



**PSM INSTRUMENTATION LTD**

**BLS9200**  
**Bilge flood detection switch**  
**User Manual**

**Doc Ref: Man 045 Issue H**

**Issue date : 05/05/2017**



We confirm that the products mentioned in this manual conform to the required safety standards in accordance with LVD 2006/95/EC

**PSM WEEE Producer Registration No WEE/HC0106WW**

Burrell Road Industrial Estate, Haywards Heath, West Sussex RH16 1TW, UK  
Tel: +44 (0)1444 410040 Fax: +44 (0)1444 410121  
[Http://www.psmmarine.com](http://www.psmmarine.com) E-mail: [sales@psmmarine.com](mailto:sales@psmmarine.com)

## Introduction

The Bilge Switch Model BLS 9200 is designed to be installed in ships bilges and tanks, industrial sumps and tanks where it would be bolted in situ at the required alarm level. This switch is corrosion resistant stainless steel fully submersible construction with an hermetically sealed SPDT reed switch potted in epoxy. This switch is also designed with a manual lift test mechanism to be used to check switch operation.

## Installation

The BLS 9200 is manufactured with the requested cable length permanently bonded to the body. No attempt should be made to disconnect it from the body. If required it can be cut to length. The BLS9200 should be mounted at the required detection level with reference to the actuation point indicated on the drawing below

The conductors on the three core cable are labelled as indicated in the key below.

When the switch is not in alarm there is contact between Common and Normally Closed.

When the switch enters alarm mode there is contact between Common and Normally Open.

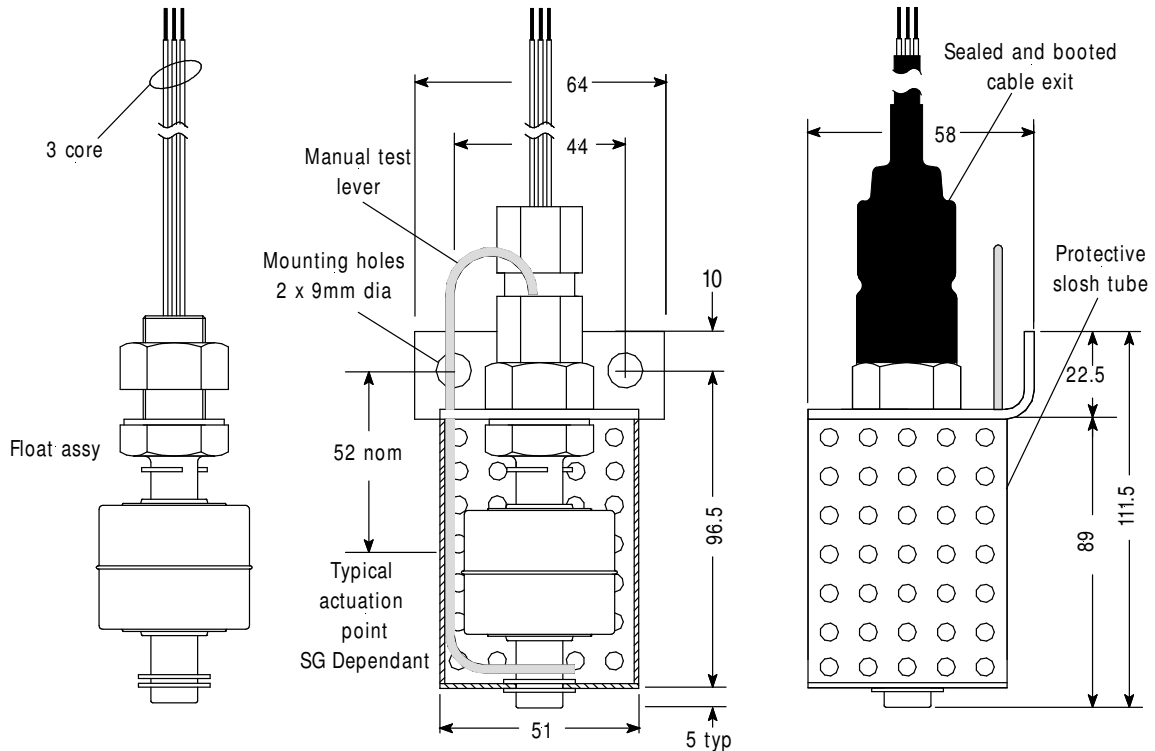
Refer to the important notes below regarding protection of the switch for various types of switching loads.

## Options

PSM provide two optional termination enclosure for the BLS 9200, BSE1 for a single switch, and BSE2 for two switches. Refer to the drawings later in this manual.

