The best in cost-effectiveness
■ Wear-free technology allows for longer life time
■ Status LED and diagnostic output
■ Smallest design of RFID safety sensors
■ Full mechanical compatibility with Magnus MG S and MG B
■ Can be used as a stand-alone

The best in safety
■ Tampering protection in accordance with DIN EN 14119, the highest in its class
■ Screw covers prevent easy removal
■ Series connection up to PL e / SIL 3

The best in versatility
■ Dual mounting options
■ M12 connector or cable
■ IP67 and IP6K9K protection grade for use in harsh environments
■ Complies with the strict hygiene and cleaning requirements of the food and packaging industry
■ 3 different coding levels
■ Extension cables for series connection

Operating temperature:
-25 ... +70 °C

High protection classes IP67 and IP6K9K for use in harsh environments.
Resistant to aggressive media, e.g. cleaning agents used in the food industry.

Vibration resistance:
10...55 Hz, amplitude 1 mm.

OVERVIEW
The application of Magnus RFID sensors can be extremely wide thanks to the compact and versatile design.

The different design and technology options and the complete mechanical compatibility with Magnus MG series make this product extremely valuable for users.

The RFID technology enables Magnus RFID sensors to be individually coded in three different ways to allow the appropriate tampering protection in all applications. The highest configurations allow each sensor to be paired with one only assigned actuator.

The RFID technology used allows to reach safety levels up to PL e / SIL 3 also when connecting the sensors in series.

As a result, Magnus RFID sensors can be simply integrated in existing safety scenarios, offering a cost-effective solution for modifying and upgrading machines.

Multiple options of actuation technology
■ Individual coding
The actuator is programmed via teach-in and permanently assigned to the sensor during set-up (the process can be repeated if necessary)
■ Unique coding
The actuator is permanently assigned to the sensor during manufacturing (it cannot be replaced with another actuator)
■ Actuator coded
The actuator is free and not specifically assigned to the sensor (one actuator can work with multiple sensors)

Ideal also in the most demanding applications
Unique mechanical characteristics allow protection against cleaning agents and washdown processes, a typical requirement of the food industry.
SERIES CONNECTION WITH MAXIMUM SAFETY

Up to (PL e Performance Level) according to EN ISO 13849-1

Reliable evaluation, e.g. with the modular safety controller Mosaic...

...or with the AD SR1 configurable safety control unit

Transition time between Input and Output: 3 ms, the shortest in the market

MAGNUS RFID RANGE

S series
22 mm interaxis

Dimensions compatible with Magnus MG S series

B series
78 mm interaxis

Dimensions compatible with Magnus MG B series

CONNECTIVITY

Cable or M12 Connector
Magnus RFID satisfies all requirements with regard to connectivity.

Cable (5 m)
M12 Connector (15 cm pigtail)
CODE LEGEND (ORDERING INFORMATION)

Combo (Sensor + Actuator)¹

M RFID C S I A S

M  M12 Connector
S  5 m cable
A  Automatic EDM input
I  Individual coding
U  Unique coding
C  Actuator coded
S  22 mm interaxis
B  78 mm interaxis

Extension cable (for series connection)

M RFID EC S 4 5

1  1 m cable
3  3 m cable
5  5 m cable
10  10 m cable

4  4 poles connector
8  8 poles connector

S  Male - Female M12 connector (straight)
L  Male - Female M12 connector (90°)²
C  Female M12 connector

T Connectors (for series connection)

M RFID TC A

A  M12 Type A
B  M12 Type B
C  M12 Type C

Accessories

M RFID SP Spacers available for S or B series (recommended for mounting on metal surfaces)

M RFID TP Termination plug (to close the last Type B connector in series connections of 2 or more sensors)

1. Each Combo set is provided with a Sensor and the corresponding Actuator. Sensors and Actuators can be also ordered separately, please enquire within.
2. 4-pole version available only

APPROVALS

- 2014/30/EC “Electromagnetic Compatibility Directive”
- 2014/35/EC “Low Voltage Directive”
- IEC 61508-1 (ed. 2) (SIL3) “Functional safety of electrical/electronic programmable electronic safety related systems - General requirements”
- ISO 13849-1:2015 “Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design”

