

# E2 INDUCTIVE SENSORS

When failure is not an option



» Wide portfolio and application range

» **Highest reliability**

» Designed for flexibility

# Zero tolerance on failure

*Small things sometimes have a big impact. Proximity sensors may be small and relatively inexpensive, but malfunctions can create big problems for you and your operation – in machine downtime, expensive delays and lost business.*

*That's why you can't take chances even with the small things. And neither do we! With our E2 Inductive Proximity Sensor series, we take a zero-tolerance approach to failure.*

*Which means we leave nothing to chance. We design the sensors to withstand the toughest conditions they're ever likely to experience in operation. We manufacture them using the most tightly-controlled production processes – with stringent checks at every stage to guarantee unsurpassed quality and reliability. And we subject them to the most demanding tests available to the industry today. Providing objective proof that the E2 series is indeed what we claim – the natural choice when failure is not an option.*

Highest water resistance



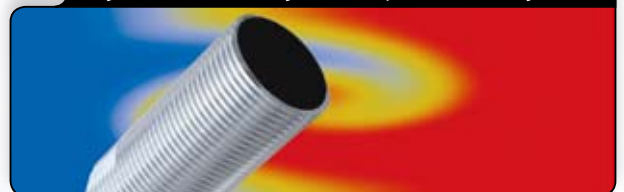
Highest Electro-Magnetic Immunity



Highest Cable Protection



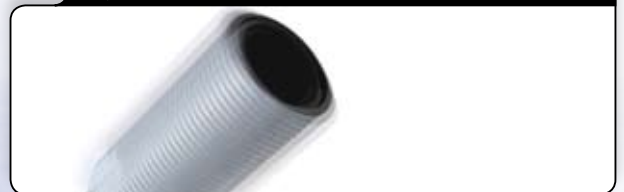
Highest resistance against temperature change



Highest mechanical resistance



Highest vibration resistance





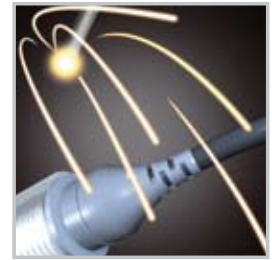
Extra thick E2FM surface.



Ordinary product.



No interference by small metal chips on sensing surface.



Cable resistant to welding sputter.

## E2FM sensors

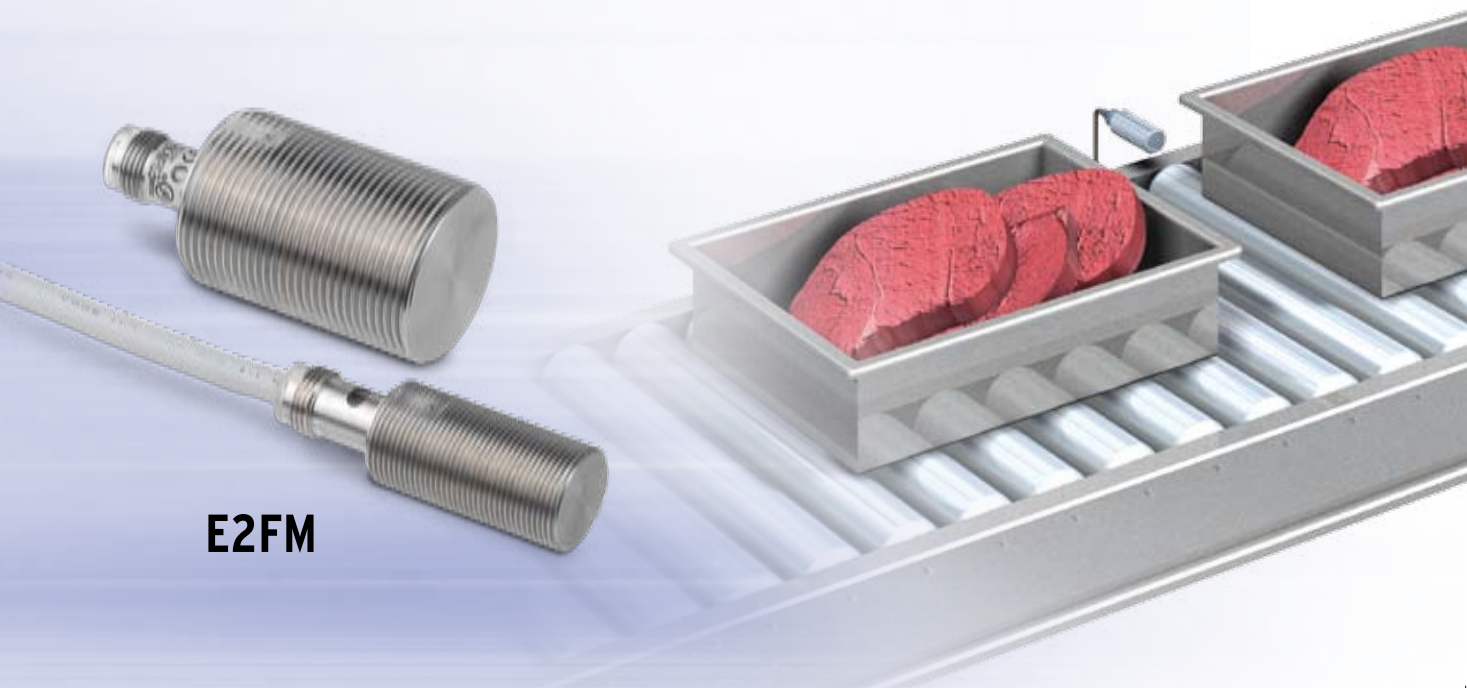
### Stainless steel for machine-tool toughness

