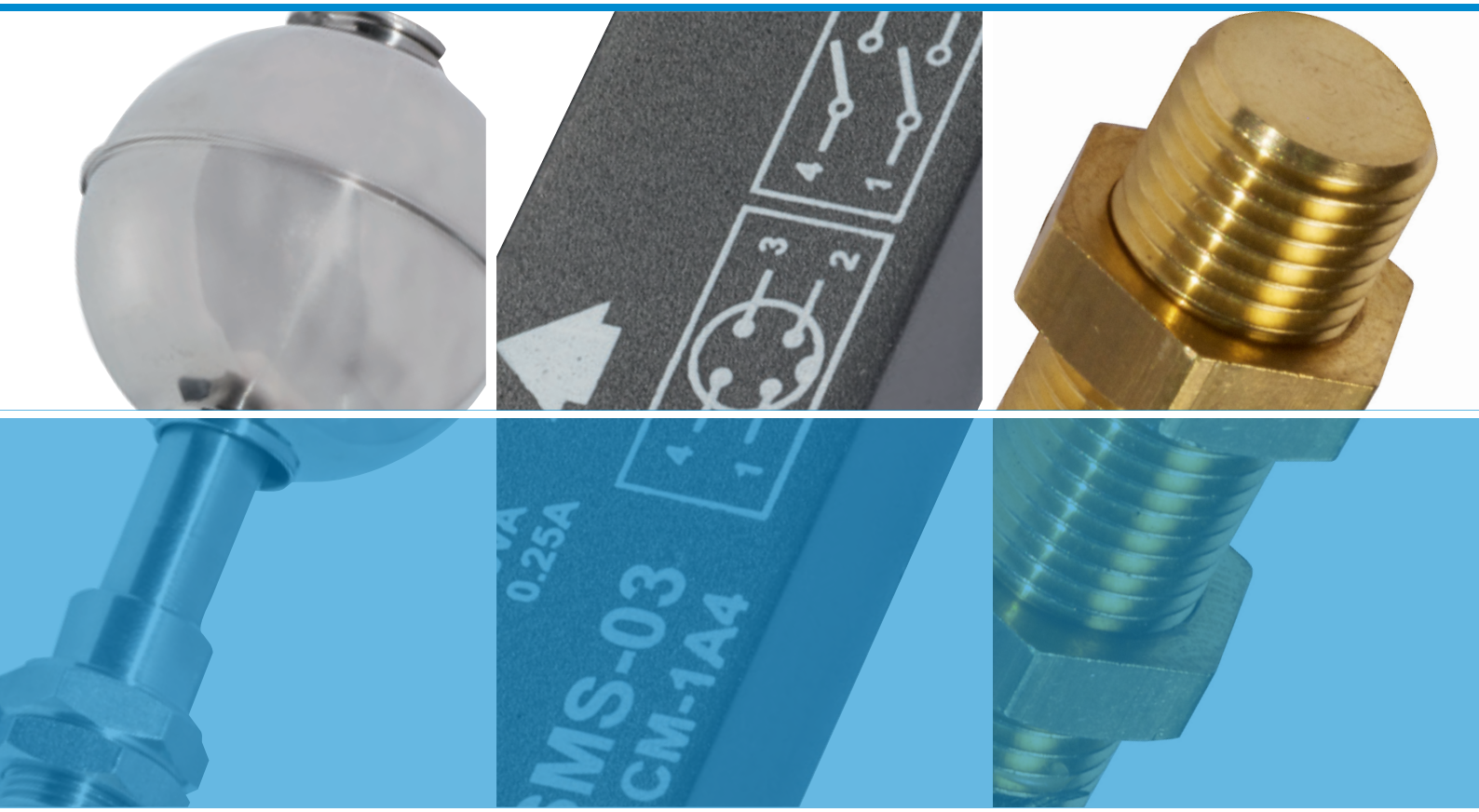
CARLO GAVAZZI
Automation Components

CARLO GAVAZZI



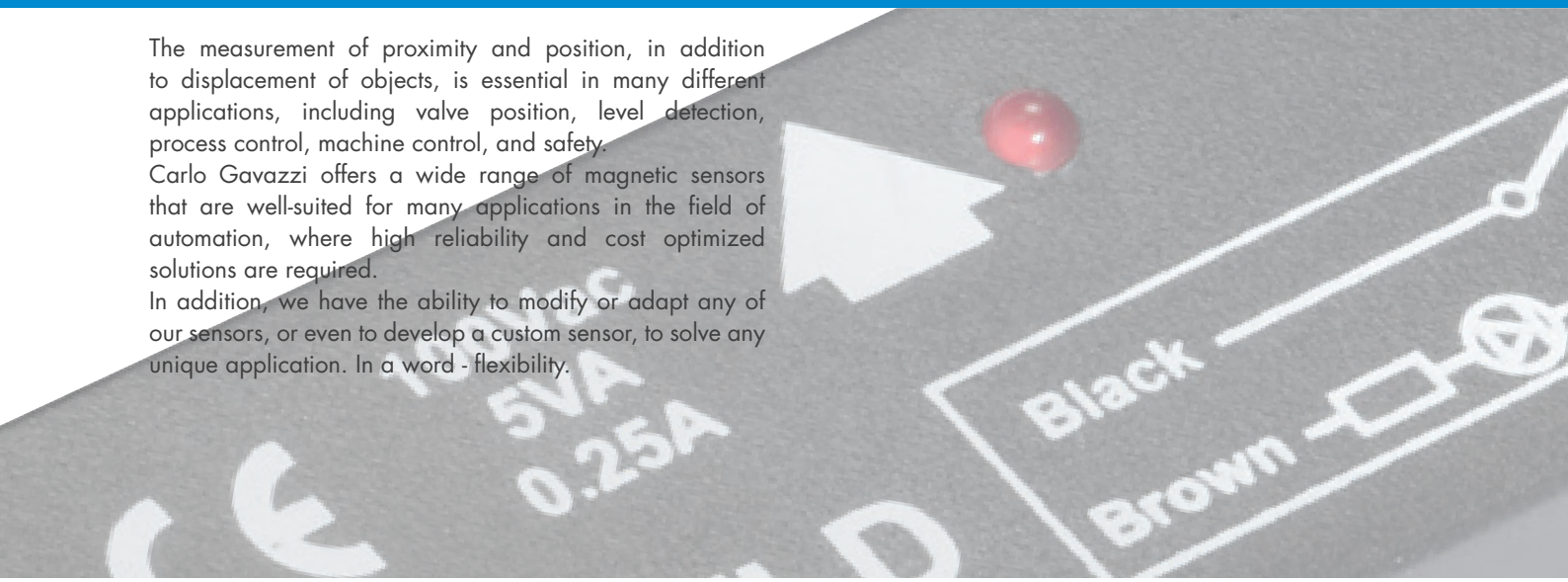

## Magnetic sensors

# Sensors

# Magnetic sensors

## Our range

The measurement of proximity and position, in addition to displacement of objects, is essential in many different applications, including valve position, level detection, process control, machine control, and safety.
Carlo Gavazzi offers a wide range of magnetic sensors that are well-suited for many applications in the field of automation, where high reliability and cost optimized solutions are required.
In addition, we have the ability to modify or adapt any of our sensors, or even to develop a custom sensor, to solve any unique application. In a word - flexibility.




