

E3Z PHOTOELECTRIC SENSORS

always does the job



» A sensor for every task

» Proven performance

» Unmatched reliability

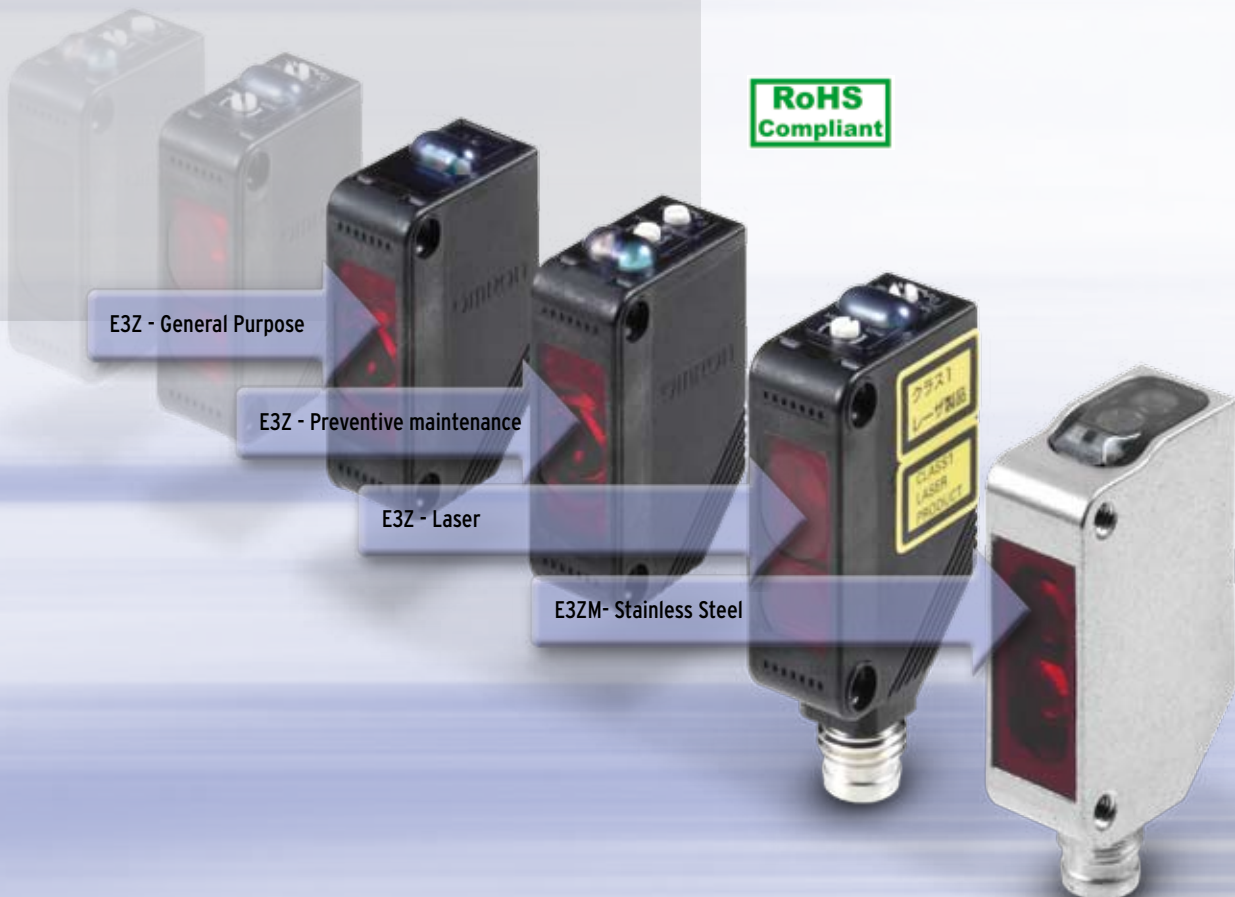
Advanced Industrial Automation

OMRON

The sensor family millions rely on

The E3Z sensor family is already among the world's most popular and successful photoelectric sensor families, with product sales of over a million a year. And the family is still growing. It now includes several new family branches aimed at both general-purpose and specialist application areas to meet the growing needs of our customers. Offering you a comprehensive sensor concept for every task within your industrial automation system.

