



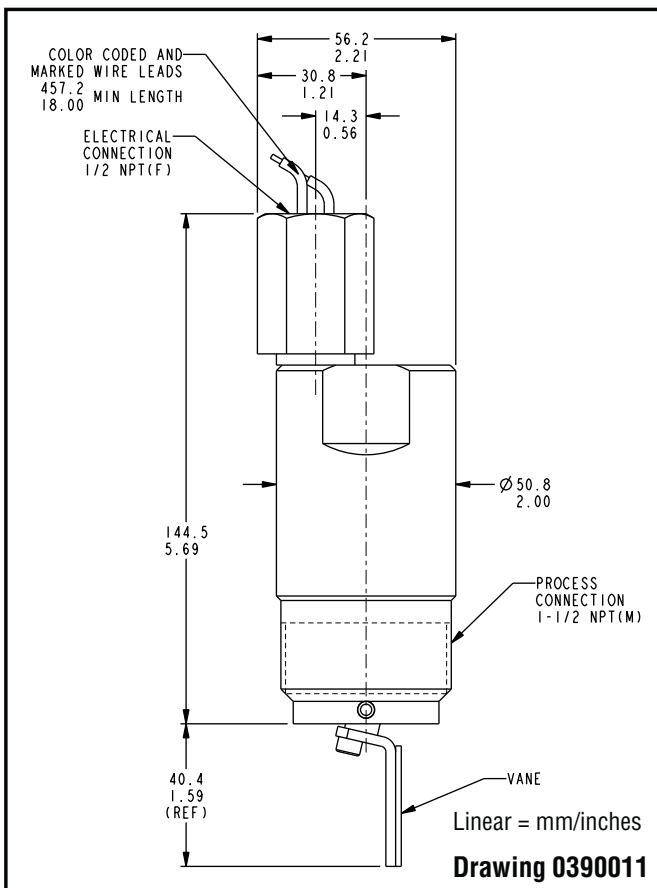
1520 Top Mounted Flow Detector

General Instructions

The SOR® 1520 Flow Detector must be mounted in a vertical position (horizontal pipe run). Electric detecting is caused by the liquid flow moving the vane and magnet into the field of a hermetically sealed reed detector capsule. Flow detecting takes place at approximately 1 ft./sec. velocity.

Two separate cavities make up the body — one for the magnetic/vane arm, one for the detector.

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 Detector

- Inspect the unit for any shipment damage.
- Check for mechanical clearance of the vane. The vane 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.
- When installed, the direction of flow should match the direction of the arrow on the unit.

Design and specifications are subject to change without notice.

For latest revision, go to www.sorinc.net

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

Safety Integrity Level (SIL) Installation Requirements

The SOR pressure detectors 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.

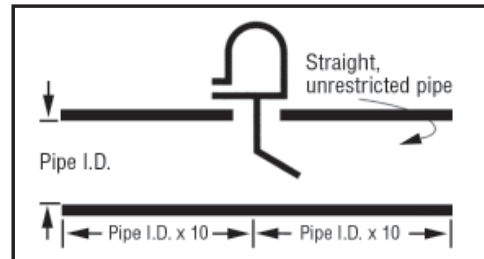
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Process Connection

Integrally mounted controls should be mounted with the vessel flange or nozzle within 3° of the vertical or horizontal centerline of the vessel, as applicable.

Control should be mounted with ten diameters (pipe ID x 10) length straight, unrestricted pipe on both sides.

Insulation of the control is not recommended.



Electrical Connection

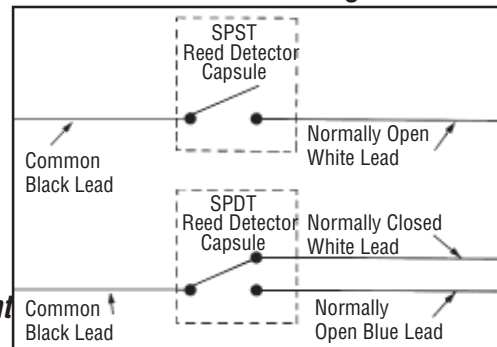
Ensure that wiring conforms to all applicable local and national electrical codes and install unit(s) according to relevant national and local safety codes.

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



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

Wiring Schematic

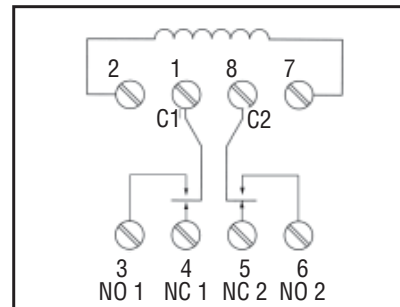
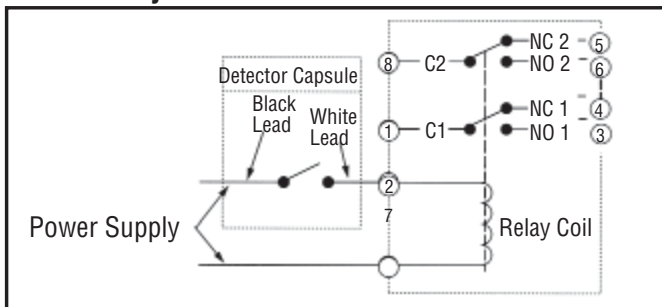


Special Conditions of Safe Use

The permanently attached leads must be suitably protected against mechanical damage and terminated in a suitable junction or terminal facility with a minimum degree of protection of at least IP20.0.

