



ifm efector



Stop replacing proximity sensors!

Try ifm metal face sensors – install once and forget



ifm metal face inductive sensors



High performance metal face inductive proximity sensors at a great value

Sensors that offer a great value should not compromise performance or quality. As a leading manufacturer of sensors and controls, ifm provides a complete line of robust metal face inductive proximity sensors that are designed for real-world application environments.


- **Tested to extremes:** ifm sensors endure rigorous testing to ensure reliable performance in extreme plant floor environments such as food processing, machining, welding and stamping.
- **Innovative production techniques:** ifm incorporates technologies such as extended sensing ranges, one-piece stainless steel construction, and metal face technology to ensure high performance.
- **Best value:** Stop replacing traditional proximity sensors and switch to ifm metal face sensors. With a great price-to-performance value, ifm sensors can be applied throughout a plant without increasing total installation costs.

ifm has the solutions to your sensing challenges



Reliability

Challenge: Downtime is common due to plastic sensors that fail from liquid ingress, damage from target impact, and overall wear from high shock and vibration.

 **ifm solution:** ifm's non-contact, zero-leak, all-metal sensors are so robust that they may outlast the life of your machines! Our highly durable sensors are completely sealed against ingress and carry protection ratings of IP67, IP68 and IP69K.



Application Environment


Challenge: It's difficult to find the right sensor that's compatible with my specific application environment.

 **ifm solution:** ifm designs and tests metal face sensors for specific environments to ensure reliable performance in harsh industrial applications. Sourcing materials are selected for actual plant floor conditions. In food applications and machining processes, ifm's 316 stainless steel sensors can withstand harsh washdowns and chemicals. In metal forming conditions ifm sensors incorporate protective weld-slag resistant coatings.



Cost of Metal Face Technology

Challenge: Traditional metal face sensors are expensive. Due to the high cost, these sensors can only be used in harsh environments.

 **ifm solution:** ifm offers metal face sensors that are competitively priced compared to traditional plastic face sensors. With a starting list price of only **\$60.00**, it's now possible to apply ifm metal face sensors throughout a plant without increasing total install cost.



Delivery Time

Challenge: The machine is ready to ship, but the supplier can't deliver the proximity switches on time.

 **ifm solution:** ifm has a full production facility and distribution center located in Exton, PA. ifm carries high levels of stock that can meet your just-in-time delivery needs. Don't worry about the quantity – just tell us the shipping method and we'll deliver to your plant, on time.