Besides the General Purpose line intended for all standard applications, within the expanded E3Z family you'll also find our advanced Preventive Maintenance series designed to detect and warn you of operational problems before they become critical. The family also includes the E3Z-Laser sensors for precision positioning and detection over long distances and our E3ZM Stainless Steel sensor range for applications where hygiene and resistance to aggressive environments are paramount requirements. And as with all Omron products, the production of the E3Z family meets the highest ecological standards and complies with RoHS.



E3Z General Purpose

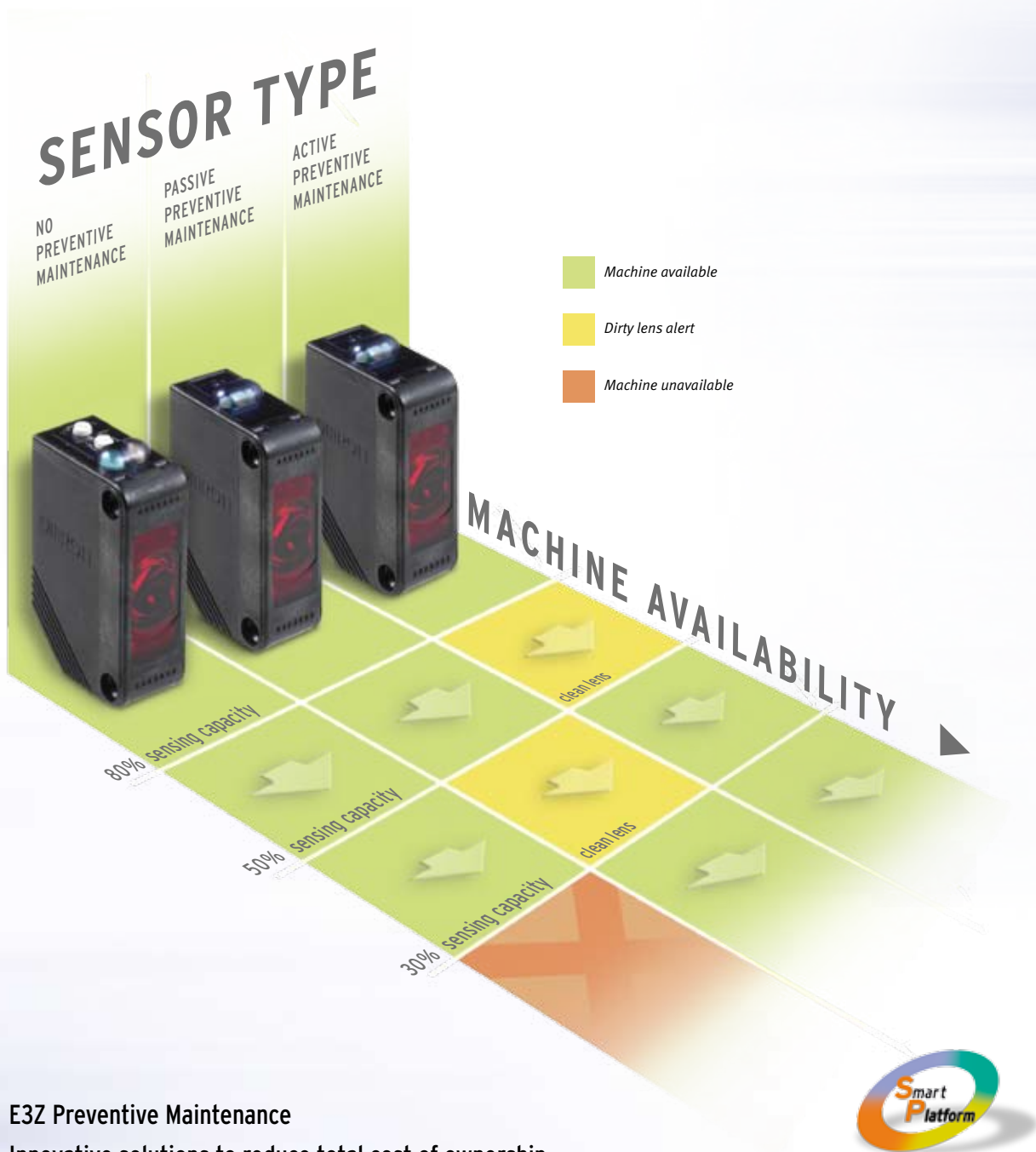
Powerful and easy to use

E3Z General Purpose range is the perfect choice for the majority of photo sensing applications. The series makes no compromise on performance thanks to its integrated high-sensitivity photo-IC specially designed by Omron. The range incorporates advanced functionality such as a special algorithm guaranteeing reliable detection under a broad range of operating conditions, and advanced pulse-synchronisation techniques to ensure high ambient-light immunity.