Carlo Gavazzi magnetic sensors feature high versatility and a wide range of housing shapes and materials, for use in countless applications fixtures.
Our thirty-year commitment in the design and production of position and proximity sensors has been marked by our engagement to modifying any sensor to fit a customer's specific requirements. We can customize materials, shape, connections and more, to meet any request.
Just let us know your needs.



## Keyword: Flexibility

**Proximity**
The proximity switches are suitable for non-contact position detection for a wide range of applications. They are able to detect objects through painted metallic surfaces, stainless steel, aluminum, plastic and wood. Available in different materials and in several housing shapes.

**Slot**
A slot body is designed to detect the presence of a vane or tab passing through the sensing slot. The available families (ISY, IMI) differ from shape and dimensions, offering a very high quality level of performance and safety.

**Flux**
The flux meter (FLM) is a magnetic sensor for horizontal mounting that is activated by the flux of the liquid to be detected. The liquid pressure switches the output.

**Level**
A wide range level sensors offers reliable and durable solutions for all liquid environments.

**Atex**
Some proximity and level sensors are certified for use in explosive environments. The encapsulated versions are in accordance with the EN 60079-0 and EN 60079-18 standard. The intrinsically safe versions are in accordance with the EN 60079-0 and EN 60079-11.

**Pick up**
The pick up sensors (PA2PK) are designed for applications where gear speed measurement is required. They do not need any power supply.


CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

# Market applications

## Lift (Proximity)

Our proximity magnetic switches are used in lift market for many applications such including cabin leveling, speed monitoring, and cabin presence detection. Accuracy and speed combined with availability of various output functions ensure a signal suitable also for economical high speed elevator control.



## Food & Beverage (Safety)

The moving parts of automatic filling and sealing machines for food and beverages must be protected by safety gates. In Food & Beverage market, where increased sanitary requirements call for cleaning cycles of the machine, safety magnetic sensors are often preferred to mechanical switches.



## Gas stations (Atex)

The ATEX proximity sensors are positioned on the gas pump to detect the presence of the nozzle. While the nozzle is properly stored the pump is deactivated. When the nozzle is removed by the user, the sensor activates the pump. We also provide level sensors to control the tank fuel filling, according to ATEX directive.



## Agriculture (Pick up)

Applications for heavy machinery such as farming machines and trenching equipment often require a customized sensor to monitor gear speed.
Modification requests can include customized housing diameter and materials.
We can also modify sensing distance and operating temperature ranges.



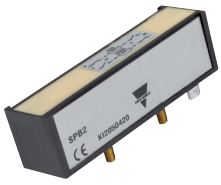
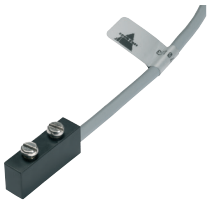
## Rooftops (Flux)

The FLMA1S1 is a magnetic sensor used to monitor the flux of the cooling circuit on rooftops. To work correctly, the flux of the liquid must push the float against its spring: when the flux is sufficiently high to move the float a fixed distance, the sensor switches on, when the flux decreases under the desired value the heating control system is warned by the sensor switch.



# Selection guide

## Proximity magnetic sensors

| Housing | Rectangular | Rectangular | Rectangular |
|---|---|---|---|
| Operating distance | 5 - 32 mm | 12 mm | 5 - 30 mm |
| Dimensions (mm) | 79 x 21.2 x 11.5 | 90 x 20 x 16 | 85 x 24 x 25.5 |
| |  |  |  |
| Family | S series | SPA1 series | SPB2 series |
| Material | Plastic | ABS class V0 | Plastic |
| Connection | PVC cable | PVC cable with connector | Plug (SPB2)<br>Cable (SPB22MT) |
| Degree of protection | IP 67 | IP 67 | IP 67 (SPB22MT)<br>IP 65 (SPB2) |
| Operating temperature | -25° to +75°C<br>(-13° to +167°F) | -25° to +80°C<br>(-13° to +176°F) | -25° to +75°C<br>(-13° to +167°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **SA2, SA8** | | |
| Normally closed | **SC2, SC8** | **SPA1S2, SPA1S3** | |
| Change-over | **SS2** | | |
| Bistable | **SB2, SB2S5** | | |
| Bistable CO | **S.BS.2** | | **SPB2, SPB22MT** |
| Housing | **Rectangular** | **Rectangular** | **Rectangular** |
| Operating distance | 7 - 35 mm | 10 - 35 mm | 14 - 40 mm |
| Dimensions (mm) | 37 x 16 x 8.3 | 27 x 11 x 7 | 23.5 x 14 x 6.1 |
| |  |  |  |
| Family | M and MS series | MM series | MM series |
| Material | Plastic | Plastic | Plastic |
| Connection | PVC cable | PVC cable | Twin lead cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +75°C<br>(-13° to +167°F) | -25° to +75°C<br>(-13° to +167°F) | -25° to +75°C<br>(-13° to +167°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **MSA1, MA3** | **MMA3** | **MMA6** |
| Normally closed | **MC3** | | |
| Change-over | **MS1** | **MMS1** | |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Proximity magnetic sensors

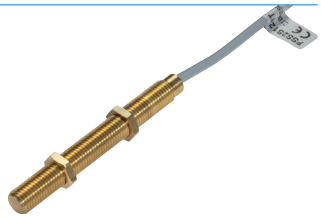
| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 7 - 25 mm | 15 - 36 mm | 20 mm |
| Dimensions (mm) | Ø 9.3 | M10 x 0.75 | M12 x 1 |
| |  |  |  |
| Family | FM series | FM series | FM series |
| Material | Plastic | Nickel plated brass | Brass |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **FMA3** | **FMA6** | **FMA9S1** |
| Normally closed | **FMC3** | | |
| Bistable | **FMS1** | | |

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 5 - 23 mm | > 8 mm | > 8 mm |
| Dimensions (mm) | M12 x 1 | Ø 6 x 25 | Ø 6 x 33 |
| |  |  |  |
| Family | FM series | FMMP series | FMMP series |
| Material | Brass | Plastic | Plastic |
| Connection | PVC cable | Twin lead cable | Twin lead cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -20° to +75°C (-4° to +167°F) | -20° to +75°C (-4° to +167°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **FMA3S5** | **FMMPA7L25** | **FMMPA7L33** |
| Normally closed | **FMC3S1** | | |

