

IMS

Inductive sensors for mobile machines

SICK
Sensor Intelligence.

Advantages



Maximum operating times of your machine

Mobile machines can be used in any weather. Impacts and vibrations as well as rain, snow, frost, dirt, oil residues, cold or heat heavily impact the sensors installed in the machines. Other factors are aggressive machine cleaning processes. IMF inductive proximity sensors master these challenges with their tight and rugged design. The IP68 and IP69K enclosure ratings, high impact and vibration resistance as well as wide specification limits enable maximum operating times for your machine.



Winter in Siberia: -40 °C. While others freeze, the IMS works perfectly



Grain fields in summer: Even at very high temperatures, the IMS shows no weakness



The very tight IMS housing withstands regular high-pressure cleaning without any problems



Ready for use in any weather



Stable and fault-free processes: The more stable and fault-free the processes, the higher the throughput.

The IMS inductive proximity sensors demonstrate high compatibility with electromagnetic faults up to 100 V/m, thereby tolerating even motor vehicle electrical system pulses effortlessly. This compatibility, combined with the high-precision SICK ASIC technology, ensures optimal functionality of the mobile machines.



High resistance against electromagnetic faults



High-precision processes, high throughput

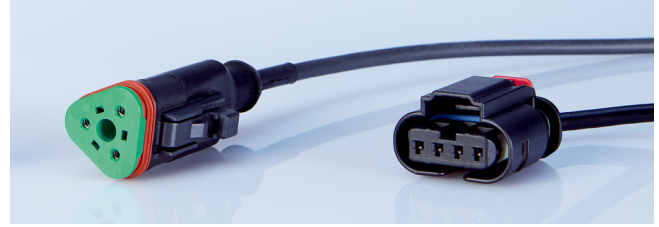


Extensive portfolio with application-specific special variants

The IMS inductive proximity sensors from SICK cover a large range of relevant industry applications. Even in the event of specific customer requirements, SICK offers quick, uncomplicated tailored sensor solutions.



Implementation of mobile plug connectors common in the industry



Tailored solutions



With specific variants, IMS sensors cover a large range of relevant industry applications.



Technical data overview

| | |
|---------------------------------------|-------------------------------------------------------------------------|
| Housing | Metric |
| Thread size | M12 x 1 M18 x 1 M30 x 1.5 |
| Diameter | Ø 12 mm ... Ø 30 mm (depending on type) |
| Sensing range S_n | 2 mm ... 20 mm (depending on type) |
| Housing material | Stainless steel V2A Stainless steel V4A Brass (depending on type) |
| Enclosure rating | IP68, IP69K |

Product description

The IMS inductive proximity sensors combine tried-and-tested, rugged SICK mechanics with advanced electronics. With the E1 type approval by the German Federal Motor Transport Authority, the sensors are especially well-suited for use in mobile machines. The IMS products feature protection against load dump, electromagnetic compatibility and a large voltage range of 7.2 V to 60 V DC. Versions with connecting cables offer enough hold for mobile male connectors due to the oil-resistant material and a 0.5 mm² cross section of these cables. The ambient temperature range is from -40 °C to +100 °C, thereby enabling sensor function in any weather.

At a glance

- Thread sizes: M12 to M30
- Large sensing ranges: 4 mm to 20 mm
- Electrical configuration: DC, 3-wire
- Enclosure rating: IP68, IP69K
- Ambient temperature: -40 °C to +100 °C
- Rugged stainless-steel housing; plastic sensing face
- Load dump protection and high electromagnetic compatibility of 100 V/m
- E1 type approval

Your benefits

- Maximum operating times due to rugged sensor technology, even in harsh environments that are subjected to severe weather conditions
- Stable and fault-free processes thanks to high electromagnetic compatibility and very precise detection
- Extensive portfolio with application-specific special variants
- Worldwide availability due to global SICK sales network and countless approvals

Fields of application

- Detection and positioning tasks in balers
- Monitoring of belt speed in harvesters
- Detection of ring mount position in excavators
- Monitoring of loading area position in dump trucks
- Detection of aerial ladder end position in fire trucks
- Positioning of drums in garbage trucks
- Detection tasks in aircraft tractors