As with all products in the E3Z family, the General Purpose range offers flexibility in mounting and connection, including M12, M8-4Pin, M8 3Pin and pre-wired versions for embodying into a broad range of machine environments.

- Integrated high-sensitivity photo-IC
- Easy and flexible operation via Light-On/Dark-On selector and screw potentiometer
- Minimal deviation of optical axis for reliable and precise alignment
- Complete sensor family including through-beam, retro-reflective, diffuse-reflective and background/foreground suppression models





E3Z Preventive Maintenance

Innovative solutions to reduce total cost of ownership

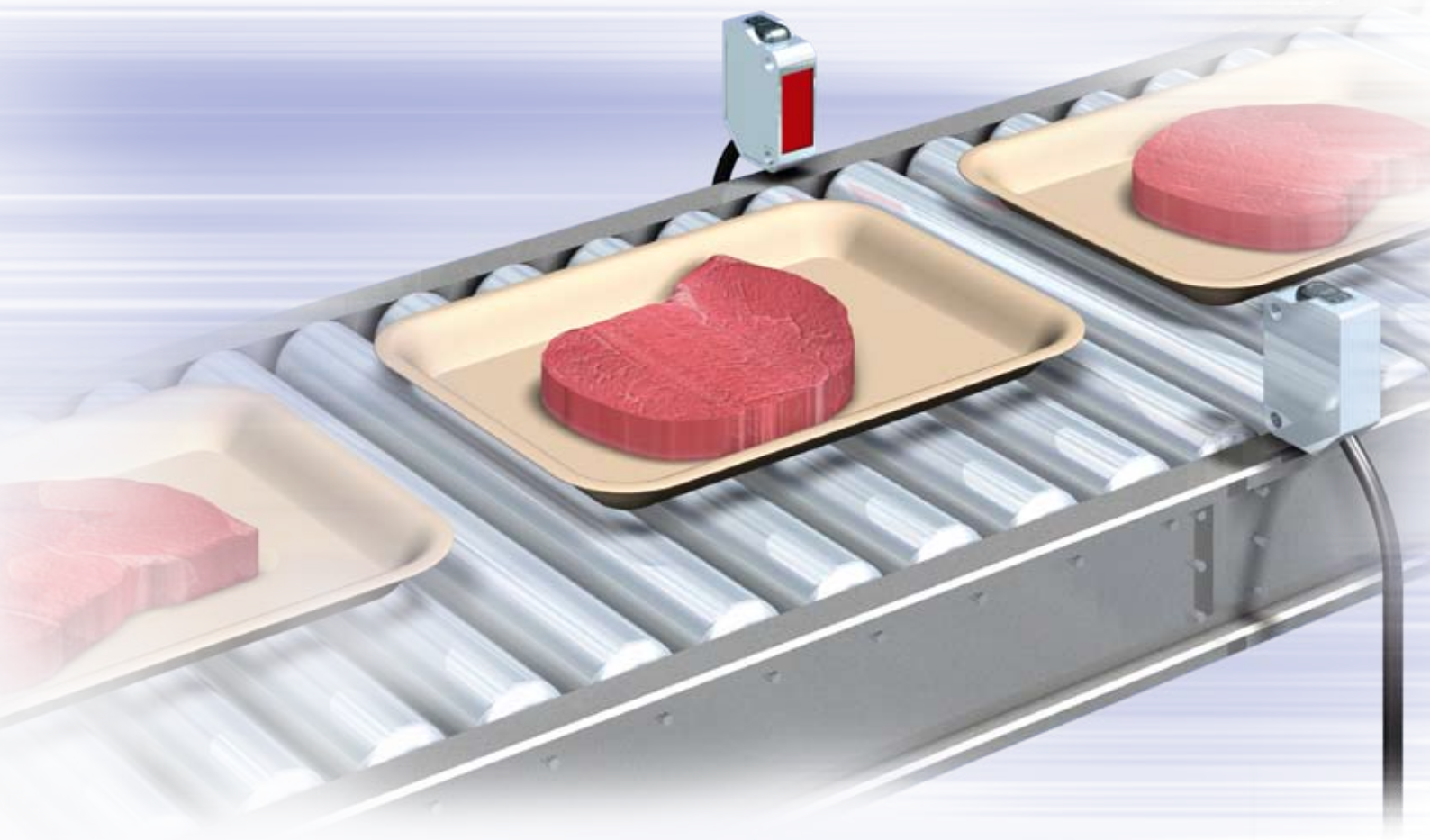
For detecting dropping sensing power caused by dirt on the lens the E3Z Preventive Maintenance series offers Passive Preventive Maintenance realised with a self-diagnostic output. An alarm is sent to the PLC if the signal transmitted to the receiver becomes unstable to allow corrective action to be taken before the sensor stops working.