# Selection guide

## Proximity magnetic sensors

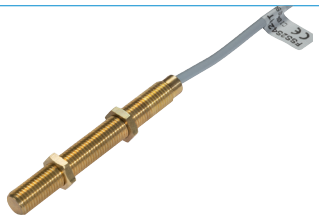
| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | > 8 mm | 8 - 28 mm | 8 - 28 mm |
| Dimensions (mm) | Ø 6 x 38 | M8 x 1 | M8 x 1 |
| |  |  |  |
| Family | FMMP series | FMM series | FMM series |
| Material | Plastic | Stainless steel | Nickel plated brass |
| Connection | Twin lead cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -20° to +75°C (-4° to +167°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **FMMPA7L38** | **FMMA3** | **FMMA6** |
| Change-over | | **FMMS1** | |

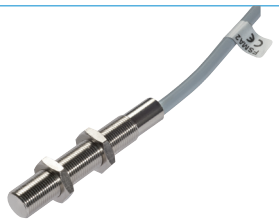
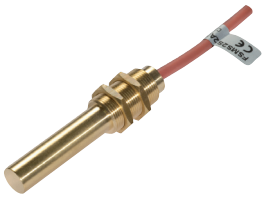
| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 7 - 26 mm | 3 - 12 mm | 7 - 12 mm |
| Dimensions (mm) | M12 x 1 | Ø 13.5 | M10 x 1.25 |
| |  |  |  |
| Family | FMP series | FS series | FS series |
| Material | Plastic | Plastic | Brass |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +75°C (-13° to +167°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **FMPA7, FMPA9, FMPA9S1** | **FSA2, FSA8** | **FSA2S32MT** |
| Normally closed | **FMPC7, FMPC9** | **FSC2, FSC8** | |
| Change-over | **FMPS1** | **FSS2** | **FSS2S12MT** |
| Bistable | **FMPB2** | | |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

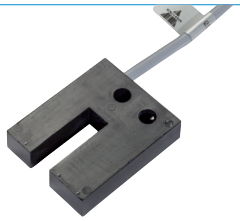
## Proximity magnetic sensors

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 7 - 12 mm | 11 - 32 mm | Front 25 mm / Side >15 |
| Dimensions (mm) | M12 x 1 | M16 x 1.5 | Ø 16 x 110 |
| |  |  |  |
| Family | FS series | FS series | FSLP series |
| Material | Brass | Plastic | Plastic |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +75°C (-13° to +167°F) | -25° to +75°C (-13° to +167°F) | -30° to +80°C (-22° to +176°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | **FSA2S42MT** | | **FSLPA7** |
| Change-over | **FSS2S42MT** | | |
| Bistable | | **FSB22MT** | |

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | Front 18 mm / Side >10 | 2 - 19 mm | ≥ 5 - 8 mm |
| Dimensions (mm) | Ø 16 x 110 | M12 x 1 | M16 x 1 |
| |  |  |  |
| Family | FSLP series | FSM series | FSM series |
| Material | Plastic | Nickel plated brass | Brass |
| Connection | PVC cable | PVC cable (FSMA2, FSMS2) Silicone cable (FSMA7) | Silicone cable |
| Degree of protection | IP 67 | IP 67 | IP67 |
| Operating temperature | -30° to +80°C (-22° to +176°F) | -25° to +75°C (-13° to +167°F) | -20° to +150°C (-4° to +302°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | | **FSMA2, FSMA7** | |
| Change-over | | **FSMS2** | **FSMS2S2AT** |
| Bistable | **FSLPB2** | | |

# Selection guide

## Slot, flux and level sensors

| Housing | Slot | Slot | Cylindrical - Flux |
|---|---|---|---|
| Operating distance | - | - | 5 mm |
| Dimensions (mm) | 45 x 37 x 10 | 28 x 18.5 x 7 | Ø 20 |
| |  |  |  |
| Family | ISY series | IM series | FLM series |
| Material | Plastic | Plastic | Stainless steel, plastic float |
| Connection | PVC cable | PVC cable | PVC cable ended with 6.35 mm female faston |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +75°C (-13° to +167°F) | -25° to +75°C (-13° to +167°F) | -30° to +105°C (-22° to +221°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Normally open | | | **FLMA1S1** |
| Normally closed | **ISYC3** | **IMC3** | |
| Change-over | **ISYS1** | **IMS1** | |

| Housing | Cylindrical - Level | Cylindrical - Level | Cylindrical - Level |
|---|---|---|---|
| Max pressure | 20 Kg/cm² | 10 Kg/cm² | 10 Kg/cm² |
| Dimensions (mm) | Ø 53 | Ø 28 | Ø 28 |
| |  |  |  |
| Family | ILM series | ILMM series | ILMM series |
| Material | Stainless steel | Stainless steel | Stainless steel |
| Connection | Silicone cable | XLPE cable | XLPE cable |
| Degree of protection | IP 67 | IP 68 (cable output IP 67) | IP 68 (cable output IP 67) |
| Operating temperature | -25° to +120°C (-13° to +248°F) | 10° to +120°C (-14° to +248°F) | -10° to +200°C (-14° to +392°F) |
| Approvals / Marks | CE | CE, UL | CE, UL |
| **References** | | | |
| NO or NC * | **ILM2, ILM8** | **ILMM5, ILMM590** | **ILMM5ATS1** |
| Normally closed | | | **ILMM5S2AT** |
| Change-over | **ILMS2** | | |

* NO or NC (Normally open or normally closed) : Reversible output function by float overturning



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Level sensors

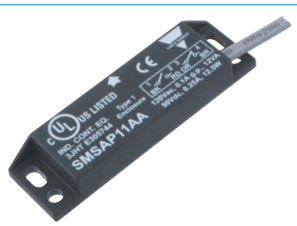
| Housing | Cylindrical - Level | Cylindrical - Level | Cylindrical - Level |
|---|---|---|---|
| Max pressure | 10 Kg/cm² | 0.6 Kg/cm² | 2 Kg/cm² |
| Dimensions (mm) | Ø 28 | Ø 44 | Ø 17.5 |
| |  |  |  |
| Family | ILMM series | ILSP series | ILMPU series |
| Material | Stainless steel | Plastic | Non toxic polypropylene |
| Connection | XLPE cable | Silicone cable | XLPE cable |
| Degree of protection | IP 68 (cable output IP 67) | IP 68 (cable output IP 67) | IP 68 (cable output IP 67) |
| Operating temperature | -20° to +120°C (-4° to +248°F) | -25° to +100°C (-13° to +212°F) | -20° to +80°C (-4° to +176°F) |
| Approvals / Marks | CE, UL | CE | CE, UL |
| **References** | | | |
| Normally open | **ILMM5S1** | | |
| Normally closed | **ILMM5S2** | | |
| Change-over | | **ILSPS2** | |
| NO or NC * | | **ILSP2, ILSP8** | **ILMPU5** |

