The SOR® 1510 Level Switch mounts into the side of a vessel. Electric switching action is provided by the float moving a magnet into the field of a hermetically sealed reed switch capsule.

The unit may be mounted for either high or low liquid level alarm by rotating the switch body to the proper position. The body wrench flats provide for ease of rotation and proper positioning. See decal on housing.

Before Installation of the Level Switch:
- Inspect the unit for any shipment damage.
- Check for mechanical clearance of the float. Float must move freely without binding throughout its stroke.
- Use an acceptable thread compound when installing unit to ensure a leak-free fit and to avoid thread galling.
- To achieve required function, install the unit according to the nameplate instructions shown here.

NOTE: If you suspect that a product is defective, contact the factory or the SOR Representative in your area for a return authorization number (RMA). This product should only be installed by trained and competent personnel.

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Design and specifications are subject to change without notice.

For latest revision, go to www.SORInc.com
Installation

The unit may be mounted in any of the following installation arrangements:

- 1-1/2" NPT half coupling (No full coupling).
- 2" NPT full coupling. (Use in conjunction with 2 x 1-1/2" NPT bushing as required.)
- 2" NPT pipe tee. (Use in conjunction with 2 x 1-1/2" NPT bushing as required.)
- Optional flanged mounting.
- Optional chamber mounting.

MD Remote Option (includes plunger, 20 foot cable and two crimps.)

- Screw plunger to the top of unit.
- Thread the 20’ cable through the hole in plunger and create a 14 inch top loop as shown below.
- At the bottom of the cable, a second loop can be created as a handle for actuation at the desired length.

Linear = mm/inches

Drawing 0098636
**Safety Integrity Level (SIL) Installation Requirements**

The SOR pressure switches have been evaluated as Type-A safety related hardware. To meet the necessary installation requirements for the SIL system, the following information must be utilized:

- Proof Test Interval shall be one year.
- Units may only be installed for use in Low Demand Mode.
- Products have a HFT (Hardware Fault Tolerance) of 0, and were evaluated in a 1oo1 (one out of one) configuration.

**Float Attachment (Series 1500 with Flange)**

1. Place two drops of Loctite 271 inside the threaded hole of the float.

2. Thread the float onto the set screw and hand-tighten.

*NOTE: Do not remove the set screw as it secures the pivot arm to the shaft.*
Dimensions are for reference only. Contact the factory for certified drawings for a particular model number.
**Special Conditions for Safe Use**

This apparatus may have a combined nameplate which carries multiple approvals (intrinsically safe and flameproof). The equipment should be marked as to which protection method it is installed as and shall not be changed or utilized in any other means than was originally marked by the end user.

When marked and installed as Ex i equipment, the permanently attached leads must be suitably protected against mechanical damage and terminated in a suitable junction box or terminal facility having a degree of protection at least IP20.

When marked and installed as Ex d equipment, the permanently attached leads must be suitably protected against mechanical damage and terminated in a suitable junction box or terminal facility.

---

**Electrical Connection**

Ensure that the wiring conforms to all applicable local and national electrical codes and install unit(s) according to relevant national and local safety codes.

Electrical connection is free wire leads with a 1/2” NPT(F) conduit connection. Use two wrenches — one to hold the hex conduit connection, the other to tighten conduit fitting. Switching element is a hermetically sealed reed switch.

---

**CAUTION**

Do not exceed catalog stated electrical ratings. Improper current input to switch will cause permanent damage to contacts.
### ATEX and IECEX Marking Details

For ATEX and IECEX Certified Models

- **Manufacturer’s Registered Trademark**
- **ATEX Listing Information**
- **Product Type Identification**

#### Standards Assessed To

**ATEX Certification:**

**IECEX Certification:**
- IEC 60079-0: 2011, IEC 60079-1: 2007-04,

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**Wiring for DPDT Relay**

For Type 1510 Level Switches equipped with DPDT relays, a wiring schematic and pin position schematic is shown below. When the 1510 is actuated, the coil will energize and “make” both NO1 and NO2 while it will “break” NC1 and NC2. This provides a DPDT circuit.
Declaration of Conformity

For ATEX Certified Models

EC Declaration of Conformity

Type 1500 Electric Switches

Manufacturer
SOR Inc., 14685 West 105th Street, Lenexa, Kansas 66215-2003
United States of America