Ordering information

Other models and accessories → www.sick.com/IMS

- **Sub product family:** IMS12
- **Cylindrical thread design:** M12
- **Installation type:** flush
- **Electrical wiring:** DC 3-wire
- **Housing:** Standard design

| Sensing range S _n | Switching output | Output function | Special features | Connection type | Type | Part no. |
|-----------------------------------------|------------------|-----------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------|----------|
| 2 mm | NPN | NO | Resistant against coolant lubricants, Temperature resistance | Cable with Deutsch DT04-3P male connector, 3-pin, 0.8 m | IMS12-02BNSVUDSS03 | 1143023 |
| 4 mm | NPN | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS12-04BNOVU2S | 1097643 |
| | | | | Male connector M12, 4-pin ¹⁾ | IMS12-04BNOVC0S | 1097639 |
| | | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS12-04BNONU2S | 1103206 |
| | | | | Male connector M12, 4-pin ¹⁾ | IMS12-04BNONC0S | 1103202 |
| | | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS12-04BNSVU2S | 1097580 |
| | | | | Cable, 3-wire, 4 m | IMS12-04BNSVU4S | 1112289 |
| | | | Resistant to cleaning agents, Temperature resistance | Male connector M12, 4-pin ¹⁾ | IMS12-04BNSVC0S | 1097576 |
| | | | | Cable, 3-wire, 2 m | IMS12-04BNSNU2S | 1103182 |
| | PNP | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS12-04BPOVU2S | 1097642 |
| | | | | Male connector M12, 4-pin ¹⁾ | IMS12-04BPOVC0S | 1097638 |
| | | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS12-04BPONU2S | 1103205 |
| | | | | Male connector M12, 4-pin ¹⁾ | IMS12-04BPONC0S | 1103201 |
| | | NO | Resistant against coolant lubricants, Temperature resistance | Cable with Deutsch DT04-3P-E004 male connector, 3-pin, 0.3 m | IMS12-04BPSVUDSS01 | 1131899 |
| | | | | Cable, 3-wire, 2 m | IMS12-04BPSVU2S | 1097579 |
| | | | Resistant to cleaning agents, Temperature resistance | Male connector M12, 4-pin ¹⁾ | IMS12-04BPSVC0S | 1097575 |
| | | | | Cable, 3-wire, 2 m | IMS12-04BPSNU2S | 1103181 |
| Male connector M12, 4-pin ¹⁾ | IMS12-04BPSNC0S | 1103177 | | | | |

¹⁾ With gold plated contact pins.

- **Sub product family:** IMS12
- **Cylindrical thread design:** M12
- **Installation type:** non-flush
- **Electrical wiring:** DC 3-wire
- **Sensing range S_n :** 8 mm
- **Housing:** Standard design

| Switching output | Output function | Special features | Connection type | Type | Part no. | | |
|------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------|-----------------------------------------|-----------------|---------|
| NPN | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS12-08NNOVU2S | 1097645 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NNOVCOS | 1097641 | | |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS12-08NNONU2S | 1103208 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NNONCOS | 1103204 | | |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS12-08NNSVU2S | 1097582 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NNSVCOS | 1097578 | | |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS12-08NNSNU2S | 1103184 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NNSNCOS | 1103180 | | |
| | | PNP | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS12-08NPOVU2S | 1097644 |
| | | | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NPOVCOS | 1097640 |
| Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | | | IMS12-08NPONU2S | 1103207 | | |
| | Male connector M12, 4-pin ¹⁾ | | | IMS12-08NPONCOS | 1103203 | | |
| NO | Resistant against coolant lubricants, Temperature resistance | | Cable, 3-wire, 2 m | IMS12-08NPSVU2S | 1097581 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NPSVCOS | 1097577 | | |
| | Resistant to cleaning agents, Temperature resistance | | Cable, 3-wire, 2 m | IMS12-08NPSNU2S | 1103183 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS12-08NPSNCOS | 1103179 | | |

¹⁾ With gold plated contact pins.

- **Sub product family:** IMS18
- **Cylindrical thread design:** M18
- **Installation type:** quasi-flush
- **Electrical wiring:** DC 3-wire
- **Sensing range S_n :** 8 mm
- **Housing:** Standard design

| Switching output | Output function | Special features | Connection type | Type | Part no. |
|------------------|-----------------|--------------------------------------------------------------|-----------------------------------------|-----------------|----------|
| NPN | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BNOVU2S | 1097651 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BNOVCOS | 1097647 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BNONU2S | 1103214 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BNONCOS | 1103210 |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BNSVU2S | 1097588 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BNSVCOS | 1097584 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BNSNU2S | 1103190 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BNSNCOS | 1103186 |
| PNP | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BPVU2S | 1097650 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BPVCOS | 1097646 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BPONU2S | 1103213 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BPONCOS | 1103209 |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BPSVU2S | 1097587 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BPSVCOS | 1097583 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-08BPSNU2S | 1103189 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-08BPSNCOS | 1103185 |

¹⁾ With gold plated contact pins.

