

## OMRON releases Light Convergent Reflective Sensor B5W-LB series

*~ Stable operation of equipment through precise detection of various objects including shiny, black, and transparent ones has been realized ~*

**New Delhi, August 6, 2019:** OMRON has launched the Light Convergent Reflective Sensor "B5W-LB series" which can be embedded in industrial equipment. "B5W-LB series" adopts OMRON's unique lens structure combining four types of aspherical lenses and realizes stable detection with wide sensing range regardless of colors and materials such as shiny, black, and transparent surface.



"B5W-LB series"

Recently, as advances have been made in a wide range of industrial equipment such as packagers and coffee makers and they have become increasingly sophisticated and multifunctional, needs are growing for sensors that can accurately detect products without being affected by the design of containers and packages. Conventional reflective sensors<sup>\*1</sup> which have been embedded in equipment have been adopted on the premise that detection is carried out under specific conditions based on the color and material of the object to be detected. However, there was a problem of unstable detection when the object was changed or added.

By adopting the "detection by light convergent reflective method"<sup>\*2</sup> that has been used for sensors mainly for factory manufacturing facilities, "B5W-LB series" sensors are not affected by a change of object color and/or material, contributing to a reduction of malfunctions. On the other hand, sensors using the light convergent reflective method have a narrower range of distance for detecting an object, and may overlook a product that is not in its predetermined position. The "B5W-LB series" sensors adopted OMRON's unique lens structure combining four types of aspheric lenses, ensuring a wider detection range and allowing stable detection even if product positions vary.

OMRON will continue to actively promote research and development to realize automation of various applications with sensors, contributing to solving customers' problems.

*\*1. A sensor that detects the presence or absence of an object by emitting light to the object and receiving the reflected light*

*\*2. Principle of light convergent reflective sensor*

*The sensor receives light reflected from an object to be detected for detection of the presence of the object. It has an optical system that limits the emitting beam and the light-receiving area, and detects only an object at a certain distance from itself (the overlapping area of the emitting beam and the light-receiving area).*

## Major Applications



Robotic Vacuum Cleaner

### Main Features:

Stable detection of mirror, black, and transparent objects. No need of a setting change for each object to be detected, contributing to higher usability.

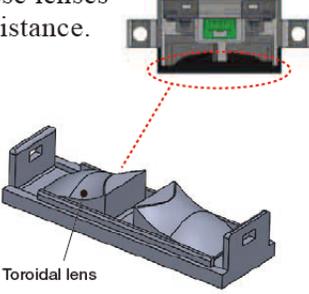
Reliable detection of the object regardless of its color and/or background, reducing malfunction and contributing to customer satisfaction.

OMRON's proprietary lens structure combining four types of aspheric lenses ensures a wide detection range which is less susceptible to object's positional shift, and contributes to stable operation of the equipment.

Optical simulations were used in the design of these lenses to provide robustness in terms of both color and distance.  
Lens design using optical simulation.

**Past** The low levels of light reflected off shiny, black or transparent objects made detection unstable.

**Answer!** OMRON's unique structure uses four types of toroidal lenses to enable stable sensing, even at minimal light levels.



Toroidal lens

Patent pending

### About OCB-IN (Electronic Components)

Started in 2003, Omron Electronic and Mechanical Components division represents the India operations of Omron Electronic and Mechanical Business Company headquartered in Japan. Being a leading manufacturer and provider of advanced electronic components in the country, Omron provides highest quality through the development of high-precision, high-performance components, electronic parts and electronic devices. The portfolio includes relays, switches, connectors, RF MEMS switches, MEMS flow sensors and pressure sensors being utilised in consumer, commercial, home appliance, industrial and automotive industries. The company has an extensive sales network consisting of regional sales engineers, customer service staff and an authorized distributor network.

To learn more, please visit: <https://ecb.omron.com.sg/>



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