| Housing | Cylindrical - Level | Cylindrical - Level | Cylindrical - Level |
|---|---|---|---|
| Max pressure | 2 Kg/cm² | 100 Kg/cm² | 2 Kg/cm² |
| Dimensions (mm) | Ø 31 | Ø 45 | Ø 25 |
| |  |  |  |
| Family | ILMU series | ILU series | ILMP series |
| Material | Non toxic polypropylene | Non toxic polypropylene | Non toxic polypropylene |
| Connection | PVC cable | Silicone cable | PVC cable |
| Degree of protection | IP 68 (cable output IP 67) | IP 68 (cable output IP 67) | IP 68 (cable output IP 67) |
| Operating temperature | -20° to +80°C (-4° to +176°F) | -25° to +100°C (-13° to +212°F) | -20° to +80°C (-4° to +176°F) |
| Approvals / Marks | CE, UL | CE | CE, UL |
| **References** | | | |
| Normally open | | **ILU2, ILU8** | |
| Change-over | | **ILUS2** | |
| NO or NC * | **ILMU5** | | **ILMP5, ILMP5P** |

* NO or NC (Normally open or normally closed) : Reversible output function by float overturning

# Selection guide

## Safety magnetic sensors

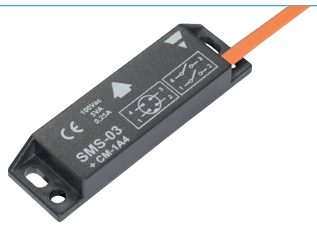
| Housing | Rectangular | Rectangular | Rectangular |
|---|---|---|---|
| Operating distance | 10 mm | 10 mm | 20 mm |
| Dimensions (mm) | 88 x 25 x 13 | 88 x 25 x 13 | 88 x 25 x 13 |
| |  |  |  |
| Family | SMS | SMS | SMS |
| Material | Plastic | Plastic | Plastic |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 4 | 4 | 4 |
| Approvals / Marks | CE | CE, UL | CE |
| **References** | | | |
| Safety 1 NO + 1 NC | **SMS01** | **SMSAP11AA02M** | **SMS02, SMS02LD, SMS02S1** |

| Housing | Rectangular | Rectangular | Rectangular |
|---|---|---|---|
| Operating distance | 20 mm | 20 mm | 20 mm |
| Dimensions (mm) | 88 x 25 x 13 | 88 x 25 x 13 | 88 x 25 x 13 |
| |  |  |  |
| Family | SMS | SMS | SMS |
| Material | Plastic | Plastic | Plastic |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 4 | 4 | 4 |
| Approvals / Marks | CE, UL | CE | CE, UL |
| **References** | | | |
| Safety 1 NO + 1 NC | **SMSAP11AB02M** | | |
| Safety 2 NO | | **SMS03** | **SMSAP20AF02M** |
| Safety 2 NO + Auxiliary 1 NC | | **SMS03NC** | **SMSAP20AG02M** |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Safety magnetic sensors

| Housing | Rectangular | Rectangular |
|---|---|---|
| Operating distance | 20 mm | 20 mm |
| Dimensions (mm) | 88 x 25 x 13 | 88 x 25 x 13 |
| |  |  |
| Family | SMS | SMS |
| Material | Plastic | Plastic |
| Connection | 0.3 m cable + M12 4-pole connector | 0.3 m cable + M12 4-pole connector |
| Degree of protection | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 4 | 4 |
| Approvals / Marks | CE | CE, UL |
| **References** | | |
| Safety 2 NO | **SMS03+CM1A4/03M** | **SMSAP20AF03DCP** |

| Housing | Rectangular | Rectangular |
|---|---|---|
| Operating distance | 20 mm | 20 mm |
| Dimensions (mm) | 88 x 25 x 13 | 88 x 25 x 13 |
| |  |  |
| Family | SMS | SMS |
| Material | Plastic | Plastic |
| Connection | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 2 | 2 |
| Approvals / Marks | CE | CE |
| **References** | | |
| Safety 1 NO | **SMS10** | |
| Safety 1 NO + Auxiliary 1 NC | | **SMS10NC, SMS10NCCM1** |

# Selection guide

## Safety magnetic sensors

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 15 mm | 15 mm | 15 mm |
| Dimensions (mm) | M18 x 1 | M18 x 1 | M18 x 1 |
| |  |  |  |
| Family | SMS | SMS | SMS |
| Material | Plastic | Plastic | Stainless steel |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 4 | 4 | 4 |
| Approvals / Marks | CE | CE, UL | CE |
| **References** | | | |
| 1 NO + 1 NC | **SMSA2P02, SMSA2P02LD** | **SMS2P11AJ02M** | **SMSA2M02** |

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 15 mm | 16 mm | 16 mm |
| Dimensions (mm) | M30 x 1.5 | M18 x 1 | M18 x 1 |
| |  |  |  |
| Family | SMS | SMS | SMS |
| Material | Plastic | Plastic | Stainless steel |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 4 | 3 | 3 |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| 1 NO + 1 NC | **SMSA3P02** | | |
| 1 NO | | **SMSA2P10** | **SMSA2M10** |
| 2 NO | | **SMSA2P30** | |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Safety magnetic sensors

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Operating distance | 16 mm | 16 mm | 16 mm |
| Dimensions (mm) | M30 x 1.5 | M18 x 1 | M30 x 1.5 |
| |  |  |  |
| Family | SMS | SMS | SMS |
| Material | Plastic | Plastic | Plastic |
| Connection | PVC cable | PVC cable | PVC cable |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Safety category | 3 | 4 | 4 |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| 2 NO | **SMSA3P30** | **SMSA2P03** | **SMSA3P03** |

# Selection guide

## Atex certified sensors

| Housing | Cylindrical | Cylindrical |
|---|---|---|
| Operating distance | 8 - 30 mm | - |
| Dimensions (mm) | pg 13.5 | 45 x 55 |
| |  |  |
| Family | FSQ series - Encapsulated | ILM series - Encapsulated |
| Material | AISI 303 stainless steel | AISI 316 stainless steel |
| Connection | Slicone cable (FSQA2B01SLEX)<br>Halogen free PUR (FSQA2HFEX) | Slicone cable (ILMA2SSLEX)<br>PVC cable (ILMS2SEX) |
| Degree of protection | IP 67 (FSQA2B01SLEX)<br>IP 66 (FSQA2HFEX) | IP 68 |
| Operating temperature | -20° to +60°C<br>(-4° to +140°F) | -20° to +60°C<br>(-4° to +140°F) |
| Approvals / Marks | CE, ATEX | CE, ATEX |
| **References** | | |
| Normally open | **FSQA2B01SLEX, FSQA2HFEX** | **ILMA2CSLEX** |
| Change-over | | **ILMS2CEX** |