For demanding environments in, for example, machine tool equipment, E2FM Stainless Steel sensors are the perfect choice. Their tough all stainless steel housing is highly resistant to impact, abrasion and aggressive chemicals and oils.

They also feature a sensing surface 0.8 mm thick – 4 times thicker than that of ordinary stainless steel proximity sensors – making them over 20 times tougher. We've proved this in continuous-impact tests in which ordinary stainless steel sensors are penetrated after just 10,000 impacts, while the sensing surfaces of E2FM sensors are still intact even

after 250,000 impacts. The sensors also feature a special ruggedized cable that's resistant to welding sputter. So they will continue operating in the toughest workshop conditions long after other stainless steel sensors have been consigned to the recycle bin.

E2FM sensors also require less frequent cleaning than ordinary sensors thanks to the use of optimised low-frequency pulse-modulation circuitry that ignores the small metal chips that build up on the sensing surface during milling and cutting. So your process can continue running, interrupted only by your normal cleaning and maintenance cycles.



**E2FM**



# E2EH sensors

## Heat and detergent resistant

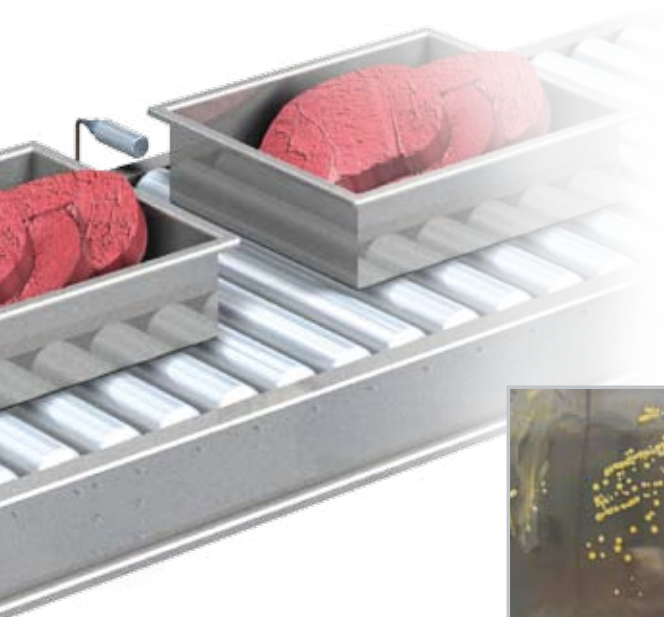
Ensuring highest hygiene in food processing applications requires intensive cleaning with high pressure, high temperatures and aggressive alkaline or acid based detergents. The high grade 316L stainless steel and the certified detergent resistance provide an easy-to-clean and durable housing. The heat resistance up to 120°C make the E2EH the first choice for usage in demanding environments in meat processing, cooking or baking applications.



**E2EH**



Certified resistance against detergents and high pressure cleaning.

