



# 1550 Top Mounted Level Switch

## General Instructions

The SOR® 1550 Electric Level Switch mounts into the top of a vessel.

Electric switching action is provided by the float moving a magnet into the field of a hermetically sealed reed switch.

**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.*

### Before Installing 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 avoid thread galling.

## Electrical Connection

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

Wiring schematics shown on page 2.

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



**Do not exceed catalog stated electrical ratings. Improper current input to switch will cause permanent damage to contacts.**



*Design and specifications are subject to change without notice.*

*For latest revision, go to [www.SORInc.com](http://www.SORInc.com)*

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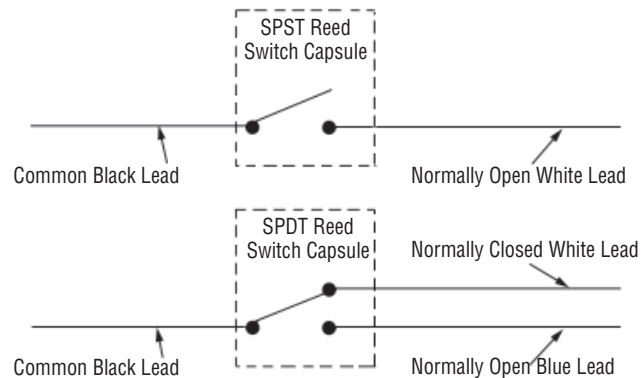
## Safety Integrity Level (SIL) Installation Requirements

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.

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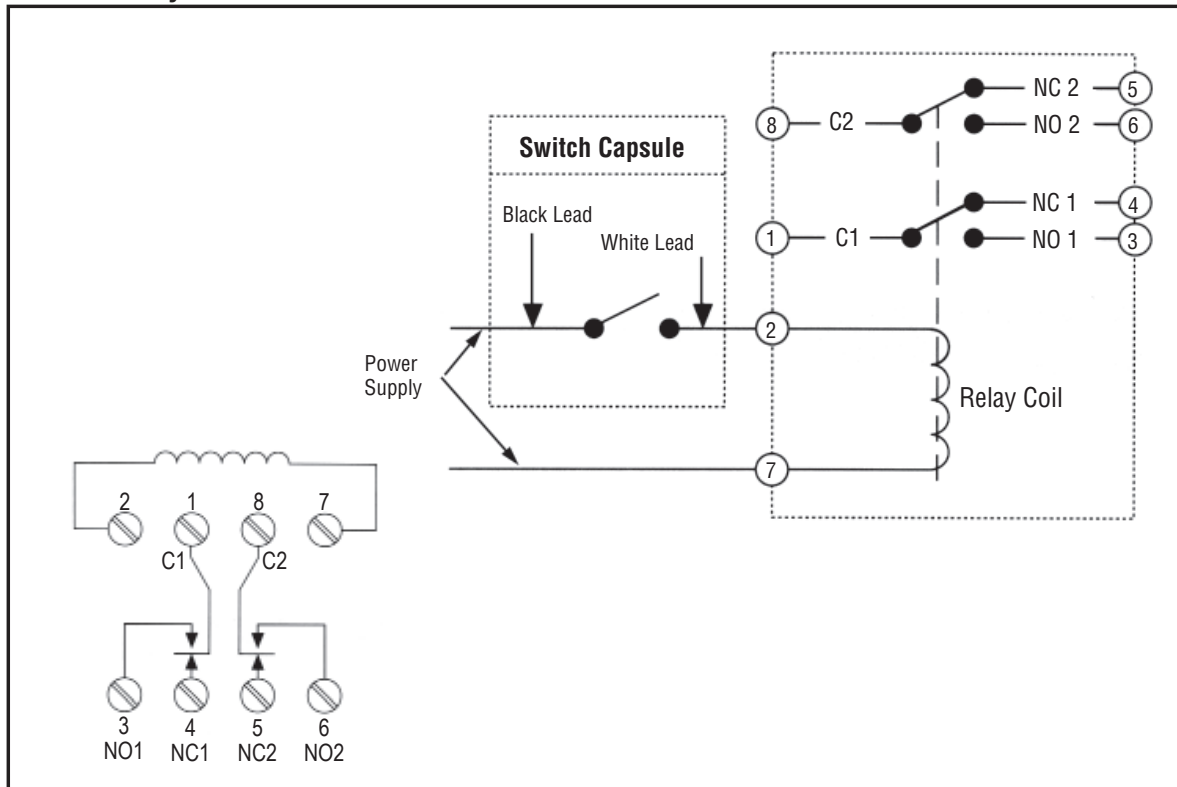
## Wiring for SPST and SPDT Switch Operation



## Wiring for DPDT Relay

For Type 1550 Level Switches equipped with DPDT relays, a wiring schematic and pin position schematic is shown below. When the 1550 is actuated, the coil will energize and “make” both NO1 and NO2 while it will “break” NC1 and NC2. This provides a DPDT circuit.

