### Magnetic Switches for WEKA Visual Level Indicators

#### Australian Version

#### Overview and Selection Guide

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<td>230V/1A/60VA/60W</td>
<td>Standard</td>
<td>4</td>
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<tr>
<td>37160-NS</td>
<td></td>
<td>SPDT</td>
<td>-50°C...+150°C</td>
<td>230V/1A/60VA/60W</td>
<td>with ss-cable gland</td>
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<td>37160-NM</td>
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<td>SPDT</td>
<td>-50°C...+150°C</td>
<td>230V/1A/60VA/60W</td>
<td>with brass cable gland</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Type code

**Switch Function**

- SPDT

**Version**

- new ss-switches with metric cable gland: N
- Standard with PA cable gland: N
- with ss-cable gland: S
- with brass cable gland: M

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This data sheet set applies to Weka type 37160/xx magnetic switches manufactured after June 2008. Switches made before this time have Blue rather than Grey conductors to common terminal of switch.
**Installation Instructions**

**Magnetic Switches for WEKA Visual Level Indicators**

**Mounting**

Normal: Valid is the indicated switching function on the type label (float below switch)
Installation 180 °C opposite of the indication rail with the permitted tolerance according to the tube diameter
Cable exit downwards

**Variation:** Each of the following variants leads to a reversion of the indicated switching logic
Mounting with cable exit upwards
Mounting adjacent to the indication rail

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**34000**

- Magnetic switch, Transmitter

**23614, 34300, 32755**

- Optional

**34110**

- Optional

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Contact rating guidelines for Magnetic Switches

Caution:
Read this information before installing level indicators that have magnetic switches.
Use of magnetic switches with inappropriate contact ratings can result in damage to the magnetic switches and malfunctioning of level indicators.
For Ex rated magnetic switches (311x0-NI / -ND) it is necessary to adhere to the specified limit values of electrical parameters of the circuit.

Construction:
The key element of a Weka magnetic switch module or sub-assembly is a reed switch.
A reed switch consists of two pieces of special flattened wire (the reeds or "paddles") hermetically sealed in a glass capsule. The reed switch is actuated by the magnetic field of the float. The glass capsule is filled with an protective gas that ensures high electrical life expectancy of millions of switching cycles.

Contact rating (resistive loads):

<table>
<thead>
<tr>
<th>Typ</th>
<th>Contact rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>31130-NN</td>
<td>max. 250V</td>
</tr>
<tr>
<td>31130-NW</td>
<td>max. 1A</td>
</tr>
<tr>
<td>31130-NA</td>
<td>max. 220VA</td>
</tr>
<tr>
<td>31130-NK</td>
<td>max. 160W</td>
</tr>
<tr>
<td>31130-NI</td>
<td>max. 60VA</td>
</tr>
<tr>
<td>31130-ND</td>
<td>max. 40W</td>
</tr>
<tr>
<td>31130-NM</td>
<td>max. 35VA</td>
</tr>
<tr>
<td>31130-NS</td>
<td>max. 25VA</td>
</tr>
<tr>
<td>31130-NX</td>
<td>max. 10W</td>
</tr>
<tr>
<td>31130-NY</td>
<td>max. 5W</td>
</tr>
</tbody>
</table>

Also 37160-N*

These values apply only for resistive loads.
For inductive loads, see below.

Note:
None of the specified values may be exceeded.

Caution:
For many resistive load applications, the electrical circuit can have inductance and / or capacitance. Voltage spikes of 6 to 7 times the normal values can occur when switching off inductive loads. This can sometimes result in the contacts getting welded together, destroying the switch.
Examples of inductive loads are transformers, solenoid operated devices (valves, contactors), some types of wound-filament lamps, etc.

Protecting magnetic switches used with inductive loads:

**Figure 1 (D.C.)**

For D.C. applications:
A diode connected across the load coil short circuits the reverse voltage spike that occurs when the supply is switched off, thus protecting the switch contacts.