| Housing | Spherical | Rectangular |
|---|---|---|
| Operating distance | - | 7 - 30 mm |
| Dimensions (mm) | Ø 53 | 37 x 16 x 8.3 |
| |  |  |
| Family | ILM series - Encapsulated | MQ series - Encapsulated |
| Material | AISI 316 stainless steel | Autoestinguishing polypropylene |
| Connection | Slicone cable (ILMA2SSLEX)<br>PVC cable (ILMS2SEX) | PVC cable |
| Degree of protection | IP 68 | IP 67 |
| Operating temperature | -20° to +60°C<br>(-4° to +140°F) | -20° to +60°C<br>(-4° to +140°F) |
| Approvals / Marks | CE, ATEX | CE, ATEX |
| **References** | | |
| Normally open | **ILMA2SSLEX** | |
| Normally closed | | **MQC1EX** |
| Change-over | **ILMS2SEX** | |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Atex certified sensors

| Housing | Rectangular | Cylindrical |
|---|---|---|
| Operating distance | 10 - 35 mm | - |
| Dimensions (mm) | 37 x 16 x 8.3 | 45 x 55 |
| |  |  |
| Family | MQ series - Encapsulated | ILM series - Intrinsically safe |
| Material | Autoestinguishing polypropylene | AISI 316 stainless steel |
| Connection | PVC cable | Slicone cable (ILMA0CSLEX)<br>PVC cable (ILMS0CEX) |
| Degree of protection | IP 67 | IP 68 |
| Operating temperature | -20° to +60°C<br>(-4° to +140°F) | -20° to +60°C<br>(-4° to +140°F) |
| Approvals / Marks | CE, ATEX | CE, ATEX |
| **References** | | |
| Normally open | **MQA1EX** | **ILMA0CSLEX** |
| Change-over | **MQS1EX** | **ILMS0CEX** |

| Housing | Spherical | Rectangular |
|---|---|---|
| Operating distance | - | 10 - 35 mm |
| Dimensions (mm) | Ø 53 | 37 x 16 x 8.3 |
| |  |  |
| Family | ILM series - Intrinsically safe | MQ series - Intrinsically safe |
| Material | AISI 316 stainless steel | Autoestinguishing polypropylene |
| Connection | Slicone cable (ILMA0SSLEX)<br>PVC cable (ILMS0SEX) | PVC cable |
| Degree of protection | IP 68 | IP 67 |
| Operating temperature | -20° to +60°C<br>(-4° to +140°F) | -20° to +60°C<br>(-4° to +140°F) |
| Approvals / Marks | CE, ATEX | CE, ATEX |
| **References** | | |
| Normally open | **ILMA0SSLEX** | **MQA0EX** |
| Change-over | **ILMS0SEX** | |

# Selection guide

## Magnets

| Housing | Rectangular | Rectangular | Cylindrical |
|---|---|---|---|
| Dimensions (mm) | 88 x 25 x 13 | 88 x 25 x 13 | Ø 25.1 x 9.3 |
| |  |  |  |
| Family | CLS series | CLS series | CLS series |
| Material | Plastic | Plastic | Plastic |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Approvals / Marks | CE | CE, UL | CE |
| **References** | | | |
| | **CLS** | **CLSD88PM0** | **CLSA2** |

| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Dimensions (mm) | Ø 25.1 x 9.3 | Ø 25.1 x 9.3 | Ø 30 x 16 |
| |  |  |  |
| Family | CLS series | CLS series | CLS series |
| Material | Stainless steel | Plastic | Plastic |
| Degree of protection | IP 67 | IP 67 | IP 67 |
| Operating temperature | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) | -25° to +70°C (-13° to +158°F) |
| Approvals / Marks | CE | CE, UL | CE |
| **References** | | | |
| | **CLSA2M** | **CLSA25PC0** | **CLSA3** |

| Housing | Rectangular | Rectangular | Rectangular |
|---|---|---|---|
| Dimensions (mm) | 14 x 25 x 8 | 12 x 44.5 x 9 | 18 x 59 x 9 |
| |  |  |  |
| Family | CL series | CL series | CL series |
| Housing material | Plastic | Plastic | Plastic |
| Magnetic material | Alnico | Alnico | Alnico |
| Min. distance bet. two magnets | 10 mm | 20 mm | 30 mm |
| **References** | | | |
| | **CL1** | **CL2** | **CL3** |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Magnets

| Housing | Rectangular | Cylindrical | Cylindrical |
|---|---|---|---|
| Dimensions (mm) | 25 x 76 x 10 | Ø 9.3 x 32 | Ø 13.5 x 65 |
| |  |  |  |
| Family | CL series | CL series | CL series |
| Housing material | Plastic | Plastic | Plastic |
| Magnetic material | Alnico | Alnico | Alnico |
| Min. distance bet. two magnets | 50 mm | Not mandatory | Not mandatory |
| **References** | | | |
| | **CL4** | **CL10** | **CL11** |

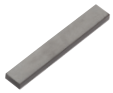
| Housing | Cylindrical | Cylindrical | Cylindrical |
|---|---|---|---|
| Dimensions (mm) | Ø 18 x 6 | Ø 20 x 10.5 | Ø 22.1 x 20.5 |
| |  |  |  |
| Family | CL series | CL series | CL series |
| Housing material | - | - | Plastic |
| Magnetic material | Ferrite | Ferrite | Ferrite |
| Min. distance bet. two magnets | Not mandatory | Not mandatory | Not mandatory |
| **References** | | | |
| | **CL18** | **CL20S1** | **CL20S3** |

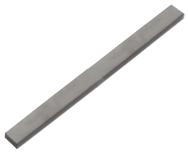
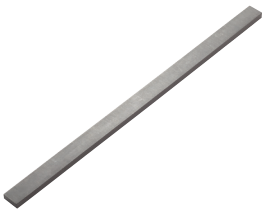
| Housing | Cylindrical | Cylindrical | Trapezoidal |
|---|---|---|---|
| Dimensions (mm) | Ø 23 x 9 | Ø 31 x 10 | 31 x 90 x 22.5 |
| |  |  |  |
| Family | CL series | CL series | CL series |
| Housing material | - | - | Plastic |
| Magnetic material | Ferrite | Ferrite | Alnico |
| Min. distance bet. two magnets | Not mandatory | Not mandatory | Not mandatory |
| **References** | | | |
| | **CL23** | **CL31** | **CL90** |

