

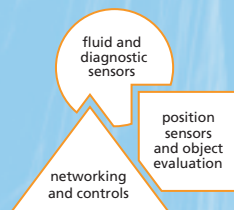
ifm efector



Robust Metal Face Sensors for Welding and Stamping Applications



Inductive proximity sensors



ifm efector – close to you!



A new benchmark for price / performance in metal forming applications

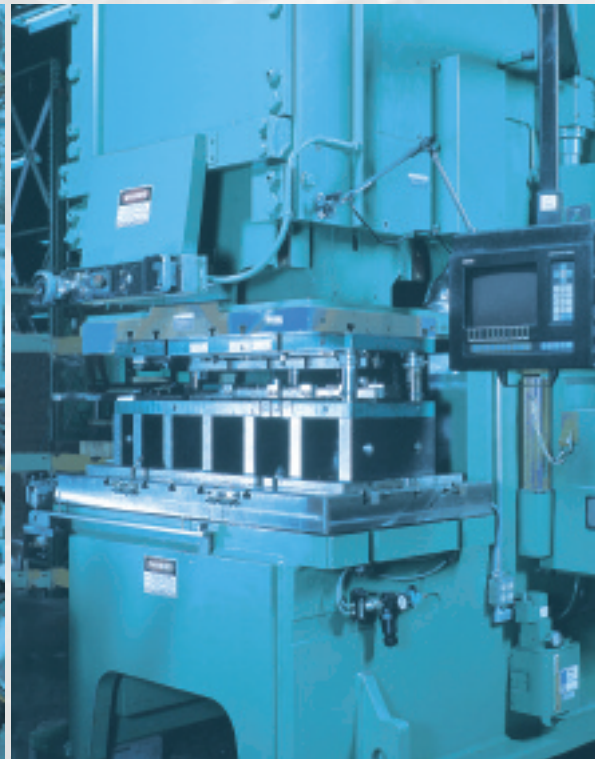
Robust metal face sensors for the harshest industrial environments

ifm's metal face sensors are designed and tested to provide reliable position detection in the toughest welding and metal stamping applications. Stainless steel construction and weld-slag resistant coating extend the sensor's life in application by a factor of 15 compared to plastic or teflon face sensors.

ifm's metal face sensor offers the best value in the market, providing all the benefits of a metal face sensor at a plastic sensor price.



Welding applications



Metal stamping applications

Challenge

Plastic and teflon sensors life expectancies are greatly reduced from weld-slag buildup and physical impact from the part-loading process in manufacturing cells.

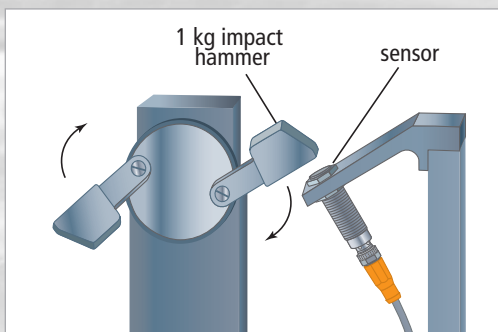


Solution

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

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

ifm Impact Test



Application challenge

Plastic and teflon face sensors can be damaged from continuous physical impact from the part loading process in manufacturing cells.

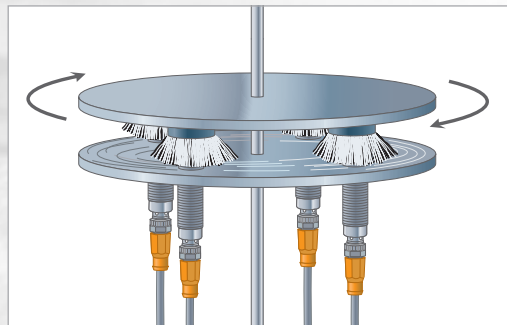
ifm impact test

ifm engineers developed an impact test that simulates the extreme metalforming conditions. In the test fixture, the sensor is hit twice every second by a 1 kilogram hammer. The impact test conditions are harsher than real-world applications and are designed to accelerate time-to-failure and validate product design. For comparison, plastic and teflon face sensors were also tested.

Results

The metal face sensor withstood over 500,000 impacts in the test fixture. The plastic and teflon face sensors failed after 32,000 impact.

ifm Abrasion Test



Application challenge

In a welding fixture, proximity sensors can fail when weld slag builds up. To remove the slag, abrasive cleaning techniques such as wire brushes and tools are used that can end up damaging the sensor. Furthermore, the sensing face can gradually wear away from impact in the part loading process.

ifm abrasion resistance test

ifm engineers developed an abrasion test to replicate the weld slag cleaning process. The rotary test fixture placed several ifm metal face sensors in direct contact with six wire wheel brushes. The wire brushes continuously rotated over the sensor faces. For comparison, plastic and teflon face sensors were also tested.

Results

After one million passes, the ifm metal face sensor was still operable, providing 100% of its sensing range. After 2,000 passes, the plastic and teflon sensor faces had deteriorated and the sensors failed to operate.

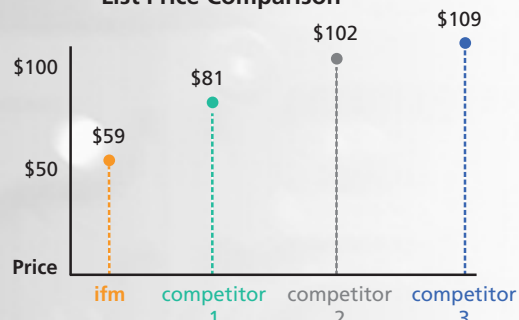
The right combination of performance and price

Priced lower than competing metal-faced sensors*, ifm's new sensors are an exceptional benchmark for value.