For preventing malfunctions at an even earlier stage, Light Intensity Switching versions supporting Active Preventive Maintenance are available. Triggered by a signal from the control unit, the sensor reduces the intensity of transmitted light to 50%, for example at the system startup test, to detect if there is a drop in light intensity. At full intensity, the receiver may still receive a stable signal which becomes unstable at half power, indicating that the lenses need cleaning during

the next maintenance period, while the sensor has still more than 100% reserve – imagine the benefit to your process!

Versions with a light-emission stop (test input) function are also available ensuring proper operation of the sensor for sensitive applications. Combine these clever sensors with OMRON's Smart Slice I/O or PLCs and your machine will never fail!

- Self-diagnostic/alarm output
- Light-intensity switching
- Test input / Light-emission stop
- Perfect partner for operating with Omron's SmartSlice I/O and PLCs



E3ZM Stainless Steel

Hygienic and detergent resistant

certified by:
ECOLAB

Sharing the features of our E3Z General Purpose series, the E3ZM series comes in a high-grade SUS 316L stainless steel housing manufactured by a special metal-injection-moulding process. The series features outstanding corrosion and wear resistance, and offers the ideal solution where hygiene and resistance to aggressive cleaning agents are important – as in food-production lines for example. The hermetically-sealed housing also provides resistance to high-pressure water meeting IP69K requirements and to aggressive cleaning substances. And to improve hygiene, identification markings are imprinted directly on the surface with a laser instead of using labels which may contain contaminants.

- High-grade SUS 316L stainless steel housing offering excellent corrosion and wear resistance
- Sealed to stringent IP69K standard
- Approved by the Ecolab Institute
- Item labels replaced by laser printing on product

Cleaning substances

- ✓ Sodium hydroxide (NaOH)
- ✓ Hydrogen peroxide (H₂O₂)
- ✓ Potassium hydroxide (KOH)
- ✓ Phosphoric acid (H₃PO₄)
- ✓ Sodium hypochlorite (NaClO)
- ✓ Ecolab P3-topax-66
- ✓ Ecolab P3-topax-56
- ✓ Ecolab P3-topactive DES
- ✓ Ecolab P3-topax 91
- ✓ ABC Compounding TEK121

