SI SERIES

MAGNETIC SWITCHES

ROBUST, RESISTANT IN HOSTILE ENVIRONMENTS, IDEAL TO
OVERCOME LIMITATIONS OF OTHER MAGNETS

FEATURES:
• TOTALLY ENCLOSED
• AVAILABLE IN TWO MAGNETIC SWITCHES TYPES
• NO MAINTENANCE REQUIRED
• UNAFFECTED BY EXTERNAL MECHANICAL INFLUENCES
• SPEED OF INDUCTOR TO SWITCH MAXIMUM: 20 m /s

APPLICATIONS:
• Over-winding gear
• Checking the presence of cages at deck levels and
  shaft bottoms
• Checking the load on conveyors
• Positioning of traveling cranes and travel stops
• Gantry crane travel limits
• Travel limits of mine cars
• Control of cars and positioning of ingot rollers
• Control of cars for blast furnace loading
• Travel limits of moving spouts
• Signaling of billet cars
• Control of skips and hoisting cages
• Positioning of conveyor belts relative to hoppers
• Door closing control mechanisms
• Transmission of data to traveling cranes
• Positioning & checking the presence of mine cars
DESCRIPTION:
The magnetic switches and inductors used for motion, position, and limit detection on equipment and moving systems in difficult environments. These products are used in industrial environments where motion and position detection is of utmost importance, or even vital. They are used in different applications in rolling mills and steel mills such as opening and closing locks and gantry cranes positioning. These solutions offer contact-free detection, with no mechanical intermediary, and function without any external power supply (no batteries, or main supply).

The switch mechanism consists of two changeover contacts on a movable plate, which are operated simultaneously and controlled by permanent magnets contained within the switch. The position of the movable plate can be altered by the influence of a magnet of the correct polarity moving in the proximity of the switch. Two types of switch are available, each with a different operating action dependent on the control function required:

AUTOMATIC RESET - Mechanical Analog Type with Roller Switch. (RA): is operated by the approach of the inductor and is only maintained as long as the inductor is within the operating zone. On leaving the proximity of the switch the contacts will return to their original position.

TWO POSITION - Mechanical Analog Type with Tumbler Switch. (PS): is operated by the movement of the inductor while in the proximity of the switch, and remain in that position until such time as they are operated by the passage of the inductor in the opposite direction. Effectively the switch is memorizing the movement produced by the inductor.

SPECIFICATIONS:

<table>
<thead>
<tr>
<th>ELECTRICAL</th>
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<tbody>
<tr>
<td><strong>MAGNETIC SWITCH</strong></td>
<td>CONTACTS: Two changeover contacts, silver-gold 900/1000</td>
</tr>
<tr>
<td>RATINGS</td>
<td>2.5 Amps at 240VAC; 0.5 Amps at 110 VDC</td>
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<tr>
<td>Contacts may be connected in series to switch 240VDC</td>
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<tr>
<td>Connecting the contacts in parallel enables a current of 4 Amps AC to be interrupted</td>
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<tr>
<td><strong>MECHANICAL:</strong></td>
<td>Magnetic Switch: Alloy casting coated with Rilsan</td>
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<tr>
<td>Inductor: Polyester resin case</td>
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<tr>
<td><strong>HOUSING</strong></td>
<td>Operating Temperature: -20°C to 70°C (-4°F to 158°F)</td>
</tr>
<tr>
<td>Weight: SI-3002: 3.4 kg</td>
<td>SI-3102: 1.3 kg</td>
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<tr>
<td>SI-3009: 2.0 kg</td>
<td>SI-3105: 3.0 kg</td>
</tr>
<tr>
<td>SI-3107-A36: 1.4 kg</td>
<td>SI-3107-A50: 3.6 kg</td>
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<tr>
<td><strong>OPERATING DISTANCE - MAXIMUM</strong></td>
<td></td>
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<tr>
<td>Magnetic Switch</td>
<td>Inductor</td>
</tr>
<tr>
<td>SI-3002-PS / RA / PSI</td>
<td>SI-3102</td>
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<tr>
<td>SI-3009-PS / RA</td>
<td>SI-3107-A36</td>
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<tr>
<td>SI-3009-PS / RA</td>
<td>SI-3105</td>
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DIMENSIONS:

MAGNETIC SWITCHES:

SI-3002

SI-3009

Axis 1 & 2: axis of movement of inductors, depending on application

INDUCTORS

SI-3102

SI-3105

SI-3107-A36 / A50

A B C E

SI-3107-A36 150 80 70 110
SI-3107-A50 190 105 105 145
POSITION OF INDUCTOR AND ONE SWITCH IN TWO POSITION (PS):

Inductors SI-3102 & SI-3105

Inductor SI-3107
POSITION OF INDUCTOR AND SWITCH IN AUTOMATIC RESET (RA)

Inductors SI-3102 and SI-3105

(1) Switch SI-3002-RA and Inductor SI-3105
(2) Switch SI-3009-RA and Inductor SI-3102

(1) Switch SI-3002-RA and Inductor SI-3105
(2) Switch SI-3009-RA and Inductor SI-3102
### ORDERING INFORMATION:

<table>
<thead>
<tr>
<th>MAGNETIC SWITCH</th>
<th>TYPE</th>
<th>INDUCTOR</th>
<th>POLARITY (if necessary)</th>
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For Example:

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<tr>
<td>SI-3002</td>
<td>PS</td>
<td>SI-3107 A36</td>
<td>N</td>
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#### MAGNETIC SWITCH
- SI-3002-PS
- SI-3002-RA
- SI-3002-PSI
- SI-3009-PS
- SI-3009-RA

#### INDUCTORS
- SI-3102
- SI-3105
- SI-3107 A36-N
- SI-3107 A36-S
- SI-3107 A50-N
- SI-3107 A50-S

#### POLARITY OF INDICATOR
- North – Orange
- South – Blue

**PS** = Two Position  
**RA** = Automatic Reset  
**PSI** = Stainless Steel Housing