



SPECIFICATION // DATA SHEET

ENGINEERED HORIZONTAL FLOAT SWITCHES HFS1 & HFS2 SERIES

Introduction

Quality & Experience

AMS have retained the personnel who have produced the flameproof float switches for over 40 years to ensure that the world renowned quality that is maintained.

With a robust build quality and mechanical operation, our ranges of float switches have a proved track record within many industries such as; Petro-Chem, Chemical, Power Stations, Utilities.

Flexible Specifications

Components are stocked in various different states of assembly to reduce manufacturing lead times; and each float switch is manufactured to individual customer specifications to suit their process applications.

If the standard specification shown does not meet your application requirements please call our AMS Sales Team who will be happy to discuss your requirements and provide a solution, as AMS can produce custom float switches to suit your needs.

Application Areas

For use with tank level applications, the Horizontal float switch series can be used for "Liquid Level Alarms", "Pump Control" and "Valves Control" when filling, emptying or interface control between two liquids.

The Horizontal Float Switch series are divided into two classes, one class for the Flameproof ATEX Certified float switch and the other class a weatherproof IP65 float switch.

FSH11 Weatherproof Horizontal Float Switch

The FSH11 Horizontal series float switch is IP65 rated and designed to be installed in any areas either internally or externally to a building, apart from areas that are designated as an ATEX Hazardous area.

FSH21 / FSH22 Flameproof Horizontal Float Switches

An approval has been issued for the FSH21 / FSH22 Horizontal float switches for use as explosion-protected equipment within the scope of application defined by EU Guideline 94/9/EC ATEX in hazardous areas.

They comply with the specifications concerning equipment and protective systems intended for use in potentially explosive atmospheres.

ATEX Certified to II 2 G / EEx'd' IIC T6-T3

Supplied into the industry for over 40 years by Alan Cobham and world renowned for quality, the Horizontal float switch series are now owned and manufactured in the UK by AM Sensors Ltd.

HFS2 Flameproof Version Specification

ATEX Rating	EEx 'd' II 2 /1 G T3 to T6 (Std)
Temperature	-40 to +100 °C
Material	Body / Flange: 316 Stainless Steel // Wetted Parts: 316 Stainless Steel
Pressure	Upto 40 Bar (580 Psi)
IP Rating	IP65
S.G Range	≥0.6 (600kg/m ³)
Cable Entry	Single M20 x 1.5 (Other options available)

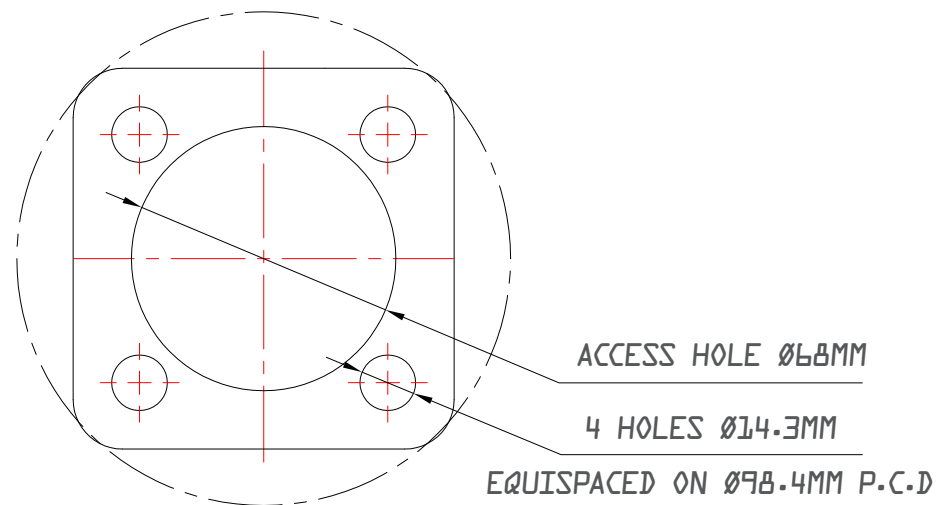
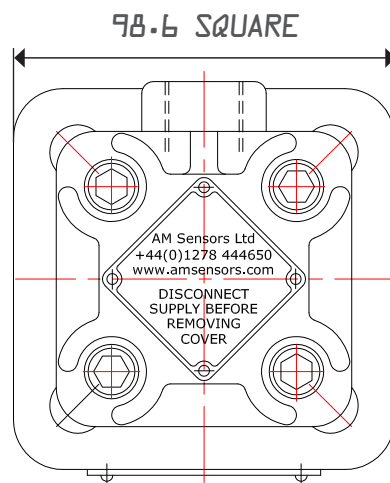
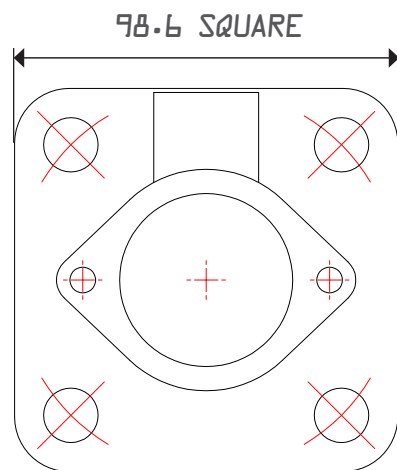
HFS1 Flameproof Version Specification