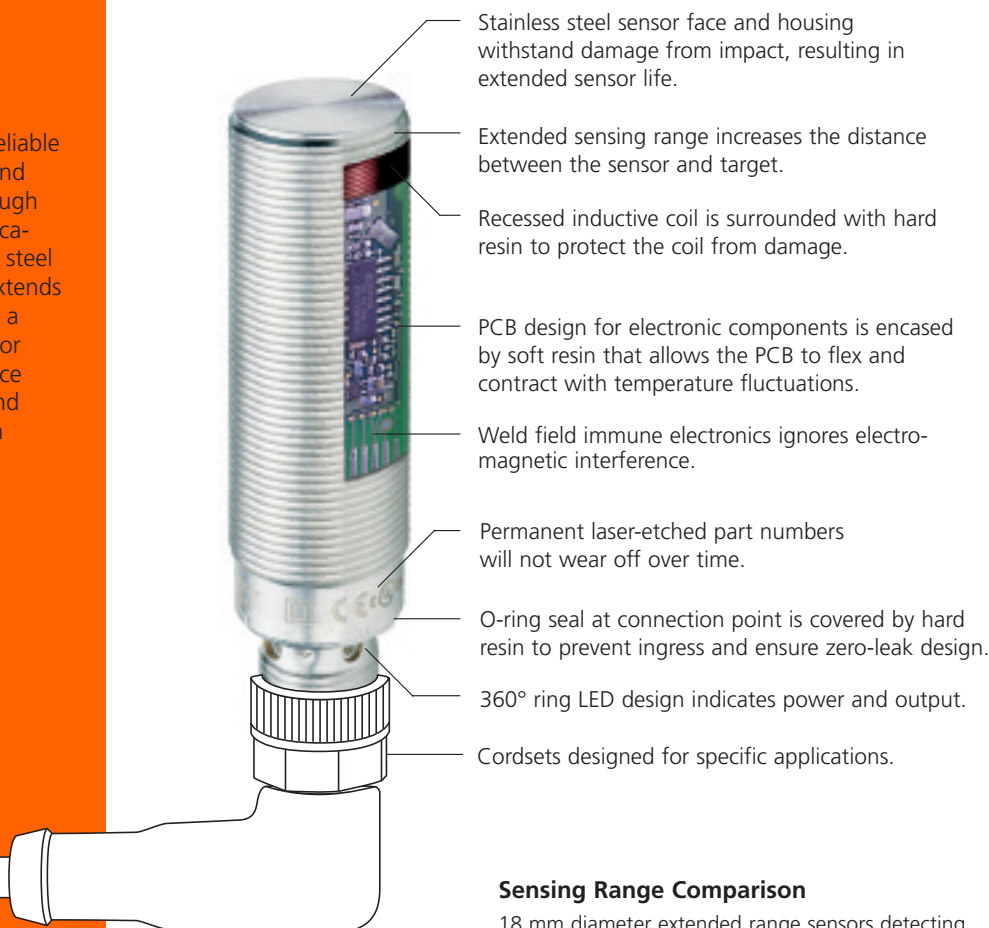


Metal face technology design dramatically improves life-in-application and increases production uptime



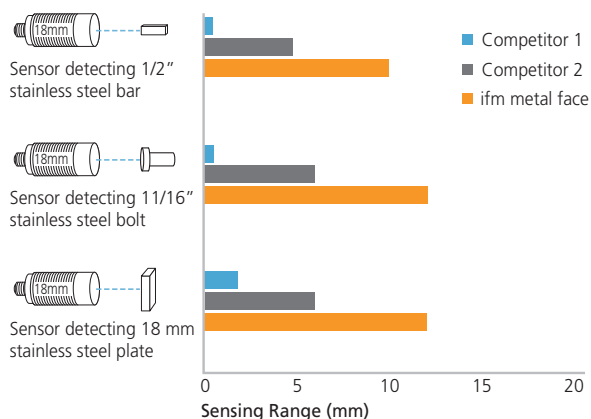
ifm metal face sensors offer reliable performance and durability in tough industrial applications. Stainless steel construction extends

the sensor's life-in-application by a factor of 15 compared to teflon or plastic face sensors. ifm metal face sensors increase plant uptime, and its price point is the best value in the market.



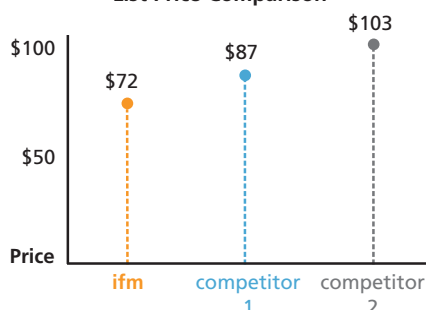
Sensing Range Comparison

18 mm diameter extended range sensors detecting various target sizes



ifm's extended range, metal face sensors far surpass traditional metal face sensors in sensing range.

List Price Comparison



ifm's 18 mm diameter extended range sensor (IGT249) for food and beverage applications is compared to list prices of two M18 sensors from competing brands.

ifm metal face sensors are designed for specific industries and environments



Food and beverage

ifm metal face sensors can withstand extreme washdowns and resist aggressive chemicals.

Applications:

*Food Processing
Beverage
Dairy*



Oils and coolants

Robust metal face sensors resist liquid ingress from oils and coolants used in the machining process.

Applications:

*Machine Cutting
Deburring
Milling
Broaching*














Welding and stamping

ifm metal face sensors are designed with a high temperature weld slag resistant coating that withstands build-up.

Applications:

*Resistance Welding
Shearing
Stamping*

M8 Diameter	 Sensing face: 316 stainless steel Flush mount: 2 mm sensing range	 Sensing face: 316 stainless steel and weld slag resistant coating Flush mount: 2 mm sensing range	
M12 Diameter	 Sensing face: 316 stainless steel Flush mount: 3 mm sensing range Non-flush mount: 6 mm sensing range	 Sensing face: 316 stainless steel Flush mount: 3 mm sensing range	 Sensing face: 316 stainless steel and weld slag resistant coating Flush mount: 3 mm sensing range
M18 Diameter	 Sensing face: 316 stainless steel Flush mount: 5 mm sensing range Non-flush mount: 12 mm sensing range	 Sensing face: 316 stainless steel Flush mount: 5 mm sensing range	 Sensing face: 316 stainless steel and weld slag resistant coating Flush mount: 6 mm sensing range
M30 Diameter	 Sensing face: 316 stainless steel Flush mount: 10 mm sensing range Non-flush mount: 25 mm sensing range	 Sensing face: 316 stainless steel Flush mount: 10 mm sensing range	 Sensing face: 316 stainless steel and weld slag resistant coating Flush mount: 12 mm sensing range
	Full product line on page 5.	Full product line on page 6.	Full product line on page 7.