Troubleshooting

DPDT Relay Schematic



For Type 1520 Flow Detectors equipped with DPDT relays, a wiring schematic and pin position schematic is shown on page 2. When the 1520 is actuated, the coil will energize and “make” both NO1 and NO2 while it will “break” NC1 and NC2. This provides a DPDT circuit.

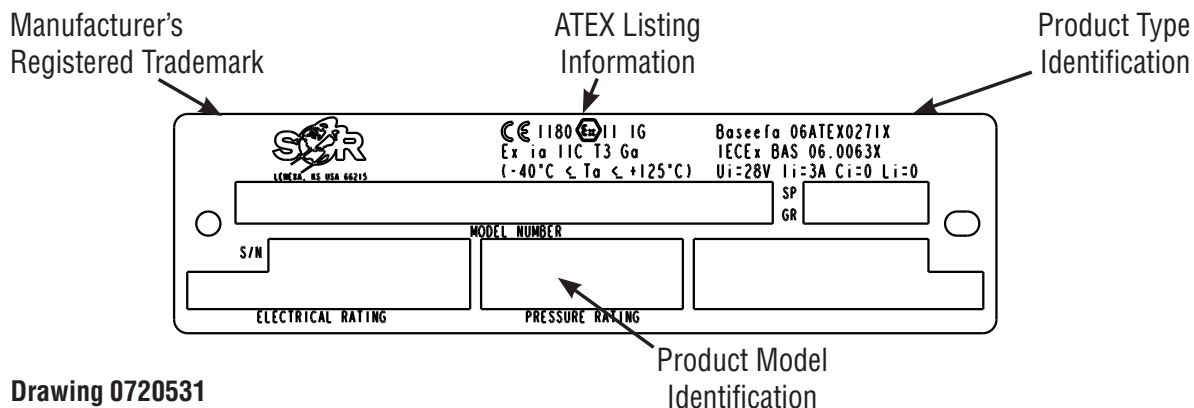
Symptom	Probable Cause(s)
Vane in actuated position but no output signal	a. No power supply. b. Detector damaged. (Replace)
Vane in de-actuated position but still receiving an output signal.	a. Detector damaged. (Replace)
Control will not function when installed but operates when removed from process connection.	a. Inadequate vane travel. Vane travel restricted by mounting nozzle. See Mounting Requirements.
Flow in pipe at the actuation rate but unit does not respond.	a. Damaged vane. (Replace) b. Flow rate too low. c. Vane bound up or dirty. (Clean)

Replacement Parts

Part Number	Description
3130-091	W9 - SPST Hermetically Sealed Detector Capsule
3130-245	W1 - SPDT Hermetically Sealed Detector Capsule
3130-107	L9 - SPST Hermetically Sealed Detector Capsule
3130-244	L1 - SPDT Hermetically Sealed Detector Capsule
3130-118	316SS Vane Assembly
3130-403	Actuator Arm Replacement Kit (1-1/2" NPT body size)
3130-404	Actuator Arm Replacement Kit (2" NPT body size)

ATEX and IECEx Marking Details

For ATEX and IECEx Certified Models





Drawing 0720531

Standards Assessed To: ATEX Certification: EN 60079-0: 2009 & EN 60079-11:2007
IECEx Certification: IEC 60079-0:2004 & IEC 60079-11: 1999

Declaration of Conformity

For ATEX Certified Models

EC Declaration of Conformity		CE
Product	Type 1500 Electric Detectors	
Manufacturer	SOR Inc. 14685 West 105 th Street Lenexa, Kansas 66215-2003 United States of America	
Date of Issue	November 12, 2012	
We declare that the above products conform to the following specifications and directives	ATEX Directive (94/9/EC) Equipment Intended for use in Potentially Explosive Atmospheres EN 60079-0: 2009 & EN 60079-11: 2007 IEC 60079-0: 2004 & IEC 60079-11: 1999	
Carries the marking	 II 1 G Ex ia IIC T3 (-40°C ≤ Ta ≤ +125°C) or (-25°C ≤ Ta ≤ +125°C) Ex ia IIC T3 (-40°C ≤ Ta ≤ +125°C)	
Reference document	EC-Type Examination Certificate Baseefa06ATEX0271X IECEX BAS06.0063X Issued January 12, 2007	
ATEX Notified Body	Baseefa Ltd. (Notified Body No. 1180) Rockhead Business Park, Staden Lane, Buxton, Derbyshire SK17 9RZ United Kingdom Baseefa Customer Reference No. 1021	
Persons responsible	John J. Fortino (VP of Engineering)	
 John J. Fortino		
Engineered to Order with Off-the-Shelf Speed		



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4/4 Registered Quality System to ISO 9001

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