Temperature	-40 to +100 °C
Material	Body / Flange: 316 Stainless Steel // Wetted Parts: 316 Stainless Steel
Pressure	Upto 40 Bar (580 Psi)
IP Rating	IP65
Cable Entry	Single M20 x 1.5 (Other options available)

Switch Specifications

	Type A	Type B
Action	SPST	SPCO
Contact material	Rhodium	Rhodium
Switching Capacity	250W	60W
Switching Voltage	250V AC/DC	400V AC/DC
Switch Current	5 A	1 A
Contact Resistance	100 m'Ω	100 m'Ω□
Bounce Time	1.0 ms	0.5 ms
Release Time	0.2 ms	0.15 ms
Operating Temperature	-40 to 150°C	-40 to 125°C

Standard Flange Dimensions



NOTE: Further mounting options are available including screwed, adaptor flanges and standard flanges with different drilling dimensions i.e. Ø96 mm P.C.D.

Horizontal Float Switch

Connections to conform to: BS EN 60079-14: 2008

FSH21 Shown in the illustration, FSH11 and FSH22 has the same dimensions.

Dimension 'A' = 240 mm for FSH11 & FSH21

Dimension 'A' = 284 mm for FSH22

Terminal Details

For wiring details please see the installation, operating and maintenance manual supplied with the float switch.

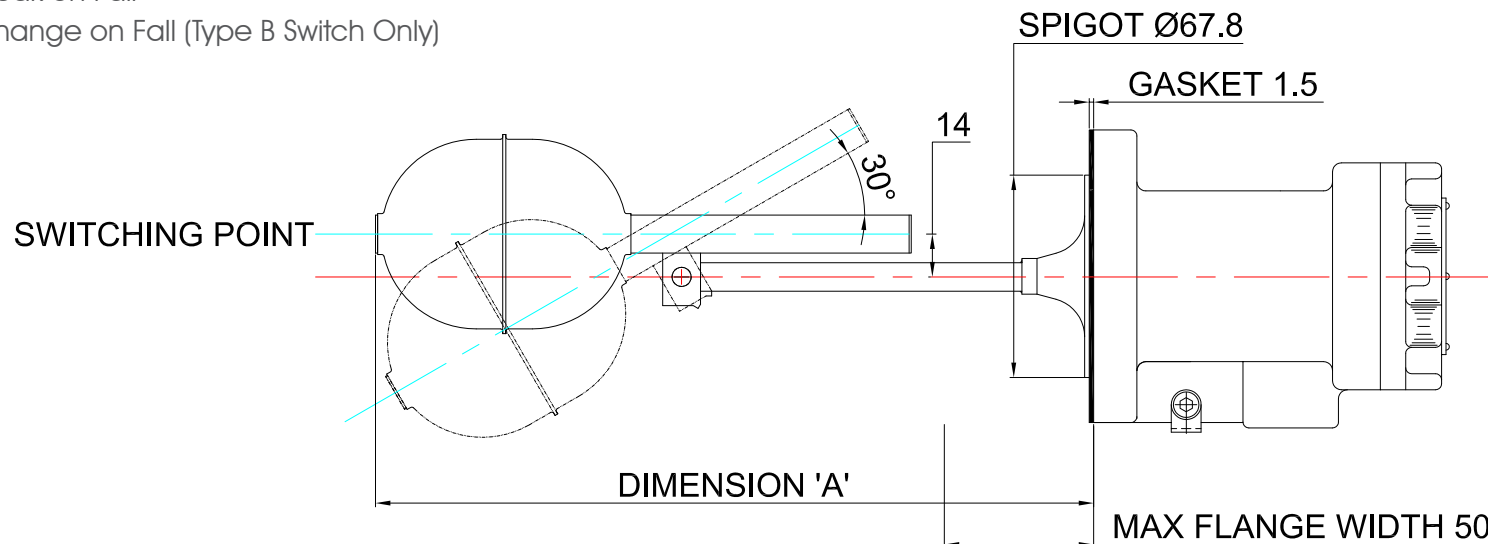
Vertical Float Switch available Switching Actions