### DPDT Relay Schematic



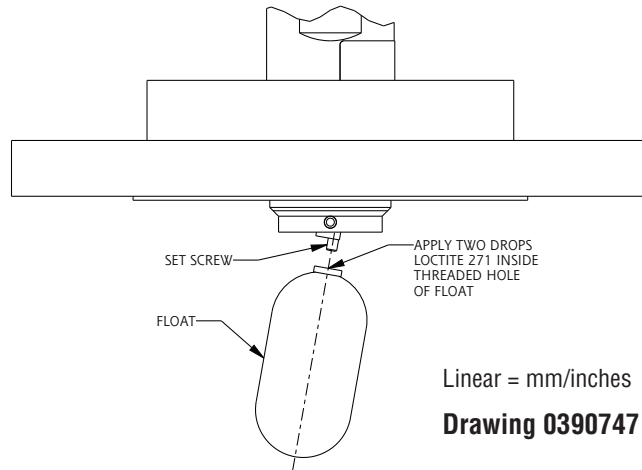
## Float Attachment (Series 1500 with Flange)

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

❷ 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.

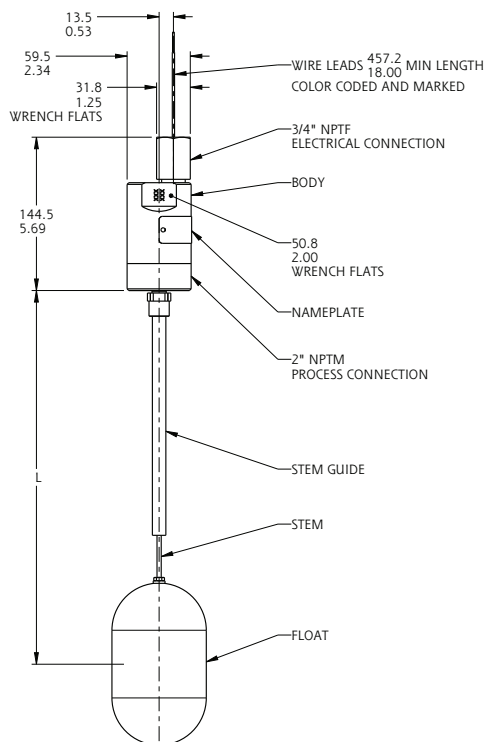
**NOTE:** Do not remove the stem guide as it may cause damage to the unit.



## 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 with a minimum degree of protection IP20.

## Dimensions

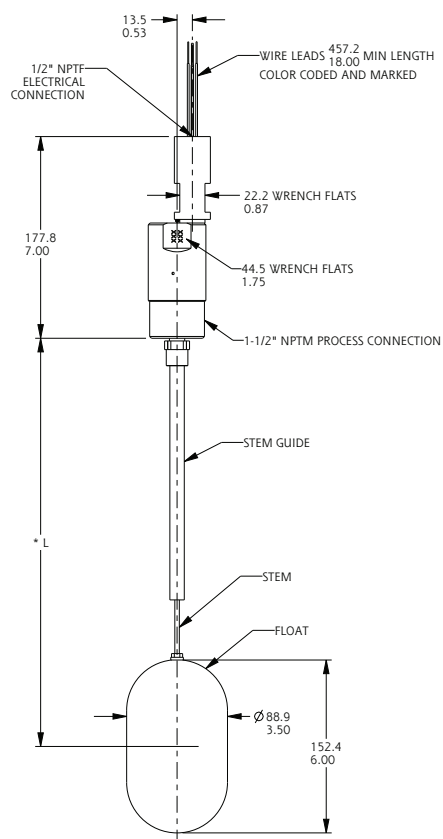


Linear = mm/inches

**Drawing 0390789**

*Dimensions are for reference only. Contact the factory for certified drawings for a particular model number.*

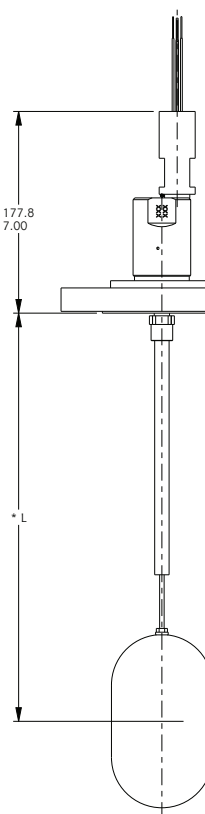
**With CK Accessory – ATEX and IECEx dual approved:**



Linear = mm/inches

**Drawing 0390764**





FLANGE PROCESS CONNECTION  
\* # RF FLANGE  
AS SPECIFIED ON SALES ORDER



# ATEX and IECEx Marking Details

## For ATEX and IECEx Certified Models

Manufacturer's Registered Trademark      ATEX Listing Information      Product Type Identification