Construction: Polycarbonate

Protection: IP65



<b>Materials</b>	Float 316SS / all other parts 304SS
<b>Switch Rating:</b>	100VA SPDT
<b>Process Temp.</b>	-10 to +90C
<b>Max load rating:</b>	100W ac/dc resistive
<b>Max Current</b>	3A
<b>Min load rating:</b>	3W
<b>Max load volts:</b>	500V dc / 250V ac
<b>Float S.G.</b>	0.62

<b>WIRING</b>
1 = Common
2 = Normally Open
3 = Normally Closed

**NOTE:** The actuation point can vary slightly depending on the temperature and specific gravity of the individual liquid being detected

### Important notes:

Attempting to put excessive power through the bilge switch will irreparably damage the reed switch internals.

1. If the power rating of the switch is greatly exceeded, the contacts will become permanently welded together.
2. If the switch is allowed to arc (spark) as it opens or closes the plated contacts will fail over time.  
[ the greater the arc - the more rapidly failure will occur]

Do not be misled by the resistive ratings of the switches. Most applications involve inductive loads and many low wattage loads are often high inductance devices.

Switches ratings are quoted for a resistive load. Suppression is very important to protect the switch.

### Lamp loads

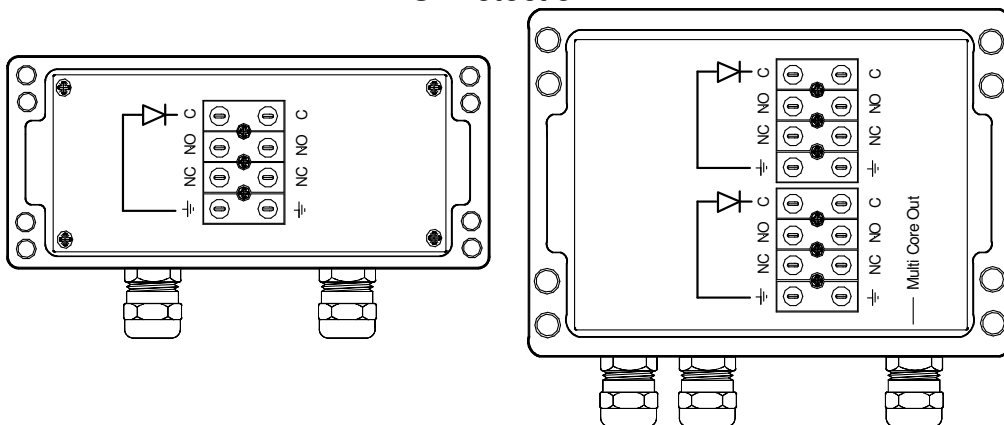
Incandescent lamp loads can be very destructive to reed switch applications.

These type of loads have a 6-10 times the normal operating current when first energised [inrush].

### ARC suppression

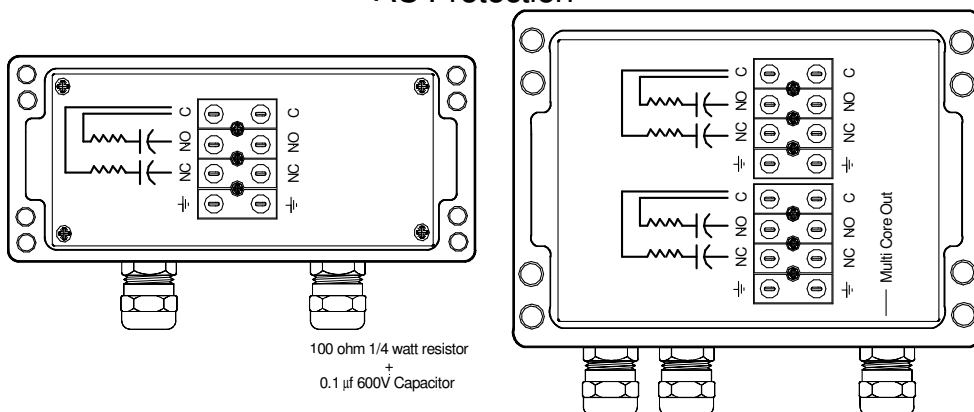
**For a DC circuit** – a one amp diode placed in parallel with the load will suppress the arc. Select a diode with a voltage rating of at least three times [3x] or more of that of the circuit rating. Connect diode cathode to positive.

### DC Protection



**For an AC circuit** - a capacitor and resistor fitted in parallel with the switch. Use a 0.1 $\mu$ f 400-600V capacitor and a 50 to 100 ohm 1/4 watt resistor in series with the capacitor.

