

## S291 Coolant Level Switch - Capacitance Type with Complementary Voltage Output.



The **S291** is an active device designed to give an alarm signal if liquid falls below, or rises above a preset level. It can be specified with a delay to eliminate false alarm due to turbulence.

Containing a factory programmable microprocessor, the switch provides a complementary voltage output on two pins.

Its small footprint with limited intrusion into tank means a reduced risk of damage and a wide range of customer specifiable options make it suitable for most applications.

The switch is designed to operate in both earthed metal and isolated plastic tanks. For high accuracy the S291 is ideally mounted horizontally at the point where an alarm or control signal is required. However, the switch can be mounted vertically – contact Rochester Sensors with your applications.

### SPECIFICATION

#### Liquid types:

Water based liquids such as coolant or washer fluid.

#### Electrical rating

<b>Supply voltage:</b>	5±0.25 VDC.								
<b>Supply current:</b>	5 mA + source output.								
<b>Alarm delay time:</b>	0 to 25 s rising or falling (factory set).								
<b>Connection:</b>	4 way Delphi Packard Metri-Pack 150 series connector.								
<b>Power up delay:</b>	0 to 10 s (factory set).								
<b>Power up state:</b>	'In Liquid' or 'Out of Liquid' (factory set).								
<b>Output type:</b>	Voltage (Complementary).								
<b>Output pin:</b>	<table border="1"> <thead> <tr> <th>Pin A.</th><th>Pin D.</th></tr> </thead> <tbody> <tr> <td><b>Output state in liquid*:</b></td><td>4±0.25 VDC. ↔ 0.5±0.25 VDC.</td></tr> <tr> <td><b>Output state in air*:</b></td><td>0.5±0.25 VDC. ↔ 4±0.25 VDC.</td></tr> <tr> <td><b>Output current:</b></td><td>10 mA maximum. 10 mA maximum.</td></tr> </tbody> </table>	Pin A.	Pin D.	<b>Output state in liquid*:</b>	4±0.25 VDC. ↔ 0.5±0.25 VDC.	<b>Output state in air*:</b>	0.5±0.25 VDC. ↔ 4±0.25 VDC.	<b>Output current:</b>	10 mA maximum. 10 mA maximum.
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#### Construction

<b>Body:</b>	Brass.
<b>Probe:</b>	PTFE.
<b>Terminals:</b>	Brass, Tin Plated.
<b>Seals:</b>	EPDM & FVMQ.
<b>Connector:</b>	PA66 30% Glass Filled Nylon.
<b>Thread sealant:</b>	Vibra-Seal 516 (taper thread variants only).

#### Connections:

See diagram below.

\*Outputs are factory selectable; opposite states and alternative values from 0.5-4.5 VDC are available on request.

#### Environmental Ratings

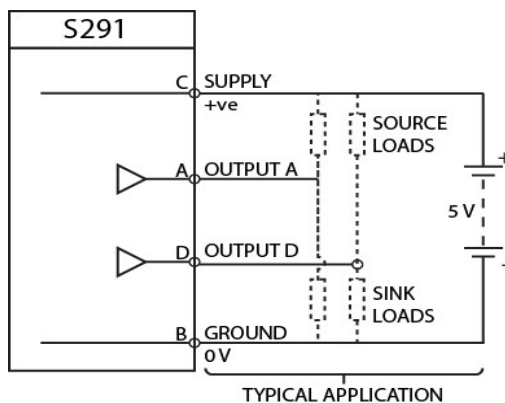
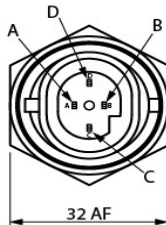
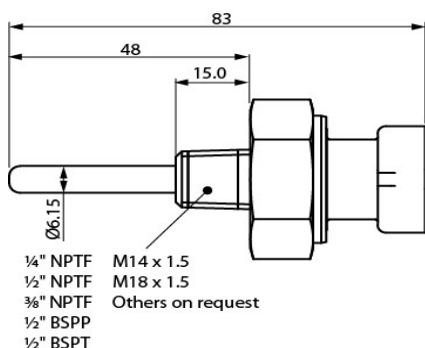
<b>Ingress:</b>	IP67 (with mating connector fitted).
<b>Max. pressure:</b>	5.0 Bar (72 psi)
<b>Temp. range:</b>	-40 °C to +125 °C
<b>Weight:</b>	70 g typical (dependent on thread size)
<b>EMC:</b>	ISO13766:2006

#### Vibration (15.3 Grms)

3 orthogonal planes for 3 hours per plane  
Testing performed in accordance with BSEN 60068-2-64:1993

#### Drop:

1 m to concrete surface.



#### Recommended Installation Tightening Torques:

1/4" NPTF	9 Nm	M14x1.5	10 Nm
3/8" NPTF	11 Nm	M18x1.5	15 Nm
1/2" NPTF	20 Nm		
1/2" BSPP	15 Nm		
1/2" BSPT	20 Nm		

#### Optional Accessories:

**C/K1:** Packard Metri-Pack 150 series mating connector kit to suit 2  
harness wire cross sectional area of 0.8 to 1.0 mm and sleeve Ø1.60 to 2.15 mm.