# Selection guide

## Accessories for lift market

| Type | Jaw | Jaw | Jaw |
|---|---|---|---|
| Dimensions (mm) | 114 x 20.5 x 14 | 165 x 20.5 x 14 | 267 x 20.5 x 14 |
| |  |  |  |
| Family | AJL series | AJL series | AJL series |
| Material | ABS v0 | ABS v0 | ABS v0 |
| Operating temperature | -25° to +75°C / -13° to +167°F | -25° to +75°C / -13° to +167°F | -25° to +75°C / -13° to +167°F |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| | **AJL100M12** | **AJL150M12** | **AJL250M12** |

| Type | Support | Magnets | Magnets |
|---|---|---|---|
| Dimensions (mm) | Ø 12 | 100 x 15 x 6 | 150 x 15 x 6 |
| |  |  |  |
| Family | ASD series | AML series | AML series |
| Material | ABS v0 | Plastoferrite | Plastoferrite |
| Operating temperature | -25° to +75°C / -13° to +167°F | -25° to +75°C / -13° to +167°F | -25° to +75°C / -13° to +167°F |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| | **ASD12M12** | **AML100M12** | **AML150M12** |

| Type | Magnets | Magnets |
|---|---|---|
| Dimensions (mm) | 200 x 15 x 6 | 300 x 15 x 6 |
| |  |  |
| Family | AML series | AML series |
| Material | Plastoferrite | Plastoferrite |
| Operating temperature | -25° to +75°C / -13° to +167°F | -25° to +75°C / -13° to +167°F |
| Approvals / Marks | CE | CE |
| **References** | | |
| | **AML200M12** | **AML300M12** |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

## Pick up sensors

| Housing | Pick up | Pick up | Pick up |
|---|---|---|---|
| Operating distance | < 2 mm | < 2 mm | < 2 mm |
| Dimensions (mm) | M20 x 1.5 | M20 x 1.5 | M20 x 1.5 |
| |  |  |  |
| Family | PA2PK series | PA2PK series | PA2PK series |
| Material | Nylon with 30% glass fibre | Nylon with 30% glass fibre | Nylon with 30% glass fibre |
| Body length | 60 mm | 70 mm | 107 mm |
| Cable length | 400 mm | 400 mm | 385 mm |
| Connection | AMP connector | AMP connector | AMP connector |
| Degree of protection | IP 65 | IP 65 | IP 65 |
| Operating temperature | -40° to +130°C (-40° to +266°F) | -40° to +130°C (-40° to +266°F) | -40° to +130°C (-40° to +266°F) |
| Approvals / Marks | CE | CE | CE |
| **References** | | | |
| Pulse | **PA2PKF45T60** | **PA2PKF45T70** | **PA2PKF45T107** |

# Type selection

| Type number | Oper. dist. (mm) | Dimensions (mm) | Contact ratings | Operating temperature | Output |
|---|---|---|---|---|---|
| **Proximity magnetic sensors - rectangular - plastic housing** | | | | | |
| **SA2** | 10 - 32 | 79 x 21.2 x 11.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **SA8** | 10 - 32 | 79 x 21.2 x 11.5 | 1500 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **SC2** | 9 - 28 | 79 x 21.2 x 11.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NC |
| **SC8** | 9 - 28 | 79 x 21.2 x 11.5 | 1500 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NC |
| **SS2** | 10 - 32 | 79 x 21.2 x 11.5 | 230 VAC, 1 A | -25° to +75°C (-13° to +167°F) | CO |
| **SB2** | 8 - 30 | 79 x 21.2 x 11.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | Bistable |
| **SB2S5** | 8 - 30 | 79 x 21.2 x 11.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | Bistable |
| **S.BS.2** | 5 - 28 | 79 x 21.2 x 11.5 | 230 VAC, 1 A | -25° to +75°C (-13° to +167°F) | Bistable CO |
| **SPA1S2** | 12 | 90 x 20 x 16 | 24 VDC, 4 A/0.5 A | -25° to +80°C (-13° to +176°F) | NC |
| **SPA1S3** | 12 | 90 x 20 x 16 | 24 VDC, 4 A/0.5 A | -25° to +80°C (-13° to +176°F) | NC |
| **SPB2** | 5 - 30 | 85 x 24 x 25.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | Bistable |
| **SPB22MT** | 5 - 30 | 85 x 24 x 25.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | Bistable |
| **MSA1** | 10 - 35 | 37 x 16 x 8.3 | 230 VAC, 0.75 A | -25° to +75°C (-13° to +167°F) | NO |
| **MA3** | 10 - 35 | 37 x 16 x 8.3 | 500 VAC, 0.5 A | -25° to +75°C (-13° to +167°F) | NO |
| **MC3** | 7 - 30 | 37 x 16 x 8.3 | 500 VAC, 0.5 A | -25° to +75°C (-13° to +167°F) | NC |
| **MS1** | 10 - 35 | 37 x 16 x 8.3 | 100 VAC, 0.25 A | -25° to +75°C (-13° to +167°F) | CO |
| **MMA3** | 10 - 35 | 27 x 11 x 7 | 500 VAC, 0.5 A | -25° to +75°C (-13° to +167°F) | NO |
| **MMS1** | 10 - 35 | 27 x 11 x 7 | 100 VAC, 0.25 A | -25° to +75°C (-13° to +167°F) | CO |
| **MMA6** | 14 - 40 | 23.5 x 14 x 6.1 | 100 VAC, 0.5 A | -25° to +75°C (-13° to +167°F) | NO |
| **Proximity magnetic sensors - cylindrical - plastic housing** | | | | | |
| **FMA3** | 9 - 25 | Ø 9.3 | 500 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NO |
| **FMC3** | 7 - 20 | Ø 9.3 | 500 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NC |
| **FMS1** | 9 - 25 | Ø 9.3 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | CO |
| **FMMPA7L25** | > 8 | Ø 6 x 25 | 140 VAC, 200 VDC, 1 A | -20° to +75°C (-4° to +167°F) | NO |
| **FMMPA7L33** | > 8 | Ø 6 x 33 | 140 VAC, 200 VDC, 1 A | -20° to +75°C (-4° to +167°F) | NO |
| **FMMPA7L38** | > 8 | Ø 6 x 38 | 140 VAC, 200 VDC, 1 A | -20° to +75°C (-4° to +167°F) | NO |
| **FMPA7** | 26 | M12 x 1 | 140 VAC, 200 VDC, 1 A | -25° to +75°C (-13° to +167°F) | NO |
| **FMPA9** | 7 | M12 x 1 | 230 VAC/DC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **FMPA9S1** | 17 | M12 x 1 | 230 VAC/DC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **FMPC7** | 23 | M12 x 1 | 120 VAC/DC, 0.5 A | -25° to +75°C (-13° to +167°F) | NC |
| **FMPC9** | 26 | M12 x 1 | 230 VAC/DC, 3 A | -25° to +75°C (-13° to +167°F) | NC |
| **FMPS1** | 20 | M12 x 1 | 120 VAC, 175 VDC, 0.25 A | -25° to +75°C (-13° to +167°F) | CO |
| **FMPB2** | 15 | M12 x 1 | 250 VAC/DC, 3 A | -25° to +75°C (-13° to +167°F) | Bistable |
| **FSA2** | 7 - 12 | Ø 13.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **FSA8** | 7 - 12 | Ø 13.5 | 1500 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **FSC2** | 3 - 12 | Ø 13.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NC |
| **FSC8** | 3 - 12 | Ø 13.5 | 1500 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NC |
| **FSS2** | 7 - 12 | Ø 13.5 | 230 VAC, 1A | -25° to +75°C (-13° to +167°F) | CO |
| **FSB22MT** | 11 - 32 | M16 x 1.5 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | Bistable |
| **FSLPA7** | front: 25, side: >15 | Ø 16 x 110 | 100 VAC, 0.4 A | -30 to +80°C (-22° to +176°F) | NO |
| **FSLPB2** | front: 18, side: >10 | Ø 16 x 110 | 250 VAC, 3 A | -30 to +80°C (-22° to +176°F) | Bistable |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

