

Colour sensor opens new opportunities in industrial monitoring

Hoofddorp, Netherlands, Tuesday, 22 November 2022 – OMRON Electronic Components Europe has announced the introduction of its B5WC Colour Sensor, which enables monitoring of equipment, plant, and industrial processes through detection of small colour changes. Specific applications are being developed through co-creation with industry partners.

The colour sensor uses a white LED to emit light and receive reflected light according to the colour of detected objects. The colour sensor separates received reflected light into red, green, and blue, then outputs RGB data as voltage values using the I2C interface.

Applications range from monitoring of lubricant deterioration in robot arms and elevators, through drinks dispensers, to object detection on production lines. OMRON's new B5WC promises an innovative solution to these issues. For example, the colour sensor monitors oil deterioration in hydraulic equipment used in industrial machinery - in real time using colours to monitor the condition of the oil. Providing maintenance at optimal timing is vital for manufacturing plants. Minimal production losses within manufacturing sites contribute to carbon neutrality.

Development of sensing technology and optical design technology enables simpler integration into the equipment thanks to compact size, just W:40mm x D:8.4mm x H:15.9mm. Plus, integrating I2C communications into the sensor streamlines embedding in the equipment.

The new sensor helps customers to remotely monitor equipment deterioration in real-time, leading to the visualization of the equipment and the reduction of person-hours required for inspection and maintenance. It offers solutions to the problems faced by the industrial machinery and hydraulic equipment industries through highly efficient and systematic maintenance.

At manufacturing sites, oil contamination is frequently a cause of failure of industrial machinery and hydraulic equipment. Maintenance personnel are relied upon to conduct a visual check for such contamination, often by performing periodic inspection and part replacement based on their intuition, tricks, and experience. Often production stoppage losses due to sudden equipment breakdown are incurred by inconsistent judgment from each person in charge.

In addition, delays in inspection timing have been a longstanding issue. There is also the increasing need for higher efficiency in maintenance and remote monitoring due to a severe shortage of labour and limited accessibility due to the COVID pandemic. Until recently, size and cost of additional components have stood in the way of solving the problem.

To resolve these issues, the new B5WC sensor can be embedded in the equipment that quantitatively monitors oil deterioration based on colour changes. Based on OMRON's innovative sensing technology and optical design, the new product is readily integrated into the equipment thanks to compact size (W:40mm x D:8.4mm x H:15.9mm) and communication method (I2C), which are suitable for embedding in the equipment.

Prior to commercial introduction, the B5WC successfully completed four years of field tests on the "Eco-Rich R" hybrid hydraulic system provided by the Oil Hydraulics Division of Daikin Industries, Ltd. Future applications are planned for manufacturers of drinks dispensers and object detection, with development on a co-creation basis.



The new OMRON B5WC Colour Sensor enables monitoring of equipment, plant, and industrial processes through detection of small colour changes.

About OMRON Electronic Components Europe

On 1 April 2022, OMRON Corporation announced that its' Electromechanical Components (EMC) division was renamed as OMRON Device and Module Solutions (DMS) in line with the global long-term vision [„Shaping the Future 2030.“](#)

OMRON Electronic Components Europe is the European subsidiary of the Device and Module Solutions division. The revised division name reflects a new focus on delivering solutions to customers globally and in Europe. Society is facing new social and environmental changes, and OMRON recognises and is responding to that. The company aims to offer its' customers solutions that help them address these universal challenges. In accordance with the long-term strategy, OMRON intends to contribute further to the roll-out of new energy sources and of high-speed communications by enabling the creation of sturdier, advanced and more efficient devices. These devices will make people's lives easier and better, in particular by achieving carbon neutrality, realizing a digital society and extending healthy life expectancy.

OMRON Electronic Components Europe strongly supports its customers in Western and Eastern Europe through 8 regional offices, a network of local offices and partnerships with specialist, local, regional and global distributors.

About OMRON Corporation

OMRON Corporation is a global leader in the field of automation based on its core technology of "Sensing & Control + Think." OMRON's business fields cover a broad spectrum, ranging from industrial automation and electronic components to social infrastructure systems, healthcare, and environmental solutions.

Established in 1933, OMRON has about 30,000 employees worldwide, working to provide products and services in around 120 countries and regions. For more information, please visit <https://www.omron.com/global/en/>

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