### AC Protection

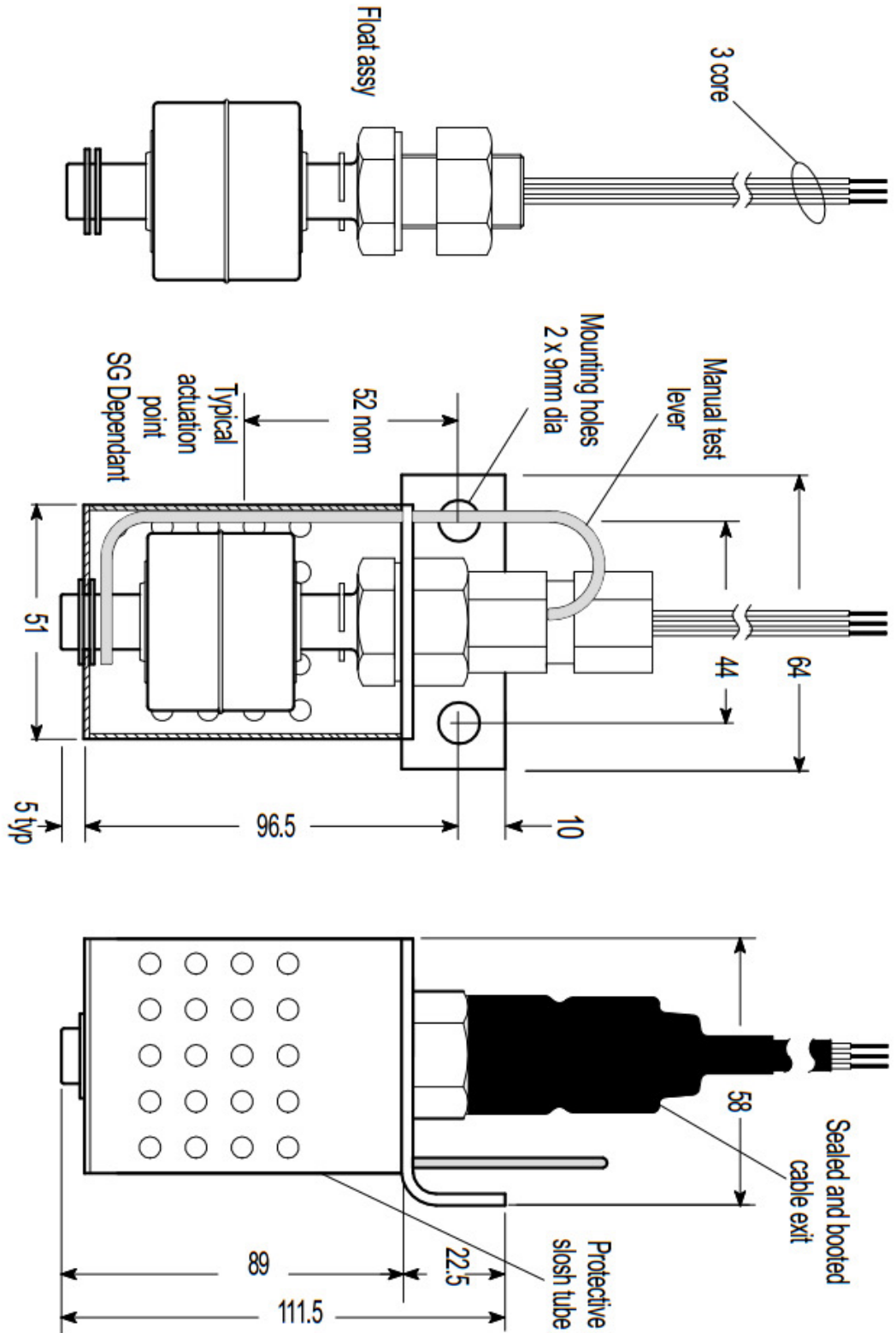


100 ohm 1/4 watt resistor  
+  
0.1  $\mu$ f 600V Capacitor

Suitable arc suppression components are available on request from PSM.

# SALES DRAWING ONLY NOT TO BE USED FOR MANUFACTURE

All Dimensions are nominal



SCALE  
NTS

UNLESS OTHERWISE STATED DIMENSIONS ARE IN  
MILLIMETRES / INCHES

TITLE  
BLS Bilge Switch  
Series 9200 General Outline

**psm** Instrumentation Ltd

Haywards Heath, West Sussex RH16 1TW  
ph: 44 (0) 1444 410040 f: 44 (0) 1444 410121  
<http://www.psm-sensors.co.uk>