E3Z-Laser

Ideal for precision applications

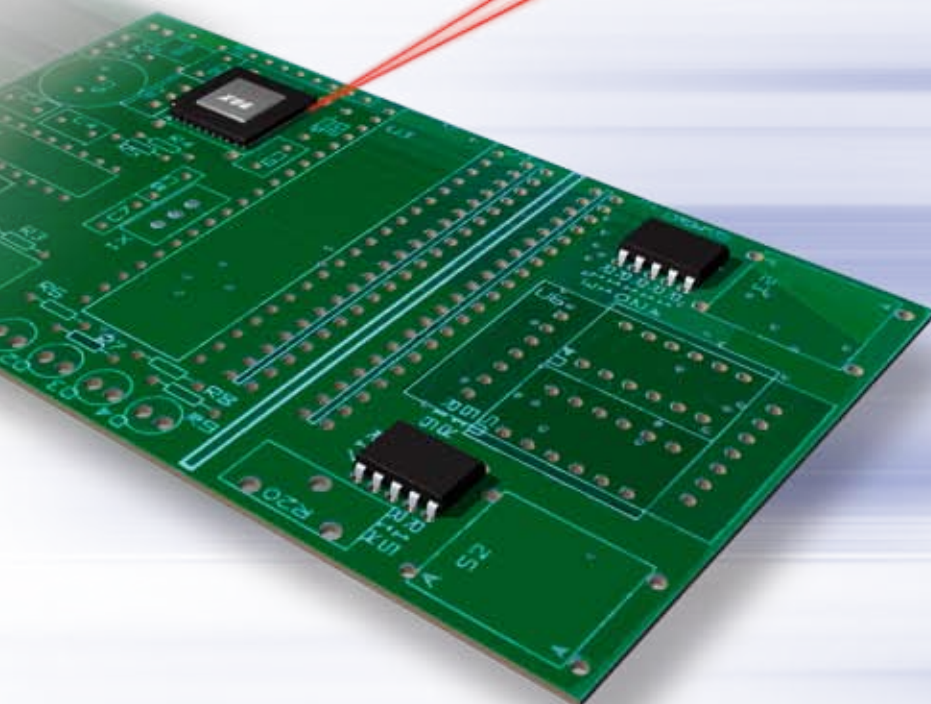
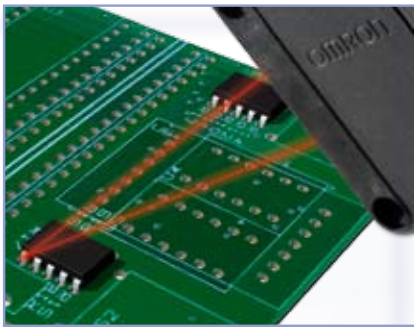
Available in BGS (background suppression), through-beam and retro-reflective versions, the E3Z-Laser series offers the ideal solution for precision positioning and detection of small objects in, for example, the semiconductor, packaging or pharmaceutical industries.

The E3Z-Laser series provides long sensing distances using Class 1 red lasers (same classification as normal LEDs). This contributes greatly to user protection (reducing the chance of eye damage).

The use of patented new high-precision alignment technology minimises beam axis deviation. And the BGS version, moreover, is characterized by excellent black/white error of less than 1.5% at 100 mm, providing exceptionally stable detection and operation.

- Class 1 laser for maximum user protection*
- Background suppression with excellent black/white error (< 1.5% at 100 mm)
- Long sensing distances: BGS: up to 300 mm
retro-reflective: up to 15 m
through-beam: up to 60 m
- Small visible spot supports easy adjustment

** JIS/IEC Class 1, FDA Class II*



A

Harsh conditions



A

B

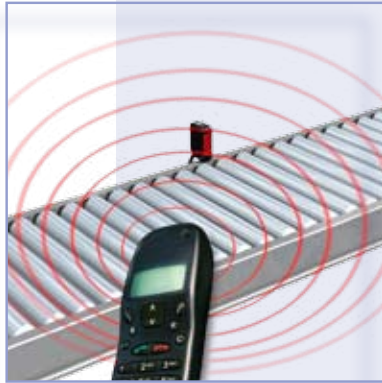
Preventive Maintenance



B

C

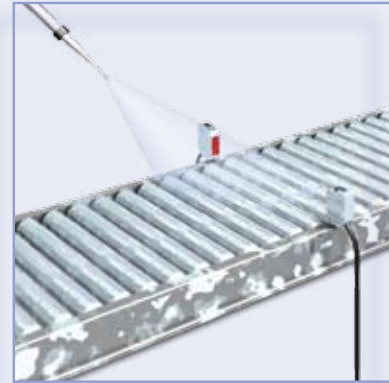
High field immunity



C

D

Tight housing



D

E

High ambient light immunity



E

F

Robust construction



F

Designed for long, reliable operational life

In common with all Omron products, the E3Z family is manufactured to exceptionally high engineering standards far exceeding even the most stringent of today's international standards. This means that, whatever the application and whatever the environment in which they operate, you can take their reliability for granted.