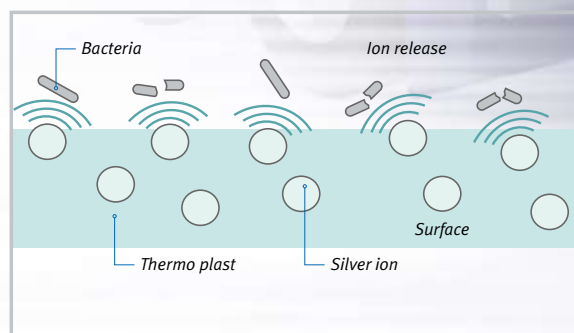


Bacteria growing on the sensor after touching with finger.

# E2F-D sensors

## Anti-microbial housing

Intensive cleaning reduces the risk of food contamination through bacteria and microbes and ensures highest hygiene. The anti-microbial housing of the E2F-D provides added protection against bacteria growth between cleaning cycles using a silver ion based additive actively inhibiting and killing bacteria.



Physiologically neutral material for safe usage in food environments



**E2F-D**



Bacteria on ordinary sensor after 12 hours.



Active bacteria reduction on E2F-D housing after 12 hours.



## E2AU sensors

### Keeping moving machinery on the move

E2AU sensors are based on our proven E2A proximity sensor family, and offer the same exceptional quality and reliability for which this family has long been renowned.

Intended specifically for demanding applications in moving machinery such as refuse-disposal trucks, earth-moving equipment and construction and agricultural vehicles, the sensors meet and even exceed today's most severe regulatory standards for moving vehicles. These include e1 type approval (eMark) according to the European Automotive Directive 95/54/EC and electro-magnetic noise immunity up to 100 V/m according to ISO 11452-2.

Their exceptionally rugged construction, including a tough cable connection, sealing against water and dust to IP69K, and their resistance to vibration, mechanical shock and temperature extremes, means these sensors are well able to share the tough working life and conditions of today's utility vehicles.



Resistant to mechanical abuse.



Resistant to electromagnetic disturbances.



Resistant to vibrations.

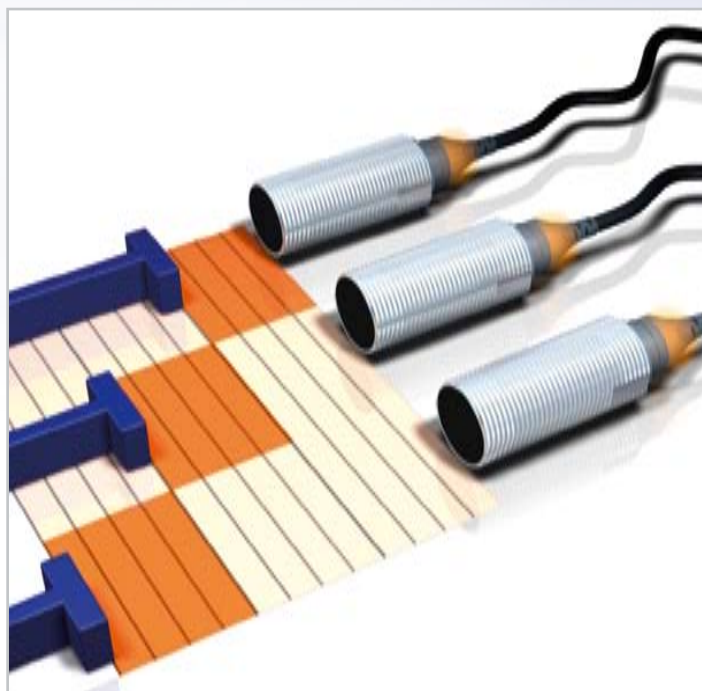


## E2AU

## E2A3 sensors

### Triple sensing distance for enhanced reliability

Our E2A3 sensors offer sensing distances up to 3 times the standard distance defined by CENELEC, greatly reducing the likelihood of the sensing surface being struck and perhaps damaged by moving machine parts. Thanks to the use of optimised sensing circuitry and new sensor geometry, the sensor is able to send a stop signal to the machine much earlier than standard- or double-distance sensors without any compromise to sensor performance.