**Figure 2 (A.C.)**

For A.C. applications:
A resistor and capacitor in series connected across the switch forms a high impedance path at normal A.C. frequencies. This impedance turns low at high frequencies, diverting spikes currents from the switch.
Magnetic switch, change over, bistable
with plastic cable gland, for Australia
Type 37160-NN

External electrical connections

Function
Magnetic switch for
WEKA Visual Level Indicators

The switch module is attached to the float chamber, diametrically opposite the indication rail, with cable-exit below (see data sheet 20010501). The float magnet activates the reed contact when the liquid in the float chamber reaches that level. The switching logic is reversible by installing the switch module adjacent to the indication rail, or alternatively by inverting the switch module with cable-exit upwards.

Please refer to the safety guidelines.

Product code

<table>
<thead>
<tr>
<th>Product code</th>
<th>with 3m cable</th>
<th>with 5m cable</th>
<th>with 10m cable</th>
<th>with 20m cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>37160-NN/3</td>
<td>37160-NN/5</td>
<td>37160-NN/10</td>
<td>37160-NN/20</td>
<td></td>
</tr>
</tbody>
</table>

Switching logic
Change over, bistable

Dimensions

Enclosure
IP68 - 5bar (EN 60529)

Material
Housing Stainless steel 316 /316L
Cable gland PA6, grey, 3…8mm
Seal Perbunan (NBR)
Cable LiYY, grey, Ø 5.8mm
Shield not shielded
Cable cores 3 x 0,75mm²
Core colours BK, GY, BN
Tag label Polyester, yellow, black writing

Operating conditions

<table>
<thead>
<tr>
<th>Media temperature</th>
<th>Ambient temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>-50°C…+150°C</td>
<td>-20°C…+80°C</td>
</tr>
</tbody>
</table>

Fixation
If ordered together with a VLI fixation is included in the delivery
If fixation is ordered separately please indicate tube diameter
for tube diameter 30…40mm Article no. 80648
for tube diameter 40…57mm and 57…80mm Article no. 84043

Remarks
The switch is maintenance free.
Magnetic switch, change over, bistable
for highest chemical resistance, for Australia

Type 37160-NS

External electrical connections

- Installed opposite the indication rail
- Cable exit downwards

Function

Magnetic switch for
WEKA Visual Level Indicators

The switch module is attached to the float chamber, diametrically opposite the indication rail, with cable-exit below (see data sheet 20010501). The float magnet activates the reed contact when the liquid in the float chamber reaches that level. The switching logic is reversible by installing the switch module adjacent to the indication rail, or alternatively by inverting the switch module with cable-exit upwards.

Please refer to the safety guidelines.

Product code

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>37160-NS/3</td>
<td>with 3m cable</td>
</tr>
<tr>
<td>37160-NS/5</td>
<td>with 5m cable</td>
</tr>
<tr>
<td>37160-NS/10</td>
<td>with 10m cable</td>
</tr>
<tr>
<td>37160-NS/20</td>
<td>with 20m cable</td>
</tr>
</tbody>
</table>

Switching logic

Change over, bistable

Contact rating

- max. 230V
- max. 1A
- max. 60VA
- max. 60W

Dimensions

- Hysterese 10
- Ø 17.2
- Ø 6.2

Enclosure

IP68 - (EN 60529)

Material

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>Stainless steel 316 /316L</td>
</tr>
<tr>
<td>Cable gland</td>
<td>Stainless steel, 1.4436, 5…10mm</td>
</tr>
<tr>
<td>Seal</td>
<td>FPM</td>
</tr>
<tr>
<td>Cable</td>
<td>LiYY, grey, Ø 5.8mm</td>
</tr>
<tr>
<td>Shield</td>
<td>not shielded</td>
</tr>
<tr>
<td>Cable cores</td>
<td>3 x 0,75mm²</td>
</tr>
<tr>
<td>Core colours</td>
<td>BK, GY, BN</td>
</tr>
<tr>
<td>Tag label</td>
<td>Polyester, silver, black writing</td>
</tr>
</tbody>
</table>