- **Sub product family:** IMS18
- **Cylindrical thread design:** M18
- **Installation type:** flush
- **Electrical wiring:** DC 3-wire
- **Sensing range S_n :** 8 mm
- **Housing:** Standard design

| Switching output | Output function | Special features | Connection type | Type | Part no. |
|------------------|-----------------|--------------------------------------------------------------|-----------------------------------------|--------------------|----------|
| PNP | NO | Resistant against coolant lubricants, Temperature resistance | Male connector M12, 4-pin ¹⁾ | IMS18-08BPSZC0SS03 | 1112343 |

¹⁾ With gold plated contact pins.

- **Sub product family:** IMS18
- **Cylindrical thread design:** M18
- **Installation type:** non-flush
- **Electrical wiring:** DC 3-wire
- **Sensing range S_n :** 12 mm
- **Housing:** Standard design

| Switching output | Output function | Special features | Connection type | Type | Part no. |
|------------------|-----------------|--------------------------------------------------------------|-----------------------------------------|-----------------|----------|
| NPN | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NNOVU2S | 1097653 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NNOVCOS | 1097649 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NNONU2S | 1103216 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NNONCOS | 1103212 |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NNSVU2S | 1097590 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NNSVCOS | 1097586 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NNSNU2S | 1103192 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NNSNCOS | 1103188 |
| PNP | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NPOVU2S | 1097652 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NPOVCOS | 1097648 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NPONU2S | 1103215 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NPONCOS | 1103211 |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NPSVU2S | 1097589 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NPSVCOS | 1097585 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS18-12NPSNU2S | 1103191 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS18-12NPSNCOS | 1103187 |

¹⁾ With gold plated contact pins.

- **Sub product family:** IMS30
- **Cylindrical thread design:** M30
- **Installation type:** flush
- **Electrical wiring:** DC 3-wire
- **Sensing range S_n :** 15 mm
- **Housing:** Standard design

| Switching output | Output function | Special features | Connection type | Type | Part no. | | |
|------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------|-----------------------------------------|-----------------|---------|
| NPN | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-15BNOVU2S | 1097659 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BNOVCOS | 1097655 | | |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS30-15BNONU2S | 1103222 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BNONCOS | 1103218 | | |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-15BNSVU2S | 1097596 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BNSVCOS | 1097592 | | |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS30-15BNSNU2S | 1103198 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BNSNCOS | 1103194 | | |
| | | PNP | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-15BPOVU2S | 1097658 |
| | | | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BPOVCOS | 1097654 |
| Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | | | IMS30-15BPONU2S | 1103221 | | |
| | Male connector M12, 4-pin ¹⁾ | | | IMS30-15BPONCOS | 1103217 | | |
| NO | Resistant against coolant lubricants, Temperature resistance | | Cable, 3-wire, 2 m | IMS30-15BPSVU2S | 1097595 | | |
| | | | Cable, 3-wire, 4 m | IMS30-15BPSVU4S | 1118941 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BPSVCOS | 1097591 | | |
| | Resistant to cleaning agents, Temperature resistance | | Cable, 3-wire, 2 m | IMS30-15BPSNU2S | 1103197 | | |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-15BPSNCOS | 1103193 | | |

¹⁾ With gold plated contact pins.

- **Sub product family:** IMS30
- **Cylindrical thread design:** M30
- **Installation type:** non-flush
- **Electrical wiring:** DC 3-wire
- **Sensing range S_n :** 20 mm
- **Housing:** Standard design

| Switching output | Output function | Special features | Connection type | Type | Part no. |
|------------------|-----------------|--------------------------------------------------------------|-----------------------------------------|-----------------|----------|
| NPN | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NNOVU2S | 1097661 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NNOVCOS | 1097657 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NNOVU2S | 1103224 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NNOVCOS | 1103220 |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NNSVU2S | 1097598 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NNSVCOS | 1097594 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NNSVU2S | 1103200 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NNSVCOS | 1103196 |
| PNP | NC | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NPOVU2S | 1097660 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NPOVCOS | 1097656 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NPONU2S | 1103223 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NPONCOS | 1103219 |
| | NO | Resistant against coolant lubricants, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NPSVU2S | 1097597 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NPSVCOS | 1097593 |
| | | Resistant to cleaning agents, Temperature resistance | Cable, 3-wire, 2 m | IMS30-20NPSVU2S | 1103199 |
| | | | Male connector M12, 4-pin ¹⁾ | IMS30-20NPSVCOS | 1103195 |

¹⁾ With gold plated contact pins.

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com