Black paper *</td>
</tr>
</tbody>
</table>

Circuit diagram

Pulse Pulse input pin
GND Ground pin
Vout Output voltage pin
Vcc Input voltage pin

unless otherwise specified, the tolerances are ±0.3 mm.

Connector type
JST S4B-ZR
Number of pins
4 pin

Downloaded from Arrow.com.
* Input frequency: 500 Hz duty 40%, Input voltage: 5 V
Output voltage at no reflective object is defined as 0 mV.
The reference surface and mounting surface are shown in the following figure.

**Measurement method of distance to reflective object**

![Diagram of measurement method](image)

**Engineering Data**
Measurement data of distance characteristics for reference

![Graph of distance characteristics](image)

**Recommend sampling timing**

**I/O Timing**

![Timing diagram](image)

- **Application examples provided in this document are for reference only.** In actual applications, confirm equipment functions and safety before using the product.
- **Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly.** Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

**OMRON Corporation**
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**Note:** Do not use this document to operate the Unit.