Operating conditions

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<tr>
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<td>Ambient temperature</td>
<td>-20°C…+80°C</td>
</tr>
</tbody>
</table>

Media temperature

Temperature of liquid within the float chamber

Ambient temperature

Temperature of air around the magnetic switch

Fixation

If ordered together with a VLI fixation is included in the delivery
If fixation is ordered separately please indicate tube diameter
for tube diameter 30…40mm Article no. 80648
for tube diameter 40…57mm and 57…80mm Article no. 84043

Remarks

The switch is maintenance free.
Magnetic switch, change over, bistable
with brass cable gland, for Australia
Type 37160-NM

External electrical connections

Function

Magnetic switch for WEKA Visual Level Indicators

The switch module is attached to the float chamber, diametrically opposite the indication rail, with cable-exit below (see data sheet 20010501). The float magnet activates the reed contact when the liquid in the float chamber reaches that level. The switching logic is reversible by installing the switch module adjacent to the indication rail, or alternatively by inverting the switch module with cable-exit upwards.

Please refer to the safety guidelines.

Product code

37160-NM/3 with 3m cable
37160-NM/5 with 5m cable
37160-NM/10 with 10m cable
37160-NM/20 with 20m cable

Switching logic

Change over, bistable

Dimensions

Contact rating

max. 230V
max. 1A
max. 60VA
max. 60W

Enclosure

IP68 - 5bar (EN 60529)

Material

Housing Stainless steel 316/316L
Cable gland Brass, nickel-plated, 5…10mm
Seal Perbunan (NBR)
Cable LiYY, grey, Ø 5.8mm
Shield not shielded
Cable cores 3 x 0,75mm²
Core colours BK, GY, BN
Tag label Polyester, silver, black writing

Operating conditions

<table>
<thead>
<tr>
<th>Media temperature</th>
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<tbody>
<tr>
<td>-50°C…+150°C</td>
<td>-20°C…+80°C</td>
</tr>
</tbody>
</table>

Media temperature Temperature of liquid within the float chamber
Ambient temperature Temperature of air around the magnetic switch

Fixation

If ordered together with a VLI fixation is included in the delivery
If fixation is ordered separately please indicate tube diameter
for tube diameter 30…40mm Article no. 80648
for tube diameter 40…57mm and 57…80mm Article no. 84043

Remarks

The switch is maintenance free.
External electrical connections

- Installed opposite to indication rail
- Connector downwards
- () colours for IEC 61076-2-101 cabling

Instruction manual

Function
Magnetic switch for WEKA VLI
The magnetic switch is mounted outside of the float chamber opposite to the indication rail. The switching logic can be reversed by inverting the switch module with connector upwards or by installing the switch module adjacent to the indication rail where technically authorised (see datasheet 20010501).
The magnet inside the float activates the reed switch, when the liquid in the float chamber reaches that level.

Please refer to the safety guidelines.

Product code
31160-NP

Switching logic
Change-over, bistable
SPDT

Contact rating
max. 230V
max. 1A
max. 60VA
max. 60W

Enclosure
IP68 - 5bar (EN 60529)

Material
Housing
Stainless steel 316 /316L
Connector
M12 A, IEC 61076-2-101
Zinc die-cast, Nickel plated
PA (Polyamide)

Type label
Polyester: white, black printing

Dimensions

Fixation
When ordering level indicators with switches, hose clamps are included.
When ordering switches as spare parts, hose clamps are never included and must be ordered separately.
In case of ordering hose clamps pipe size must be indicated:
For pipe diameter 30…40mm Article no. 80648
For pipe diameter 40…57mm and 57…80mm Article no. 84043

Note
The switch is maintenance free.