DRAWING NO  
S-001311-9200-GO

**A4**

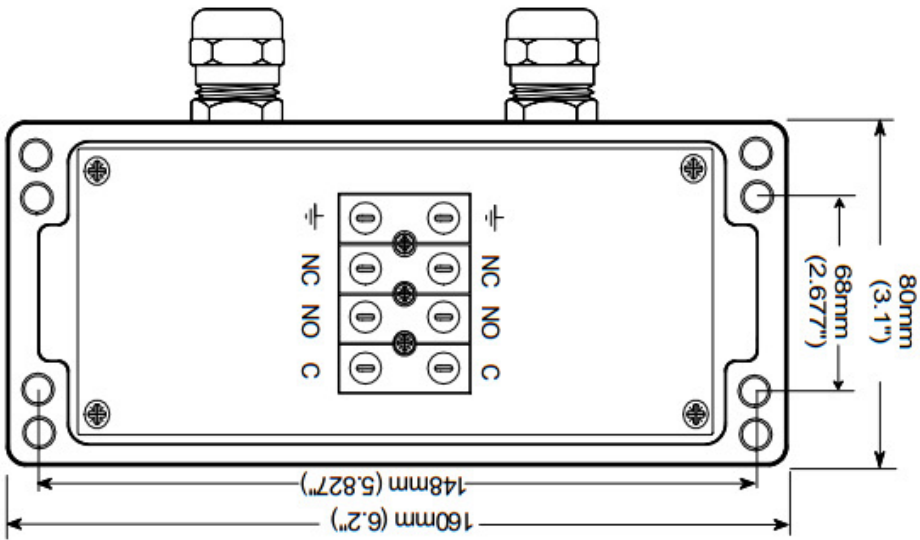
SHT 1  
OF 1

ISSUE	A	B	C	D	E
DATE	30-05-08	23-10-08	09-09-09	24-05-10	15-10-14
DCR					
DRAWN	JEC	JEC	JEC	JEC	JEC
CHECKED					

**SALES DRAWING ONLY  
NOT TO BE USED FOR MANUFACTURE**

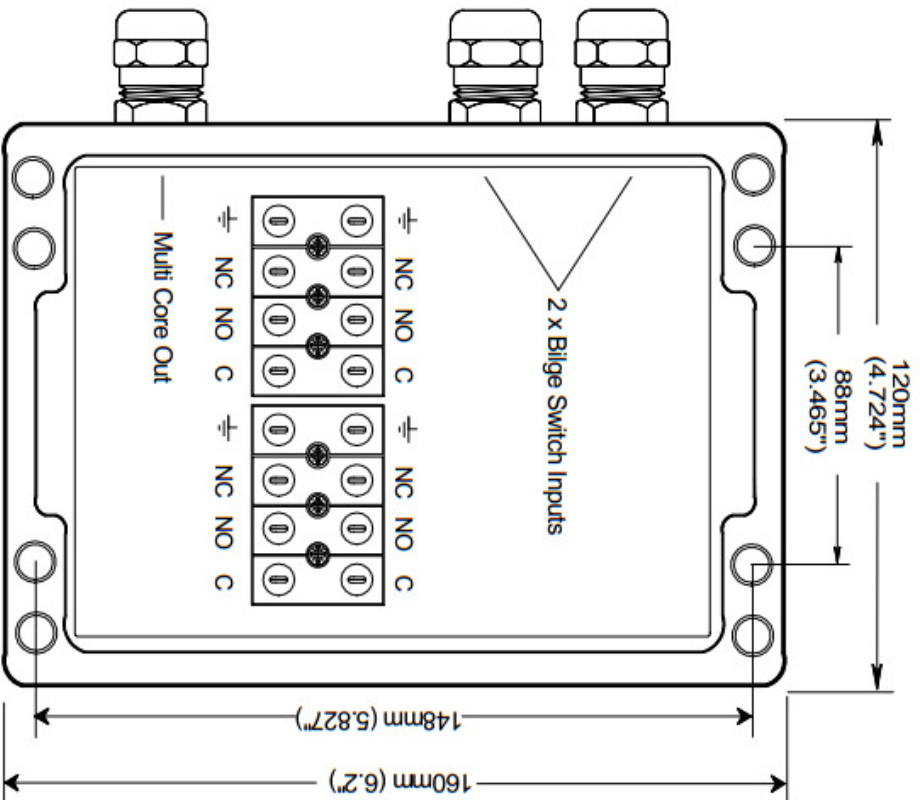
**BSE1**

**IP66 Bilge Switch Termination Enclosure**  
 Suitable For Use With 1 x Switch  
 Fitted With 2 x M20 Cable Glands & Terminations



**BSE2**

**IP66 Bilge Switch Termination Enclosure**  
 Suitable For Use With 2 x Switches  
 Fitted With 3 x M20 Cable Glands & Terminations



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TITLE  
Bilge Switch  
Terminal Enclosure

DRAWING NO  
S-001301-BLG-GO

**A4**

SHT 1  
OF 1

ISSUE	A	B	C
DATE	16-11-05	08-11-07	06-01-11
DCR			
DRAWN	JEK	SAL	SAL
CHECKED			