SAFETY LEVEL

Cat. 4

SIL 3 - SIL CL 3
PL e

CE

TUV

UL

RoHS
### Mechanical data

<table>
<thead>
<tr>
<th></th>
<th>S series</th>
<th>B series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing material</td>
<td>PBT / PC</td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>Rectangular</td>
<td></td>
</tr>
<tr>
<td>Connector type</td>
<td>Pigtail M12 / 8-pole / 150mm</td>
<td></td>
</tr>
<tr>
<td>Cable</td>
<td>5 m PVC / 8 wires</td>
<td></td>
</tr>
<tr>
<td>Cross-section of wire (mm²)</td>
<td>0,25</td>
<td></td>
</tr>
<tr>
<td>Dimensions h w d (mm)</td>
<td>26 x 36 x 13</td>
<td>26 x 88 x 13</td>
</tr>
<tr>
<td>Fastening</td>
<td>M4 screws (countersunk)</td>
<td></td>
</tr>
</tbody>
</table>

### Environmental features

<table>
<thead>
<tr>
<th></th>
<th>S series / B series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection class</td>
<td>IP67 (all versions)</td>
</tr>
<tr>
<td></td>
<td>IP6K9K (cable versions only)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>- 25 °C ... +70 °C</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>30 g /11 ms</td>
</tr>
<tr>
<td>Vibration resistance (Hz)</td>
<td>10…55 , amplitude 1 mm</td>
</tr>
</tbody>
</table>

### TECHNICAL FEATURES

#### Electrical specifications

<table>
<thead>
<tr>
<th></th>
<th>S series / B series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage (VDC)</td>
<td>24 ± 10%</td>
</tr>
<tr>
<td>Max. switching voltage (V)</td>
<td>Supply voltage ± 0,2 V</td>
</tr>
<tr>
<td>Switching current safety output (mA)</td>
<td>Max. 400</td>
</tr>
<tr>
<td>Switching current control output (mA)</td>
<td>Max. 50</td>
</tr>
<tr>
<td>Response time (ms)</td>
<td>Input-Output: 3 Sensor-Actuator: 75</td>
</tr>
<tr>
<td>Contact form</td>
<td>OSSD</td>
</tr>
<tr>
<td>Switching frequency (Hz)</td>
<td>3</td>
</tr>
<tr>
<td>No. of safety outputs electronic</td>
<td>2</td>
</tr>
<tr>
<td>No. of diagnostic outputs electronic</td>
<td>1</td>
</tr>
<tr>
<td>Number of safety inputs</td>
<td>2</td>
</tr>
<tr>
<td>EDM input</td>
<td>Yes</td>
</tr>
<tr>
<td>Start button</td>
<td>Yes</td>
</tr>
<tr>
<td>Functional category</td>
<td>DC-12 / DC-13</td>
</tr>
<tr>
<td>Assured switching distance (mm)</td>
<td>8</td>
</tr>
<tr>
<td>Safe distance for switching off (mm)</td>
<td>18</td>
</tr>
<tr>
<td>Minimum air-gap (mm)</td>
<td>0,5</td>
</tr>
<tr>
<td>Misalignment actuator max. (mm)</td>
<td>Max. 8</td>
</tr>
<tr>
<td>Reverse polarity protection</td>
<td>Yes</td>
</tr>
<tr>
<td>Short-circuit proof outputs</td>
<td>Yes</td>
</tr>
<tr>
<td>Current consumption per input (mA)</td>
<td>2,75</td>
</tr>
<tr>
<td>Indication LED</td>
<td>Three-colour</td>
</tr>
<tr>
<td>Operating direction</td>
<td>Any direction</td>
</tr>
<tr>
<td>Switching principle</td>
<td>Electronic</td>
</tr>
<tr>
<td>Repeating accuracy R (mm)</td>
<td>&lt; 0,5</td>
</tr>
<tr>
<td>Hysteresis (mm)</td>
<td>2</td>
</tr>
<tr>
<td>Series connection</td>
<td>Max. 30 sensors</td>
</tr>
<tr>
<td>Technology</td>
<td>RFID</td>
</tr>
</tbody>
</table>
### PART NUMBERS