- Rugged, water-resistant housings meeting stringent international standards for ingress protection – such as IP67, and the even more demanding IP69K
- High immunity to electromagnetic interference means their operation is completely unaffected by stray local fields (such as those from mobile phones)

- Advanced circuit design offers outstanding stability, proven under all operating conditions and in a broad range of power supplies – even in floating-ground conditions

Moreover, stringent quality control procedures during manufacture ensure the exceptionally high levels of outgoing quality for which Omron is renowned. As a result, the return rate of our E3Z family is better than 20 ppm, guaranteeing low commissioning costs for new industrial installations and low maintenance costs during operational life.

Make the test

For getting a quick impression of the performance of E3Z just chose the samples you need from the extract of our product portfolio*.

E3Z-General Purpose	
Throughbeam, infrared LED	E3Z-T86
Retro-reflective red LED + polarising filters	E3Z-R86
Diffuse reflective, infrared LED	E3Z-D87
Background suppression, red LED	E3Z-LS86

E3Z-Preventive Maintenance	
Throughbeam, infrared LED + alarm output	E3Z-T81-J0SHW-CN
Throughbeam, infrared LED + light intensity switching	E3Z-T81-G2SHW-CN
Retro-reflective, red LED + alarm output	E3Z-R81-J0SRW-CN
Retro-reflective, red LED + light intensity switching	E3Z-R81-G2SRW-CN

E3Z-Laser	
Throughbeam	E3Z-LT86
Retro-reflective + polarising filters	E3Z-LR86
Background suppression	E3Z-LL86

E3ZM-Stainless steel	
Throughbeam, infrared LED	E3ZM-T86
Retro-reflective red LED + polarising filters	E3ZM-R86
Diffuse reflective, infrared LED	E3ZM-D87
Background suppression (100mm fix), red LED	E3ZM-LS86H
Background suppression (200mm fix), red LED	E3ZM-LS89H

*) Models with PNP-output and M8 4-PIN connector. Other models (e.g. cable output, M8 3-PIN, M12 connector) and NPN types are also available.

For more information about datasheets and our large standard E3Z portfolio just contact your OMRON representative located close to you or visit us in the web: www.omron.industrial.com.

OMRON EUROPE B.V. Wegalaan 67-69, NL-2132 JD, Hoofddorp, The Netherlands. Tel: +31 (0) 23 568 13 00 Fax: +31 (0) 23 568 13 88 www.omron-industrial.com

Austria

Tel: +43 (0) 1 80 19 00
www.omron.at

Belgium

Tel: +32 (0) 2 466 24 80
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Czech Republic

Tel: +420 234 602 602
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Tel: +358 (0) 207 464 200
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Tel: +33 (0) 1 56 63 70 00
www.omron.fr

Germany

Tel: +49 (0) 2173 680 00
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Tel: +36 (0) 1 399 30 50
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Middle East & Africa

Tel: +31 (0) 23 568 11 00
www.omron-industrial.com

Netherlands

Tel: +31 (0) 23 568 11 00
www.omron.nl

Norway

Tel: +47 (0) 22 65 75 00
www.omron.no

Poland

Tel: +48 (0) 22 645 78 60
www.omron.pl

Portugal

Tel: +351 21 942 94 00
www.omron.pt

Russia

Tel: +7 495 745 26 64
www.omron.ru

Spain

Tel: +34 913 777 900
www.omron.es

Sweden

Tel: +46 (0) 8 632 35 00
www.omron.se

Switzerland

Tel: +41 (0) 41 748 13 13
www.omron.ch

Turkey

Tel: +90 (0) 216 474 00 40
www.omron.com.tr

United Kingdom

Tel: +44 (0) 870 752 08 61
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