# Type selection

| Type number | Oper. dist. (mm) | Dimensions (mm) | Contact ratings | Operating temperature | Output |
|---|---|---|---|---|---|
| **Proximity magnetic sensors - cylindrical - metal housing** | | | | | |
| **FMA3S5** | 7 - 23 | M12 x 1 | 500 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NO |
| **FMA6** | 15 - 36 | M10 x 0.75 | 100 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NO |
| **FMA9S1** | 20 | M12 x 1 | 230 VAC/DC, 3 A | -25° to +70°C (-13° to +158°F) | NO |
| **FMC3S1** | 5 - 18 | M12 x 1 | 500 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NC |
| **FMMA3** | 10 - 27 | M8 x 1 | 500 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NO |
| **FMMA6** | 14 - 28 | M8 x 1 | 100 VAC, 0.5 A | -25° to +70°C (-13° to +158°F) | NO |
| **FMMS1** | 8 - 23 | M8 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | CO |
| **FSA2S32MT** | 7 - 12 | M10 x 1.25 | 250 VAC, 3A | -25° to +75°C (-13° to +167°F) | NO |
| **FSS2S12MT** | 7 - 12 | M10 x 1.25 | 230 VAC, 1A | -25° to +75°C (-13° to +167°F) | CO |
| **FSA2S42MT** | 7 - 12 | M12 x 1 | 250 VAC, 3A | -25° to +75°C (-13° to +167°F) | NO |
| **FSS2S42MT** | 7 - 12 | M12 x 1 | 230 VAC, 1A | -25° to +75°C (-13° to +167°F) | CO |
| **FSMA2** | 2 - 19 | M12 x 1 | 250 VAC, 3 A | -25° to +75°C (-13° to +167°F) | NO |
| **FSMA7** | ≥ 7 | M12 x 1 | 24 VDC, 50 mA | -25° to +75°C (-13° to +167°F) | NO |
| **FSMS2** | 9 | M12 x 1 | 230 VAC, 1 A | -25° to +75°C (-13° to +167°F) | CO |
| **FSMS2S2AT** | ≥ 5 - 8 | M16 x 1 | 230 VAC, 0.5 A | -20° to 150°C (-4° to +302°F) | CO |
| **Slot sensors - plastic housing** | | | | | |
| **ISYC3** | – | 45 x 37 x 10 | 500 VAC, 0.5 A | -25° to +75°C (-13° to +167°F) | NC |
| **ISYS1** | – | 45 x 37 x 10 | 100 VAC, 0.25 A | -25° to +75°C (-13° to +167°F) | CO |
| **IMC3** | – | 28 x 18.5 x 7 | 500 VAC, 0.5 A | -25° to +75°C (-13° to +167°F) | NC |
| **IMS1** | – | 28 x 18.5 x 7 | 100 VAC, 0.25 A | -25° to +75°C (-13° to +167°F) | CO |
| **Level sensors - cylindrical - plastic housing** | | | | | |
| **ILSP2** | – | Ø 44 | 250 VAC, 3 A | -25° to +100°C (-13° to +212°F) | NO, NC |
| **ILSP8** | – | Ø 44 | 1500 VAC, 3 A | -25° to +100°C (-13° to +212°F) | NO, NC |
| **ILSPS2** | – | Ø 44 | 230 VAC, 1 A | -25° to +100°C (-13° to +212°F) | CO |
| **ILMP5** | - | Ø 25 | 240 VAC, 200 VDC, 0.5 A | -20° to +80°C (-4° to +176°F) | NO, NC |
| **ILMP5P** | - | Ø 25 | 240 VAC, 200 VDC, 0.5 A | -20° to +80°C (-4° to +176°F) | NO, NC |
| **ILMPU5** | – | Ø 17.5 | 240 VAC, 200 VDC, 0.5 A | -20° to +80°C (-4° to +176°F) | NO, NC |
| **ILMU5** | – | Ø 31 | 240 VAC, 200 VDC, 0.5 A | -20° to +80°C (-4° to +176°F) | NO, NC |
| **ILU2** | – | Ø 45 | 250 VAC, 3 A | -25° to +100°C (-13° to +212°F) | NO |
| **ILU8** | – | Ø 45 | 1000 VAC, 3 A | -25° to +100°C (-13° to +212°F) | NO |
| **ILUS2** | – | Ø 45 | 230 VAC, 1 A | -25° to +100°C (-13° to +212°F) | CO |
| **Level sensors - cylindrical - metal housing** | | | | | |
| **ILM2** | – | Ø 53 | 250 VAC, 3 A | -25° to +120°C (-13° to +248°F) | NO, NC |
| **ILM8** | – | Ø 53 | 1500 VAC, 3 A | -25° to +120°C (-13° to +248°F) | NO, NC |
| **ILMS2** | – | Ø 53 | 230 VAC, 1 A | -25° to +120°C (-13° to +248°F) | CO |
| **ILMM5** | – | Ø 28 | 240 VAC, 220 VDC, 0.5 A | -10° to +120°C (-14° to +248°F) | NO, NC |
| **ILMM590** | – | Ø 28 | 240 VAC, 220 VDC, 0.5 A | -10° to +120°C (-14° to +248°F) | NO, NC |
| **ILMM5ATS1** | – | Ø 28 | 240 VAC, 220 VDC, 0.5 A | -10° to +200°C (-14° to +392°F) | NO, NC |
| **ILMM5S2AT** | – | Ø 28 | 240 VAC, 220 VDC, 0.5 A | -10° to +200°C (-14° to +392°F) | NC |
| **ILMM5S2** | – | Ø 28 | 240 VAC, 220 VDC, 0.5 A | -20° to +120°C (-4° to +248°F) | NC |
| **ILMM5S1** | – | Ø 28 | 240 VAC, 220 VDC, 0.5 A | -20° to +120°C (-4° to +248°F) | NO |
| **Flux sensors - cylindrical - metal housing** | | | | | |
| **FLMA1S1** | 5 | Ø 20 | 100 VAC, 0.4 A | -30° to +105°C (-22° to +221°F) | NO |

