

## 2210 Side Mounted Level Switch

**2210** is a chambered horizontally oriented, float-operated level switch suitable for plant and OEM applications where open or closed contacts are required to signal the presence or absence of liquid at a discrete level. The float extension arm moves a magnet which actuates (de-actuates) an electromechanical switching element.



The 2210 may be used on a wider variety of applications and process conditions than any other single model of chambered level switch currently offered by SOR®. The flexibility in this design is critical to customers all over the world in a wide variety of industries.

The 2210 Horizontal Mechanical Level Switch is suitable for most point level applications.

- drip legs
- boilers
- de-aerators
- high pressure feed-water heaters
- storage vessels
- low pressure feed-water heaters

### Features and Benefits

- Five-year warranty
- Low maintenance costs
- Compact chamber design
- NEMA 4X “Quick-Release” cover
- Withstands temperatures up to 750°F (399°C)
- Withstands pressures up to 1799 psig (124 bar)
- Socket weld and NPT process connections available
- ASME Section IX and AWS D2.1 qualified welding system
- Designed to ANSI/ASME B31.1 and B31.3 guidelines
- Stainless steel switching mechanisms
- All stainless steel wetted parts
- Quick worldwide delivery
- Only ASTM grade materials with certified mill test reports used
- CSA certified for Ordinary Locations in U.S. and Canada
- **Safety Certified to IEC 61508 (SIL)**  
SOR products are certified to IEC 61508 for non-redundant use in SIL1 and SIL2 Safety Instrumented Systems for most models. For more details or values applicable to a specific product, see the Safety Integrity Level Quick Guide (Form 1528).

# 2210 Side Mounted Level Switch

## Specifications

### Product Specifications

#### Mounting

Orientation Horizontal mount only

Float Material Stainless Steel

Chamber Material Stainless Steel or Carbon Steel

Maximum Process Pressure at 100°F (38°C)  
With S.S. Chamber 1799 psi (124 bar)

Process Temperature Range\* (-40 to 750°F)  
(-40 to 399°C)

#### Electrical

Switch type SPDT or DPDT snap switch

Contact rating (See page 3)

Contact material Silver Plated

Housing material Aluminum

Conduit connection size 1" NPT

Minimum Specific Gravity 0.60 SG

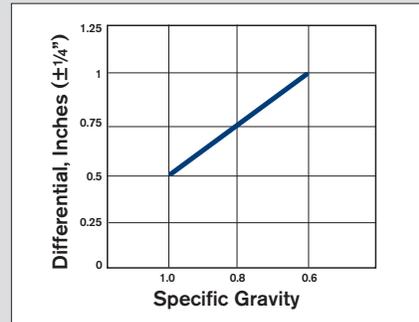
Agency Listing CSA Certified (US & Canada)  
Ordinary Locations

Design Code ANSI B31.1 or ANSI B31.3  
Certificate available

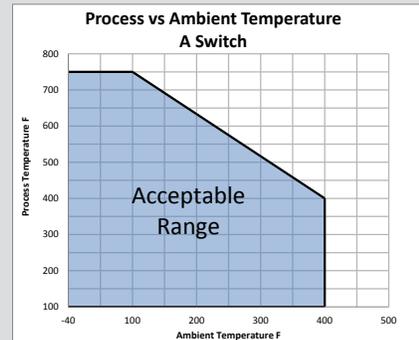
#### Weight

With Chamber 22 lbs. (10 kg)

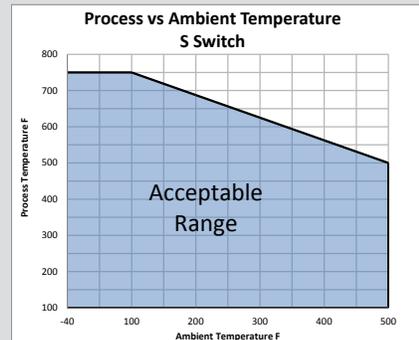
#### Differential (Dead Band)



#### A-switch Process Temperature vs. Ambient Temperature



#### S-switch Process Temperature vs. Ambient Temperature



\* Dependent on switch selection

Note: For other variations please consult factory.