**Combo (Sensor + Actuator) 22 mm interaxis**

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Model</th>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1292000</td>
<td>MRFID C S CA M</td>
<td>M12 connector</td>
<td>Actuator coded</td>
</tr>
<tr>
<td>1292003</td>
<td>MRFID C S CA S</td>
<td>5 m cable</td>
<td></td>
</tr>
<tr>
<td>1292010</td>
<td>MRFID C S IA M</td>
<td>M12 connector</td>
<td>Individual coding</td>
</tr>
<tr>
<td>1292013</td>
<td>MRFID C S IA S</td>
<td>5 m cable</td>
<td></td>
</tr>
<tr>
<td>1292020</td>
<td>MRFID C S UA M</td>
<td>M12 connector</td>
<td>Unique coding</td>
</tr>
<tr>
<td>1292023</td>
<td>MRFID C S UA S</td>
<td>5 m cable</td>
<td></td>
</tr>
</tbody>
</table>

**Combo (Sensor + Actuator) 78 mm interaxis**

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Model</th>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1292100</td>
<td>MRFID C B CA M</td>
<td>M12 connector</td>
<td>Actuator coded</td>
</tr>
<tr>
<td>1292103</td>
<td>MRFID C B CA S</td>
<td>5 m cable</td>
<td></td>
</tr>
<tr>
<td>1292110</td>
<td>MRFID C B IA M</td>
<td>M12 connector</td>
<td>Individual coding</td>
</tr>
<tr>
<td>1292113</td>
<td>MRFID C B IA S</td>
<td>5 m cable</td>
<td></td>
</tr>
<tr>
<td>1292120</td>
<td>MRFID C B UA M</td>
<td>M12 connector</td>
<td>Unique coding</td>
</tr>
<tr>
<td>1292123</td>
<td>MRFID C B UA S</td>
<td>5 m cable</td>
<td></td>
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</tbody>
</table>

**Individual sensors 22 mm interaxis**

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Model</th>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1292200</td>
<td>MRFID S S CA M</td>
<td>M12 connector</td>
<td>Actuator coded</td>
</tr>
<tr>
<td>1292203</td>
<td>MRFID S S CA S</td>
<td>5 m cable</td>
<td></td>
</tr>
<tr>
<td>1292210</td>
<td>MRFID S S IA M</td>
<td>M12 connector</td>
<td>Individual coding</td>
</tr>
<tr>
<td>1292213</td>
<td>MRFID S S IA S</td>
<td>5 m cable</td>
<td></td>
</tr>
</tbody>
</table>

**Individual sensors 78 mm interaxis**

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Model</th>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1292300</td>
<td>MRFID S B CA M</td>
<td>M12 connector</td>
<td>Actuator coded</td>
</tr>
<tr>
<td>1292303</td>
<td>MRFID S B CA S</td>
<td>5 m cable</td>
<td></td>
</tr>
<tr>
<td>1292310</td>
<td>MRFID S B IA M</td>
<td>M12 connector</td>
<td>Individual coding</td>
</tr>
<tr>
<td>1292313</td>
<td>MRFID S B IA S</td>
<td>5 m cable</td>
<td></td>
</tr>
</tbody>
</table>

**Individual actuators**

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1292290</td>
<td>MRFID A S</td>
<td>Actuator for sensors 22 mm interaxis</td>
</tr>
<tr>
<td>1292290</td>
<td>MRFID A B</td>
<td>Actuator for sensors 78 mm interaxis</td>
</tr>
</tbody>
</table>

**Spacers***

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1292401</td>
<td>MRFID SP S</td>
<td>Spacer for sensors 22 mm interaxis</td>
</tr>
<tr>
<td>1292400</td>
<td>MRFID SP B</td>
<td>Spacer for sensors 78 mm interaxis</td>
</tr>
</tbody>
</table>

* Ordering code includes one spacer.