## E2AX sensors

### Explosion protection in dusty environments

Intended for use in potentially explosive atmospheres using substances from sawdust to flour, E2AX sensors meet demanding regulatory requirements governing explosion protection - including ATEX certification Group II category 3D (94/9/EG Appendix VIII).

To minimise the possibility of ignition from exposed circuitry, their robust, hermetic housings are designed to withstand mechanical shock without fracture, and the sensors also feature a special retaining bracket to prevent the cable being detached during operation.



The Ball Drop Test is part of the ATEX approval ensuring high mechanical protection of electronic parts.

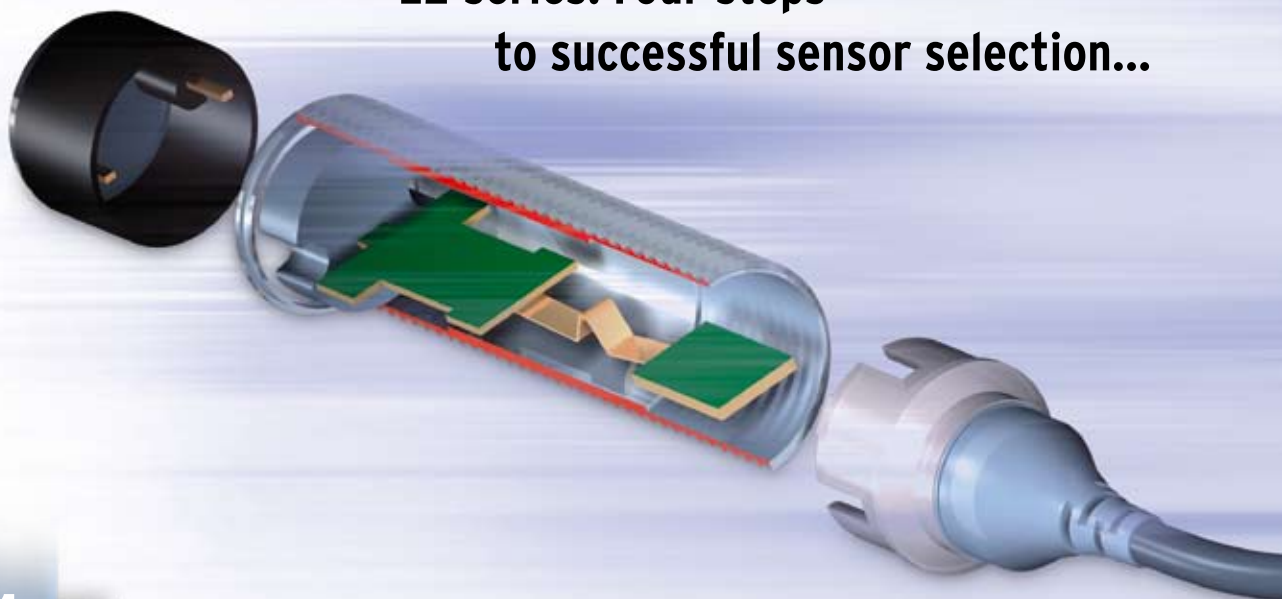
ATEX certification, which is done by an independent notified body, relates not just to the products but also to the production facility which must provide a regime of full traceability in the event that a malfunction occurs leading to an explosion.



**E2AX**



## E2 series: Four steps to successful sensor selection...



1

### Choose the performance you need...

- Sensing distances: single, double, triple
- Frequencies: standard, alternative, high



2

### Choose the housing fitting your environment...

- Materials: plastic, brass, stainless steel, anti-microbial,
- Sizes: from 3 mm diameter to M30, short & long body style



3

### Choose the output fitting your machine concept...

- Electrical: DC 2-wire, DC 3-wire, AC 2-wire
- Functionality: normally open, normally closed, antivalent (NO+NC)



4

### Choose the connection fitting your wiring concept...

PVC, PUR,  
M8, M12, industry special connectors  
M8, M12



Omron's modular production and design concept – provides easy selection to ensure competitiveness for your machine production... And for specialist applications...

Please contact your OMRON representative for information about our complete portfolio.



## Wide range of models available

special sizes	special shapes	special functions
E2EC, E2E small diameter	E2S, TL-T, TL-W, E2Q2	ZX-E, E2C, E2EQ, E2FQ, ...
		

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