### Maximum Operating Pressure Ratings\*\*

Chamber Designator	Chamber Description	Pressure at Listed Temperature in psig (bar)								
		100°F (38°C)	200°F (93°C)	300°F (149°C)	400°F (204°C)	500°F (260°C)	600°F (316°C)	650°F (343°C)	700°F (371°C)	750°F (399°C)
A	S40 Carbon Steel (includes float)	1435 (99)	1435 (99)	1435 (99)	1435 (99)	1435 (99)	1435 (99)	1435 (99)	1378 (95)	1244 (86)
C	S40 Stainless Steel (includes float)	1799 (124)	1550 (107)	1397 (96)	1282 (88)	1196 (82)	1129 (78)	1110 (77)	1081 (75)	1072 (74)

\*\* Maximum operating pressure is limited by the float or chamber, depending on the temperature.

For exact material description, see page 3.

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## How to Order

### How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application.

- You must select a designator for each component
- Reference tables, charts and additional information are provided throughout the catalog to help you make your selections.

<b>1 Model</b>		<b>2 Chamber Material</b>		<b>3 Orientation &amp; Connection Size/Type</b>		<b>4 Float Material</b>		<b>5 Switch Mechanism</b>		<b>6 Switch Type</b>		<b>7 Housing</b>		<b>8 Agency Approvals</b>		<b>9 Accessories</b>	
Side Mounted Level Switch 2210		Schedule 40 106 Grade B Carbon Steel with A105 and A234-WPB fittings A Schedule 40 312-TP316/316L Stainless Steel with A182-316/316L and A403-316/316L fittings C		Horizontal Chamber with 1" NPT(F) Top/Bottom Process Connections E1A Horizontal Chamber with 1" Socket Weld Top/Bottom Process Connections E1B		316/316L Stainless Steel C		Dry Contact Snap Switch -40 to 750°F (-40 to 399°C), 0.1A-6A at 250 VAC A Hermetically Sealed/Gold Contact -40 to 750°F (-40 to 399°C), 0.5A at 28VDC S		1 SPDT 4 DPDT		N4 NEMA 4X Aluminum Housing with Quick-Release cover, 1" NPT Conduit Connection		00 No Agency Approval ZZ CSA for Ordinary Locations in U.S. and Canada		CN Conduit Reducer M20 x 1.5 CP Conduit Reducer 1/2" NPT CR Conduit Reducer 3/4" NPT MR Mill Test Report PP Fiber Tag RR Oversized Namplate for customer tagging  <b>Certificates</b> C1 Calibration C2 Hydrostatic Pressure Test C3 Inspection Report C4 Compliance/Conformance C5 Dielectric Test C6 Insulation Resistance C7 QA Test Report	
2210		-		-		C		-		-		N4		-		-	
<b>2210</b>		<b>A</b>		<b>E1A</b>		<b>C</b>		<b>A</b>		<b>1</b>		<b>N4</b>		<b>ZZ</b>		<b>PP C1</b>	

