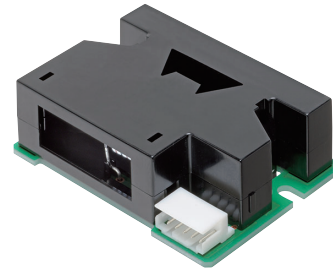


# B5W-LD0101-1/2

## Highly Sensitive and Compact Air Quality Sensor

- Detection of particles down to 0.5 μm in diameter is possible while using an LED light source
- Features a unique flow path structure that efficiently sucks in air
- Small in size thanks to its compact optical system



**NEW**

**RoHS Compliant**

 Be sure to read Safety Precautions on page 4.

## Model Number Structure

**B5W-** **L** **D** **01** **01** -

(1)      (2)      (3)      (4)      (5)

**(1) Standard type**

L: Optical sensor

**(2) Sensor type**

D: Air Quality sensor

**(3) Structure**

01: Basic structure

**(4) Function**

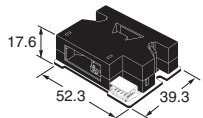
01: Basic function

**(5) Packing state**

1: Individual

2: Carton

## Ordering Information

Appearance	Sensing method	Connecting method	Output type	Model	Packing state
	Light scattering	Connector	Pulse output (Built-in pull-up resistor 3 kΩ)	B5W-LD0101-1	Individual
				B5W-LD0101-2	Tray

## Ratings, Characteristics and Exterior Specifications

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Supply voltage	V <sub>CC</sub>	5.5	V
Input threshold voltage	V <sub>th</sub>	5.5	V
Operating temperature	T <sub>opr</sub>	0 to 45	°C
Storage temperature	T <sub>stg</sub>	-25 to 65	°C

### Exterior Specifications

Connecting method	Weight (g)	Material	
		Case	Lens
Connector	20	PC	PMMA

### Electrical Characteristics (Ta=25°C, V<sub>CC</sub>=5 V, 0 Lx)

Parameter	Characteristics value			Unit	Remarks
	MIN	TYP	MAX		
V <sub>CC</sub>	4.5	5	5.5	V	Ripple voltage range 30 mV or less (*) is recommended
V <sub>th</sub>	0	---	3.5	V	
V (OUT1)/ V (OUT2) Hi level output	4.5	---	---	V	Pulse output when particles are detected
V (OUT1)/ V (OUT2) Low level output	---	---	0.7	V	Pulse output when particles are not detected
Supply current	---	---	90	mA	LED-ON

\* Ensure there is no noise below 300 Hz.

Confirm the allowable ripple voltage value using an actual machine.

### Detection Characteristics (Ta=25°C, V<sub>CC</sub>=5 V, 0 Lx)

Parameter		Characteristics value			Unit	Remarks
		MIN	TYP	MAX		
V (OUT1) Number of detections	PN1	---	300	---	count	Model of dust monitor: TSI DUSTTRAK II MODEL8530 Impactor: 1.0 μm Dust concentration = 100 μg/m <sup>3</sup>
V (OUT2) Number of detections	PN2	0	---	---	count	Measurement time: 20 sec Threshold voltage: V <sub>th</sub> =0.5 V Detection object: 0.5 μm Polystyrene latex particles

### Minimum detectable particle

V (OUT1): Approx. 0.5 μm or larger

V (OUT2): Approx. 2.5 μm or larger