Inductive sensors for food and beverage

Stainless steel sensors are compatible with industrial cleaning solutions and high temperature (0 to 100°C) applications

In food and beverage applications, proximity sensors are pressure cleaned with caustic and acid solutions. Traditional proximity switches can fail due to ingress and corrosion. ifm sensors are manufactured with stainless steel housings that are chemical compatible with industrial cleaning solutions and will not corrode. The sensors can withstand temperature fluctuations and resist damage from target impact resulting in extended sensor life.



In food production, harsh chemicals are used during cleaning cycles. ifm metal face, zero-leak sensors can resist aggressive media and will not corrode.



Stainless steel sensors resist ingress during high-pressure cleanings

► **STARTING AT \$65**

Challenges with side sensing

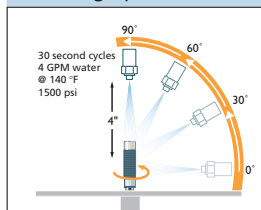
Side sensing challenges can cause traditional sensors to indicate false outputs by detecting metal near the sensor face. ifm's metal face sensors are not affected by materials surrounding the sensor and offer consistent, reliable detection.



Tested to extremes for harsh conditions

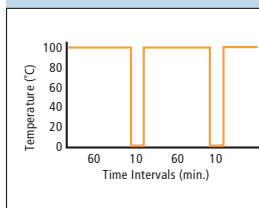
ifm stainless steel sensors are subjected to a variety of tests that insure reliable performance in food and beverage applications.

IP69K high-pressure test






Sensors are exposed to a 1500-psi spray at a 4" distance. The 140° F water is sprayed in 30-second cleaning cycles.

Thermal shock test



Sensors are subjected to temperatures fluctuations between 0° C and 100° C in short time intervals.

Selection chart

Model	Dimensions (mm)	Sensing Range	Output	Part No.	List Price
	M12 / L = 60	3 mm flush	PNP	IFT 240	\$65.00
	M12 / L = 60	3 mm flush	NPN	IFT 244	\$65.00
	M12 / L = 70	6 mm nonflush	PNP	IFT 245	\$70.00
	M12 / L = 70	6 mm nonflush	NPN	IFT 246	\$70.00
	M18 / L = 70	5 mm flush	PNP	IGT 247	\$67.00
	M18 / L = 70	5 mm flush	NPN	IGT 248	\$67.00
	M18 / L = 70	12 mm nonflush	PNP	IGT 249	\$72.00
	M18 / L = 70	12 mm nonflush	NPN	IGT 250	\$72.00
	M30 / L = 70	10 mm flush	PNP	IIT 228	\$71.00
	M30 / L = 70	10 mm flush	NPN	IIT 230	\$71.00
	M30 / L = 70	25 mm nonflush	PNP	IIT 231	\$76.00
	M30 / L = 70	25 mm nonflush	NPN	IIT 232	\$76.00

ifm's metal face sensors far surpass traditional sensors in sensing range and robustness.

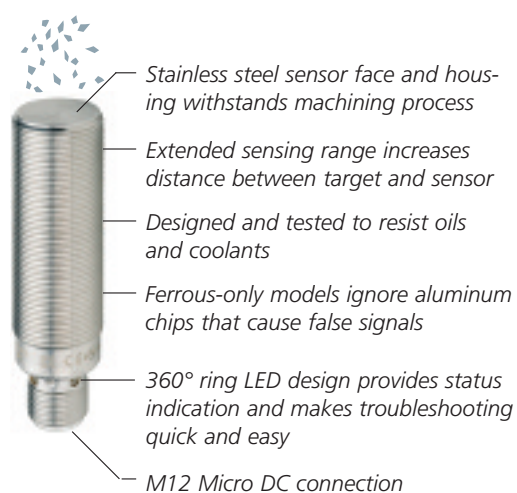


Inductive sensors for oils and coolants

Robust, stainless steel housings withstand liquid ingress from oils and coolants used in the machining process

In metalworking applications, proximity sensors are directly exposed to harsh environmental conditions such as synthetic coolants, oils and metal chips. The oils and coolants used can seep inside traditional proximity switches causing component failure and sensing range fluctuations. ifm proximity sensors for oils and coolants are designed and tested to perform in these applications. The sensor's stainless steel housing withstands the machining process, resists harsh chemicals and ignores metal chips.