### AVAILABLE CABLES

- Male - Female M12 4-pole or 8-pole straight connectors. See page 37
- Male - Female M12 4-pole 90° angled connectors. See page 37
- Female M12 4-pole or 8-pole connectors. See page 38
- Type A, B, C T connectors. See page 38
- Termination plug. See page 38
MECHANICAL DATA

DIMENSIONS

S series
Cable version

M12 Connector version

B series
Cable version

M12 Connector version

Spacer S

Spacer B

Dimensions: mm

ACCESSORIES

T Connectors

Type A  To gain status output from the connected sensor
Type B  For series connections of 2 or more sensors
Type C  To introduce additional power supplies in long series

Extension cables

Type S
Male - Female
M12 connector (straight)
Length: 1, 3, 5, 10 m
Poles: 4 or 8

Type L
Male - Female
M12 connector (90°)
Length: 1, 3, 5, 10 m
Poles: 4

Type C
Female M12 connector
Length: 1, 3, 5, 10 m
Poles/wires: 4 or 8
**CIRCUIT DIAGRAM**

- Actuator
- Receiver
- Power
- Inputs
- EDM
- OSSD
- 2
- 6
- 8
- 4
- 7
- 5

**SERIES CONNECTION EXAMPLE**

- M RFID EC C 4 1
- M RFID EC C 4 3
- M RFID EC C 4 5
- M RFID EC C 4 10
- M RFID EC C 4 1
- M RFID EC C 4 3
- M RFID EC C 4 5
- M RFID EC C 4 10
- Female M12 connector
- Length: 1, 3, 5, 10 m
- Poles/wires: 4

**PIN-OUT**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VDC</td>
</tr>
<tr>
<td>2</td>
<td>Safety input 1</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>Safety output 1</td>
</tr>
<tr>
<td>5</td>
<td>Diagnostic output</td>
</tr>
<tr>
<td>6</td>
<td>Safety input 2</td>
</tr>
<tr>
<td>7</td>
<td>Safety output 2</td>
</tr>
<tr>
<td>8</td>
<td>EDM input</td>
</tr>
</tbody>
</table>

- Power supply and load contactors Q1 e Q2
- M RFID EC C 8 1
- M RFID EC C 8 3
- M RFID EC C 8 5
- M RFID EC C 8 10
- Female M12 connector
- Length: 1, 3, 5, 10 m
- Poles/wires: 4

**CIRCUIT DIAGRAM**

- M RFID TP
- Termination plug
- Type B
- Male - Female M12 connector (90°)
- Length: 1, 3, 5, 10 m
- Poles: 4

**CIRCUIT DIAGRAM**

- M RFID EC C 4 1
- M RFID EC C 4 3
- M RFID EC C 4 5
- M RFID EC C 4 10
- M RFID EC C 4 1
- M RFID EC C 4 3
- M RFID EC C 4 5
- M RFID EC C 4 10
- Male - Female M12 connector (straight)
- Length: 1, 3, 5, 10 m
- Poles: 4

**CIRCUIT DIAGRAM**

- M RFID EC C 8 1
- M RFID EC C 8 3
- M RFID EC C 8 5
- M RFID EC C 8 10
- Female M12 connector
- Length: 1, 3, 5, 10 m
- Poles/wires: 4

**CIRCUIT DIAGRAM**

- M RFID TP
- Termination plug
- Type B
- Male - Female M12 connector (90°)
- Length: 1, 3, 5, 10 m
- Poles: 4

**CIRCUIT DIAGRAM**

- M RFID EC C 4 1
- M RFID EC C 4 3
- M RFID EC C 4 5
- M RFID EC C 4 10
- M RFID EC C 4 1
- M RFID EC C 4 3
- M RFID EC C 4 5
- M RFID EC C 4 10
- Male - Female M12 connector (straight)
- Length: 1, 3, 5, 10 m
- Poles: 4

**CIRCUIT DIAGRAM**

- Sensor 1
- Automatic Restart/EDM
- Sensor 2
- Automatic Restart/EDM
- Sensor 3
- Automatic Restart/EDM