# Type selection

| Type number | Oper. dist. (mm) | Dimensions (mm) | Contact ratings | Operating temperature | Output |
|---|---|---|---|---|---|
| **Safety magnetic sensors - rectangular - plastic housing** | | | | | |
| **SMS01** | 10 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMSAP11AA02M *** | 10 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMS02** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMSAP11AB02M *** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMS02LD** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMS02S1** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMS03** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMSAP20AF02M *** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMS03NC** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMSAP20AG02M *** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMS03+CM1A4/03MT** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMSAP20AF03DCP *** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMS10** | 20 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO |
| **SMS10NC** | 17 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO |
| **SMS10NCCM1** | 17 | 88 x 25 x 13 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO |
| **Safety magnetic sensors - cylindrical - plastic housing** | | | | | |
| **SMSA2P02** | 15 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMS2P11AJ02M *** | 15 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMSA2P02LD** | 15 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMSA3P02** | 15 | M30 x 1.5 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMSA2P10** | 16 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO |
| **SMSA2P30** | 16 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMSA3P30** | 16 | M30 x 1.5 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMSA2P03** | 16 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **SMSA3P03** | 16 | M30 x 1.5 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 2 NO |
| **Safety magnetic sensors - cylindrical - metal housing** | | | | | |
| **SMSA2M02** | 15 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO + 1 NC |
| **SMSA2M10** | 16 | M18 x 1 | 100 VAC, 0.25 A | -25° to +70°C (-13° to +158°F) | 1 NO |
| **Atex certified sensors - plastic housing** | | | | | |
| **MQA1EX** | 10 - 35 | 37 x 16 x 8.3 | 230 VAC/DC, 0.75 A | -20° to +60°C (-4° to +140°F) | NO |
| **MQC1EX** | 7 - 30 | 37 x 16 x 8.3 | 230 VAC/DC, 0.75 A | -20° to +60°C (-4° to +140°F) | NC |
| **MQS1EX** | 10 - 35 | 37 x 16 x 8.3 | 150 VAC/DC, 0.25 A | -20° to +60°C (-4° to +140°F) | CO |
| **MQA0EX** | 10 - 35 | 37 x 16 x 8.3 | 30 VAC/DC, 120 mA | -20° to +60°C (-4° to +140°F) | NO |
| **Atex certified sensors - metal housing** | | | | | |
| **FSQA2B01SLEX** | 8 - 30 | PG 13.5 | 250 VAC, 3 A | -20° to +60°C (-4° to +140°F) | NO |
| **FSQA2HFEX** | 8 - 30 | PG 13.5 | 250 VAC, 3 A | -20° to +60°C (-4° to +140°F) | NO |
| **ILMA2CSLEX** | – | 45 x 55 | 250 VAC/DC, 3 A | -20° to +60°C (-4° to +140°F) | NO |
| **ILMA2SSLEX** | – | Ø 53 | 250 VAC/DC, 3 A | -20° to +60°C (-4° to +140°F) | NO |
| **ILMS2CEX** | – | 45 x 55 | 230 VAC/DC, 1 A | -20° to +60°C (-4° to +140°F) | CO |
| **ILMS2SEX** | – | Ø 53 | 230 VAC/DC, 1 A | -20° to +60°C (-4° to +140°F) | CO |
| **ILMA0CSLEX** | – | 45 x 55 | 30 VAC/DC, 120 mA | -20° to +60°C (-4° to +140°F) | NO |
| **ILMA0SSLEX** | – | Ø 53 | 30 VAC/DC, 120 mA | -20° to +60°C (-4° to +140°F) | NO |
| **ILMS0CEX** | – | 45 x 55 | 30 VAC/DC, 120 mA | -20° to +60°C (-4° to +140°F) | CO |
| **ILMS0SEX** | – | Ø 53 | 30 VAC/DC, 120 mA | -20° to +60°C (-4° to +140°F) | CO |



CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

# Type selection

| Type number | Oper. dist. (mm) | Dimensions (mm) | Contact ratings | Operating temperature | Output |
|---|---|---|---|---|---|
| **Magnets - rectangular - plastic housing** | | | | | |
| CL1 | – | 14 x 25 x 8 | – | – | – |
| CL2 | – | 12 x 44.5 x 9 | – | – | – |
| CL3 | – | 18 x 59 x 9 | – | – | – |
| CL4 | – | 25 x 76 x 10 | – | – | – |
| CLS | – | 88 x 25 x 13 | – | -25° to +70°C (-13° to +158°F) | – |
| CLSD88PM0 * | – | 88 x 25 x 13 | – | -25° to +70°C (-13° to +158°F) | – |
| **Magnets - cylindrical - plastic housing** | | | | | |
| CL10 | – | Ø 9.3 x 32 | – | – | – |
| CL11 | – | Ø 13.5 x 65 | – | – | – |
| CL20S3 | – | Ø 22.1 x 20.5 | – | – | – |
| CLSA2 | – | Ø 25.1 x 9.3 | – | -25° to +70°C (-13° to +158°F) | – |
| CLSA25PC0 * | – | Ø 25.1 x 9.3 | – | -25° to +70°C (-13° to +158°F) | – |
| CLSA3 | – | Ø 30 x 16 | – | -25° to +70°C (-13° to +158°F) | – |
| **Magnets - cylindrical - metal housing** | | | | | |
| CLSA2M | – | Ø 25.1 x 9.3 | – | -25° to +70°C (-13° to +158°F) | – |
| **Magnets - cylindrical** | | | | | |
| CL18 | – | Ø 18 x 6 | – | – | – |
| CL20S1 | – | Ø 20 x 10.5 | – | – | – |
| CL23 | – | Ø 23 x 9 | – | – | – |
| CL31 | – | Ø 31 x 10 | – | – | – |
| **Magnets - trapezoidal - plastic housing** | | | | | |
| CL90 | – | 31 x 90 x 22.5 | – | – | – |
| **Accessories for lift market** | | | | | |
| AJL100M12 | – | 114 x 20.5 x 14 | – | – | – |
| AJL150M12 | – | 165 x 20.5 x 14 | – | – | – |
| AJL250M12 | – | 267 x 20.5 x 14 | – | – | – |
| ASD12M12 | – | Ø 12 | – | – | – |
| AML100M12 | – | 100 x 15 x 6 | – | – | – |
| AML150M12 | – | 150 x 15 x 6 | – | – | – |
| AML200M12 | – | 200 x 15 x 6 | – | – | – |
| AML300M12 | – | 300 x 15 x 6 | – | – | – |
| **Pick up sensors - nylon housing** | | | | | |
| PA2PKF45T60 | < 2 | M20 x 1.5 | – | -40° to +130°C (-40° to +266°F) | Pulse |
| PA2PKF45T70 | < 2 | M20 x 1.5 | – | -40° to +130°C (-40° to +266°F) | Pulse |
| PA2PKF45T107 | < 2 | M20 x 1.5 | – | -40° to +130°C (-40° to +266°F) | Pulse |

*** UL part number**

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