Resists synthetic oils, coolants and metal chips in the machining process



► **STARTING AT \$60**



ifm zero-leak sensors are rated IP68 against liquid ingress and can resist the synthetic oils and coolants used in metalworking.

Available ferrous-only models

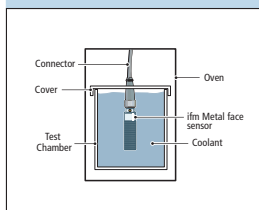
ifm's ferrous-only technology can be used inside machining centers where there is a high density of aluminum chips. The sensor will ignore the aluminum chips that can cause false triggers. The sensor's stainless steel sensing face prevents aluminum chips from adhering to and embedding in the face of the sensor.



Testing that insures reliable performance

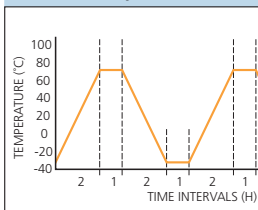
ifm metal face sensors for oils and coolants are designed and tested to provide reliable position detection in the extreme conditions found in these harsh applications.

IP68 coolant test



Sensors are completely submerged in industrial oils and coolants at a temperature of 176° F. The sensors are tested to ensure no change in sensing characteristics.

1000-hour cycle test



Sensors are subjected to temperature cycles between -30° C and 70° C to apply stress on the electronics and housing and to check overall design integrity.

Selection chart

Model	Dimensions (mm)	Sensing Range	Output	Part No.	List Price
	M8 / L = 50	2 mm flush	PNP	IEC 201	\$62.00
	M8 / L = 50	2 mm flush	NPN	IEC 202	\$67.00
	M8 / L = 60	2 mm flush	PNP	IEC 200	\$62.00
	M8 / L = 60	2 mm flush	NPN	IEC 203	\$67.00
	M12 / L = 60	3 mm flush	PNP	IFC 258	\$60.00
	M12 / L = 60	3 mm flush	NPN	IFC 266	\$73.00
	M18 / L = 70	5 mm flush	PNP	IGC 248	\$62.00
	M18 / L = 70	5 mm flush	NPN	IGC 252	\$67.00
	M30 / L = 70	10 mm flush	PNP	IIC 224	\$67.00
	M30 / L = 70	10 mm flush	NPN	IIC 226	\$67.00
	M12 / L = 60	2.5 mm flush	PNP	IFC 263	\$65.00
<i>ferrous only</i>	M12 / L = 60	2.5 mm flush	PNP	IFC 264	\$65.00
	M18 / L = 70	4.5 mm flush	PNP	IGC 249	\$67.00
<i>ferrous only</i>	M18 / L = 70	4.5 mm flush	PNP	IGC 250	\$67.00



Inductive sensors for welding and stamping

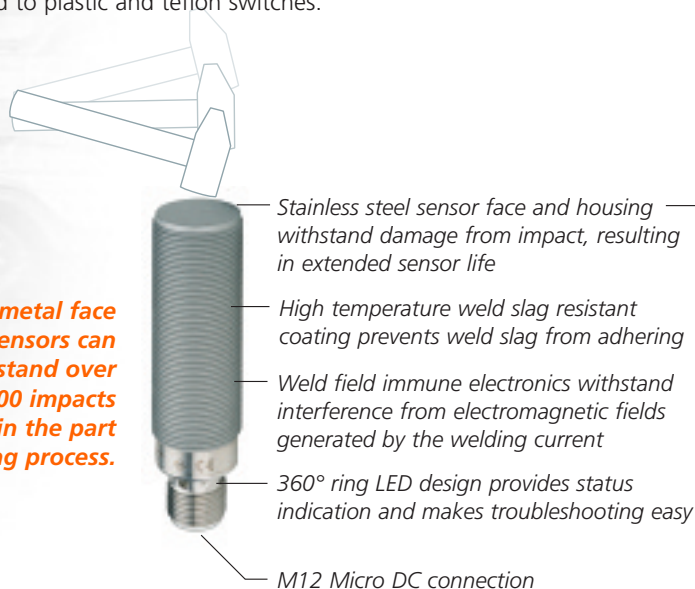
Stainless steel sensors with high temperature, weld-slag resistant coating offer long life-in-application

There are two main causes for sensor failure in welding and stamping applications: impact and abrasion. Traditional plastic switches are prone to failure due to continuous impact in the part-loading process. Weld slag build-up can create a coating that's difficult to remove. ifm's sensors are manufactured with a 316 stainless steel housing and high-temperature weld-slag resistant coating that extends the sensor's life-in-application by a factor of 15 compared to plastic and teflon switches.



ifm metal face sensors can withstand the harsh impact from the part loading process in manufacturing cells.

ifm metal face sensors can withstand over 500,000 impacts in the part loading process.