**Example Model No.**

**Notes:**

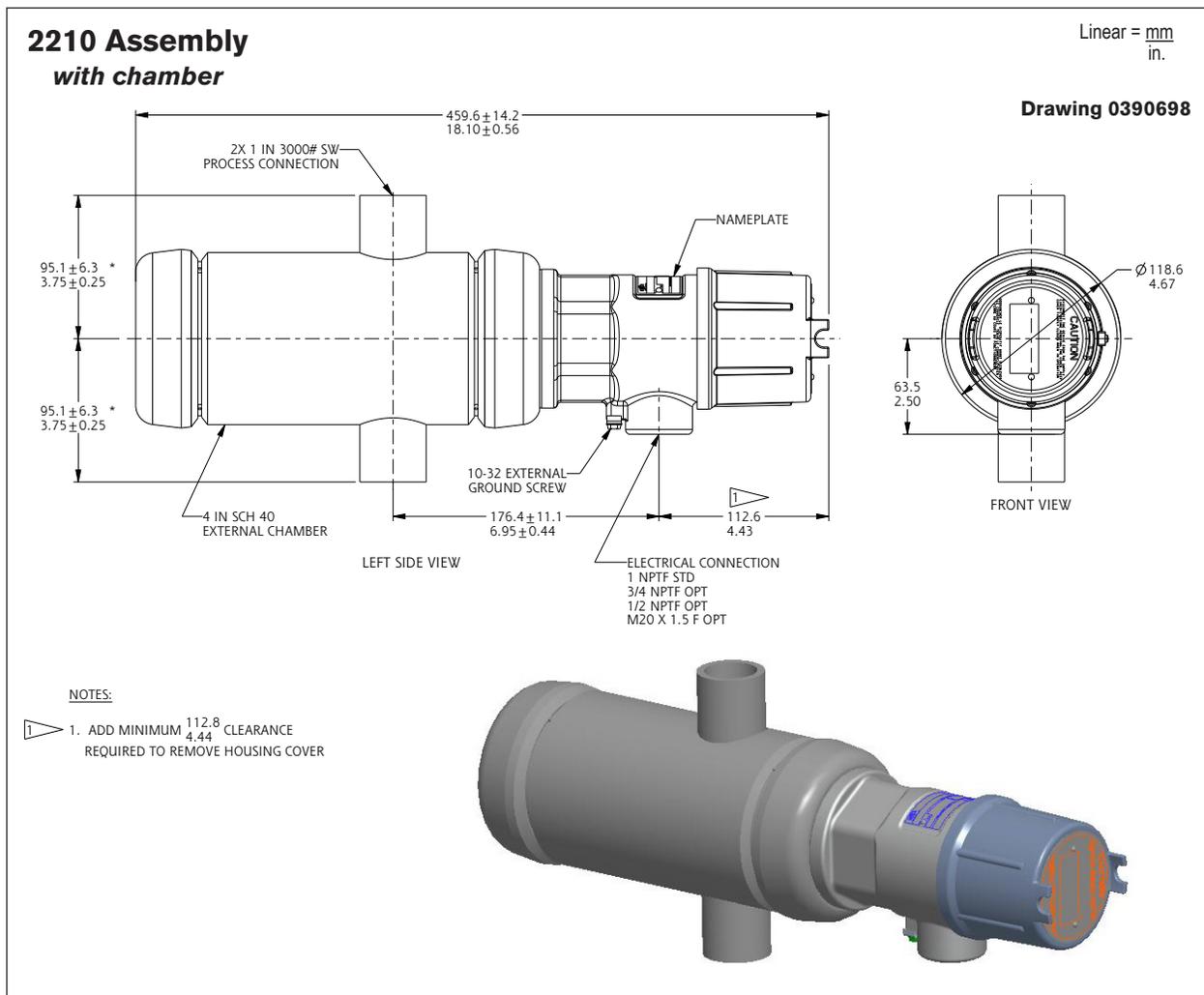
- "X" in model number indicates a special requirement.
- For other variations please consult factory.

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## Dimensions

The 2210 unit allows for a smaller chamber size making it more compact and economical than most traditional vertical chambers. Although the 2210 is more compact, it provides the rugged reliability customers have come to expect from SOR.

The design starts with a high pressure float counter-weighted with a magnet. The magnet is coupled with another magnet inside the housing which is attached to the switching mechanism. The key is that the two magnets are separated by a pressure retaining wall of non-magnetic material. The magnets interact with each other as the float goes up and down, providing a safe and reliable system you can depend on for the most critical of applications. The 2210 features a NEMA 4X, Quick-Release cover. Approximately 1 1/4 turns are needed to remove/replace the cover for service or maintenance.



*Design and specifications are subject to change without notice. For latest revision, see SORInc.com.*