Date of Issue
December 18, 2017

We declare that the above products conform to the following specifications and directives

EN 60079-11: 2012 & EN 60079-26: 2015
IEC 60079-0: 2011, IEC 60079-1: 2007,

Carries the Marking

ATEX Ex ia IIC Ga
II 1 G
I3 (-40°C ≤ Ta ≤ +125°C) or T3 (-20°C ≤ Ta ≤ +125°C)

ECEx Ex ia IIC Ga
I3 (-40°C ≤ Ta ≤ +125°C) or T3 (-20°C ≤ Ta ≤ +125°C)

ATEX Ex db IIC Ga/Gb
II 2 G
I4 (-40°C ≤ Ta ≤ +90°C) or T5 (-40°C ≤ Ta ≤ +75°C)

ECEx Ex db IIC Ga/Gb
I4 (-40°C ≤ Ta ≤ +90°C) or T5 (-40°C ≤ Ta ≤ +75°C)

Reference Documents

EC-Type Examination Certificate
Baseefa06ATEX0271X, IECEx BAS06.0063X
Issued January 12, 2007

Baseefa13ATEX0056X, IECEx BAS13.0035X
Issued July 26, 2013

ATEX Notified Body
SGS Baseefa Ltd., (Notified Body No. 1180)
Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ, United Kingdom
Baseefa Customer Reference No. 1U21

Person Responsible
Michael J. Bequette (VP of Engineering)

Engineered to Order with Off-the-Shelf Speed

14685 West 105th Street, Lenexa, KS 66215-2003
913-888-2630 • 800-676-6794 USA • 913-888-0767 FAX

Form 451 (05.18) ©SOR Inc.
### Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Probable Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Float in actuated position but no output signal.</td>
<td>■ No power supply.</td>
</tr>
<tr>
<td></td>
<td>■ Switch damaged. (Replace.)</td>
</tr>
<tr>
<td>Float in de-actuated position but still receiving an output signal.</td>
<td>■ Switch damaged. (Replace.)</td>
</tr>
<tr>
<td>Control will not function when installed but operates when removed from process connection.</td>
<td>■ Inadequate float travel. Float travel restricted by mounting nozzle. See Mounting Requirements.</td>
</tr>
<tr>
<td>Liquid in vessel at the actuation level but unit does not respond.</td>
<td>■ Leaky or collapsed float. (Replace.)</td>
</tr>
<tr>
<td></td>
<td>■ Liquid specific gravity too low.</td>
</tr>
<tr>
<td></td>
<td>■ Float stem bound up or dirty. (Clean.)</td>
</tr>
</tbody>
</table>

### Replacement Parts

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3130-052</td>
<td>316SS Float Assembly</td>
</tr>
<tr>
<td>3130-106</td>
<td>W9 - SPST Hermetically Sealed Switch Capsule</td>
</tr>
<tr>
<td>3130-245</td>
<td>W1 - SPDT Hermetically Sealed Switch Capsule</td>
</tr>
<tr>
<td>3130-259</td>
<td>W1 - SPDT Switch/Conduit Connection Assembly (CK Option Only)</td>
</tr>
<tr>
<td>3130-107</td>
<td>L9 - SPST Hermetically Sealed Switch Capsule</td>
</tr>
<tr>
<td>3130-244</td>
<td>L1 - SPDT Hermetically Sealed Switch Capsule</td>
</tr>
<tr>
<td>3130-260</td>
<td>L1 - SPDT Switch/Conduit Connection Assembly (CK Option Only)</td>
</tr>
<tr>
<td>9227-028</td>
<td>MC Manual Check Assembly for 1 1/2” NPT Body*</td>
</tr>
<tr>
<td>9227-029</td>
<td>MD Manual Check Assembly for 1 1/2” NPT Body*</td>
</tr>
<tr>
<td>9227-024</td>
<td>MC Manual Check Assembly for 2” NPT Body*</td>
</tr>
<tr>
<td>9227-025</td>
<td>MD Manual Check Assembly for 2” NPT Body*</td>
</tr>
<tr>
<td>3130-040</td>
<td>20’ Remote Cable with two cable crimps, for use with MC or MD accessory only.</td>
</tr>
</tbody>
</table>

* Unit must have originally been supplied with MC or MD option.