High performance, longer life-in-application and a low price point: The ifm metal face sensors can now be used as a plant standard, not just a solution for harsh applications.

The bottom line: higher uptime and low operating costs. It's the right combination of performance and price that will result in savings for your manufacturing facility.

List Price Comparison



* Compared to list prices of three M12 sensors from competing brands.

Sensor design dramatically improves life-in-application for welding and stamping processes

Application challenges in metal forming

There are two main causes for sensor failure in welding and stamping applications: impact and abrasion.

Traditional plastic and teflon face sensors are prone to failure because of continuous physical impact from the part-loading process in manufacturing cells. Furthermore, in applications where weld slag builds up, these sensors can also be damaged by abrasive cleaning processes.

ifm solution



ifm metal face sensors are specifically designed and tested for welding and

stamping applications. Stainless steel construction and a high temperature weld slag resistant coating extend the sensor's life-in-application by a factor of 15 compared to teflon or plastic face sensors. The metal face sensor's durability increases plant uptime, and its price point is the best value in the market.



Stainless steel sensor face and housing withstand damage from impact, resulting in extended sensor life.

Extended sensing range increases the distance between the sensor and target.

High temperature weld slag resistant coating prevents weld slag to adhere to sensor.

Weld field immune electronics

Permanent laser-etched part numbers will not wear off over time.

360° ring LED design indicates power and output.





Cordsets designed for welding applications feature cable material rated for high temperatures and coupling nuts with a weld slag resistant coating

Great Value

A new benchmark for price/performance
List prices starting at \$59.00



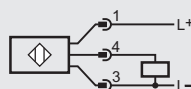
Inductive proximity sensors

| Housing | Dimensions [mm] | Sensing Range [mm] | Max. Load Current [mA] | Supply Current [mA] | Part No. | Unit Price (USD) |
|--|-----------------|--------------------|------------------------|---------------------|----------|------------------|
| M12 connector · 3-wire DC PNP · Normally open output · 10...36 V DC | | | | | | |
|  | M8 / L = 60 | 2 flush | 100 | < 20 | IER200 | \$63.00 |
|  | M12 / L = 70 | 4 flush | 100 | < 20 | IFR 200 | \$59.00 |
|  | M18 / L = 70 | 6 flush | 100 | < 20 | IGR 200 | \$61.00 |
|  | M30 / L = 70 | 12 flush | 100 | < 10 | IIR 200 | \$64.00 |




Technical data

| Type | Description |
|-------------------|---|
| Supply voltage | 10 - 36 VDC |
| Max. load current | 100 mA |
| Voltage drop | <2.5 V |
| Switching freq. | IFR200, IGR200, IIR200: 2 Hz; IER200: 100 Hz |
| Protection rating | IP67 |
| Operating temp | 32...185°F (0...85 °C) |
| Power LED | Green |
| Output LED | Yellow |
| Housing material | Stainless steel face and housing, weld slag resistant coating |
| Connection | M12 connector |

Wiring diagram




Cordsets

| 4-pin M12 Micro DC | Part No. | Unit Price (USD) |
|--|----------|------------------------|
|  | 2 meter | EVW 001 \$13.50 |
| | 5 meter | EVW 002 \$17.50 |
| | 10 meter | EVW 003 \$23.00 |
|  | 2 meter | EVW 004 \$13.50 |
| | 5 meter | EVW 005 \$17.50 |
| | 10 meter | EVW 006 \$23.00 |
|  | 2 meter | E 18402 \$14.00 |
| | 5 meter | E 18403 \$19.00 |
| | 10 meter | E 18404 \$27.00 |
|  | 2 meter | E 18405 \$14.00 |
| | 5 meter | E 18406 \$19.00 |
| | 10 meter | E 18407 \$27.00 |

* Available June 2008

Mounting brackets

| Description | Part No. | Unit Price (USD) |
|--|----------|------------------|
|  M8 L bracket | U 20304 | \$4.25 |
| M12 L bracket | U 20301 | \$4.25 |
| M18 L bracket | U 20302 | \$4.50 |
| M30 L bracket | U 20303 | \$4.75 |



Learn by going to our website
www.ifm.com/us/metalface

Calculate your savings

Learn how much you'll save with ifm's metal face sensors vs. plastic sensors, try our savings calculator online.

See live video of testing

Watch ifm's impact and abrasion tests online. See how the metal face sensor withstands impact from a 1kg hammer and continuous passes from wire wheel brushes.

Order a free sample

Receive a free sample to try in your application. Complete the Free Sample Order Form online and enter code **MFB001**.

Contact our Service Center at 800-441-8246 to speak with one of our trained engineers, mention code **MFB001**.

ifm product line catalogs



Position sensors and object evaluation

- Inductive sensors
- Inductive safety technology
- Magnetic and cylinder sensors
- Capacitive sensors
- Actuator and valve sensors
- Photoelectric sensors
- Object evaluation systems



Fluid and diagnostic sensors

- Level sensors
- Flow sensors
- Pressure sensors
- Temperature sensors
- Diagnostic systems



Networking and controls

- Identification systems
- Control systems for mobile vehicles
- Evaluation systems, power supplies
- AS-i bus system
- Connection technology

ifm efector North America

ifm efector USA
782 Springdale Drive
Exton, PA 19341
800-441-8246
www.ifm.com/us

ifm efector Canada
700 Dorval Drive
Oakville, Ontario L6K 3V3
1-800-441-8246
www.ifm.com/ca

ifm efector Mexico
Anillo Periferico 1816-1
Col. Hacienda San Jeronimo
Monterrey, N.L. 64630
01-800-813-4363
www.ifm.com/mx

Lit. No. B20509