► **STARTING AT \$61**



Challenge

Life expectancies of plastic and teflon sensors are greatly reduced from weld-slag build-up and physical impact from the part-loading process in manufacturing cells.



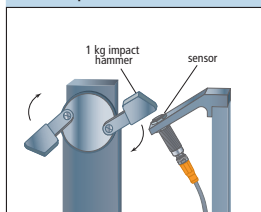
Solution

ifm's stainless steel construction and high temperature weld-slag resistant coating withstands weld slag build-up and damage from physical impact.

Designed and tested to operate in the harshest welding and stamping applications

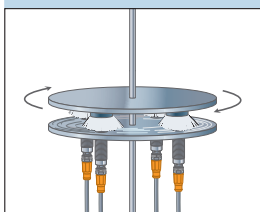
ifm metal face sensors for welding and stamping are subjected to conditions that far exceed real-world application conditions.

ifm Impact Test



ifm sensors are hit twice every second by a 1 kg hammer. This represents the force of a large part being loaded in a cell. ifm's sensors can withstand 500,000 impacts compared to plastic sensors that failed after 32,000 impacts.









ifm Abrasion Test



In the rotary test fixture, ifm metal face sensors are placed in direct contact with six wire-wheel brushes. Sensors are scoured for one million passes to simulate the abrasive cleaning process.

To learn more about ifm's testing, visit www.ifm.com/us/welding and click on the "Learn More" button.

Selection chart

Model	Dimensions (mm)	Sensing Range	Output	Part No.	List Price
	M8 / L = 60	2 mm flush	PNP	IER 200	\$65.00
	M8 / L = 60	2 mm flush	NPN	IER 201	\$65.00
	M12 / L = 70	3 mm flush	PNP	IFR 200	\$61.00
	M12 / L = 70	3 mm flush	NPN	IFR 202	\$61.00
	M18 / L = 70	5 mm flush	PNP	IGR 200	\$63.00
	M18 / L = 70	5 mm flush	NPN	IGR 202	\$63.00
	M30 / L = 70	10 mm flush	PNP	IIR 200	\$66.00
	M30 / L = 70	10 mm flush	NPN	IIR 202	\$66.00

ifm metal face sensors are priced to be used as a plant standard – not just a solution for harsh applications.



ifm efector



You can count on our service team to be a reliable partner. That means easy order placement and knowledgeable technical support. Your time is too valuable to waste.

ifm product lines

Inductive sensors
Cylinder sensors
Photoelectric sensors
Vision sensors
Capacitive sensors
Safety sensors
Pressure sensors
Flow sensors
Temperature sensors
Level sensors
Vibration monitoring
Valve sensors
Power supplies
AS-i bus system
Safety-at-Work
Identification products
Cable assemblies
Mobile controls

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Why select ifm for your sensors and controls needs?

ifm people. The ifm team of employees is committed to helping you succeed in your business. We directly service and work with over 90,000 customers.

ifm products. For over 40 years, ifm has developed, manufactured, and marketed sensors to industries that include assembly and robotics, automotive, material handling, packaging, metal forming, plastics, and food and beverage. We offer a complete family of position sensors, fluid sensors, diagnostic systems, networking products, and wiring solutions.

Quality. There can be no compromise in the quality and reliability of sensors that are applied in your production facility. The ifm new product development process incorporates specific testing for sensors and controls to withstand environments with shock and vibration, electrical noise and temperature fluctuations.

Investment in R&D. Developing new products that increase uptime and productivity is a core belief of our company. We apply practical innovation to simplify technology and develop products that can have a positive impact on your production process.

Application know-how. We have over 40 years of experience in working with industrial automation applications. Our knowledgeable team of technical support engineers will work with you to recommend the right solution, the first time.

ifm business philosophy. ifm provides a knowledgeable and courteous service center team to assist with order placement and technical support. We offer an efficient distribution center for accurate and on-time delivery of products. ifm publishes list prices in literature and website and always stands behind the quality and performance of our products.

Global presence with local focus. With more than 3500 dedicated ifm employees in over 70 countries, you can count on local support all over the world.

ifm efector – close to you!

Replace your existing plastic switches with ifm metal face inductive sensors.

To get started, call an ifm technical specialist.



800-234-7769

or visit



www.ifm.com/us/inductive