☐ Ex db IIC T4 Ga/Gb Tamb -40°C to +90°C      ☐ Ex ia IIC T3 Ga Tamb -40°C to +125°C  
LENEVA, KS 66215 USA       II 1/2 G T5 Ga/Gb Tamb -40°C to +75°C 3A MAX, 64W MAX       II 1 G U1=28V I1=3A C1=0 L1=0  
 0598 Baseefa 13ATEX0059X      IECEx BAS 13-0035X

S/N       MODEL NUMBER       S#

ELECTRICAL RATING       MAX WORKING PRESSURE     

Product Model Identification







Drawing 0720552

# Declaration of Conformity

For ATEX Certified Models

## EU Declaration of Conformity



<b>Product</b>	<b>Type 1500 Electric Switches</b>							
<b>Manufacturer</b>	SOR Inc.							
<b>Place of Issue</b>	14685 West 105 <sup>th</sup> Street Lenexa, Kansas 66215-2003 United States of America							
<b>Date of Issue</b>	<b>June 18, 2020</b>							
<b>We declare under our sole responsibility that the above products conform to the following specifications and directives</b>	ATEX Directive (2014/34/EU) Equipment Intended for use in Potentially Explosive Atmospheres EN 60079-0:2018 IEC 60079-0:2017 EN 60079-11:2012 IEC 60079-11:2011 EN 60079-0:2012 + A11:2013 IEC 60079-0:2011 EN 60079-1:2014 IEC 60079-11:2011 EN 60079-11:2012 IEC 60079-26:2006 EN 60079-26:2007 IEC 60079-1:2014-06							
<b>Carries the Marking</b>	<table><tr><td>ATEX Marking</td><td>IECEx Marking</td></tr><tr><td> <b>II 1 G Ex ia IIC Ga</b> T3 (-40°C ≤ Ta ≤ +125°C) or T3 (-25°C ≤ Ta ≤ +125°C)</td><td><b>Ex ia IIC Ga</b> T3 (-40°C ≤ Ta ≤ +125°C) or T3 (-25°C ≤ Ta ≤ +125°C)</td></tr><tr><td> <b>II 2 G Ex db IIC Ga/Gb</b> T4 (-40°C ≤ Ta ≤ +90°C) or T5 (-40°C ≤ Ta ≤ +75°C)</td><td><b>Ex db IIC Ga/Gb</b> T4 (-40°C ≤ Ta ≤ +90°C) or T5 (-40°C ≤ Ta ≤ +75°C)</td></tr></table>		ATEX Marking	IECEx Marking	 <b>II 1 G Ex ia IIC Ga</b> T3 (-40°C ≤ Ta ≤ +125°C) or T3 (-25°C ≤ Ta ≤ +125°C)	<b>Ex ia IIC Ga</b> T3 (-40°C ≤ Ta ≤ +125°C) or T3 (-25°C ≤ Ta ≤ +125°C)	 <b>II 2 G Ex db IIC Ga/Gb</b> T4 (-40°C ≤ Ta ≤ +90°C) or T5 (-40°C ≤ Ta ≤ +75°C)	<b>Ex db IIC Ga/Gb</b> T4 (-40°C ≤ Ta ≤ +90°C) or T5 (-40°C ≤ Ta ≤ +75°C)
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<b>Reference Documents</b>	<b>EC-Type Examination Certificate</b> <b>Baseefa06ATEX0271X, IECEx BAS06.0063X</b> Issued January 12, 2007 <b>Baseefa13ATEX0056X, IECEx BAS13.0035X</b> Issued July 26, 2013							
<b>ATEX Notified Body</b>	<b>SGS Fimko Oy</b> (Notified Body No. 0598) Takomotie 8 Helsinki, 00380 Finland							
<b>Person Responsible</b>	Michael J. Bequette (VP of Engineering)							

Michael J. Bequette

**Engineered to Order with Off-the-Shelf Speed**



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## Troubleshooting

Symptom	Probable Cause
Float in actuated position but no output signal.	a. No power supply. b. Switch damaged. (Replace.)
Float in de-actuated position but still receiving an output signal.	a. Switch damaged. (Replace.)
Liquid in vessel at the actuation level but unit does not respond.	a. Leaky or collapsed float. (Replace.) b. Liquid specific gravity too low. c. Float stem bound up or dirty. (Clean.) d. Float travel is obstructed. Verify float can move freely and is not obstructed when installed.

## Replacement Parts

Part Number	Description
3130-091	W9 - SPST Hermetically Sealed Switch Capsule
3130-245	W1 - SPDT Hermetically Sealed Switch Capsule
3130-259	W1 - SPDT Switch/Conduit Connection Assembly (CK Option Only)
3130-107	L9 - SPST Hermetically Sealed Switch Capsule
3130-244	L1 - SPDT Hermetically Sealed Switch Capsule
3130-260	L1 - SPDT Switch/Conduit Connection Assembly (CK Option Only)
3101-122	316SS Float. (Consult factory for other materials.)
3130-396	Actuator Arm Replacement Kit



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