- MOR – Make on Rise
- BOR – Break on Rise
- COR – Change on Rise (Type B Switch Only)
- MOF – Make on Fall
- BOF – Break on Fall
- COF – Change on Fall (Type B Switch Only)

Ordering Information

When ordering float switches, technical information is required to ensure the customer is supplied with the correct product for the process conditions.

Please complete our float switch questionnaire and email to sales@amsensors.com or contact our sales team on +44 (0)1278 444650



Horizontal Float Switch Questionnaire

Part Number		Description	
DS			Engineered Displacer Switch
1	Weatherproof		
2	Flameproof		
1	Non Checkable		
2	Checkable		
1	Top Mounted		
1	One Switch Point		
2	Two Switch Points		
A	250W SPST, Switch Rating		
C	60W SPDT, Switch Rating		
NOTE: For different switch ratings on multi level switches enter the digit in switch position order i.e. AC or AAB			
1	Stainless Steel Float - Standard		
2	Special		
1	Switch Point upto 5M		
2	Switch Point upto 10M		
TOTAL COST			

OPTIONS:

FS1415/17	3" ASA 150 St/St Adaptor Flange
FS1415/18	4" ASA 150 St/St Adaptor Flange
FS1415/19	6" ASA 150 St/St Adaptor Flange
FS1415/20	8" ASA 150 St/St Adaptor Flange
COFC	Certificate of Conformity
MATC	Material Certificates (Wetted Parts)
WELD	Weld Procedures
CALC	Calibration Certificate
PRESC	Pressure Test Certificate

SPARES:

X3325	Gasket
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CALL FOR PRICING CUSTOMER SPECIFIC APPLICATIONS REQUIREMENTS

Chambers

Chamber mounting

In situations where mounting of the float switch in an external chamber is required, AMS have in house welders coded to ASME IX and European standards to provide a complete assembly with pressure testing, painting and NDT testing to each customer's specific requirements.

» Material Origins:

The origin of the materials used in the construction can be sourced as European, Worldwide or to meet EN 10204-3.1 Material specification.

» Nace Construction:

AMS Chambers can be constructed to meet NACE MR 0175 / ISO 15156 for sour service applications.

» Chamber Design:

AMS Chambers are designed to meet the ASME B31.3 - Process Piping Codes.

» Pressure Equipment Directive:

AMS Chambers are designed to meet the European Pressure Directive (PED) 97/23/EC Guidelines.

» ISO Approved:

AMS Chambers are manufactured by ISO approved company for QA, Environment and OHSAS.

» Process Connections:

AMS Supply chambers with a wide range of process connections to meet ASME/ANSI B16.5 and EN1092-1.

» Coded Welders:

Welders are certified to ASME Boiler and Pressure Vessel Code Section IX and ISO9606-1.

» Optional Weld Inspection:

X-Ray for full penetration butt welds.

Magnetic particle for Carbon Steel Chambers.

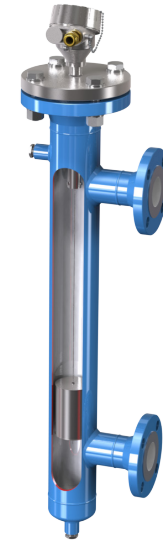
Dye Penetrant Inspection of branch welds (all chambers).

» Hydrostatic Testing (Optional):

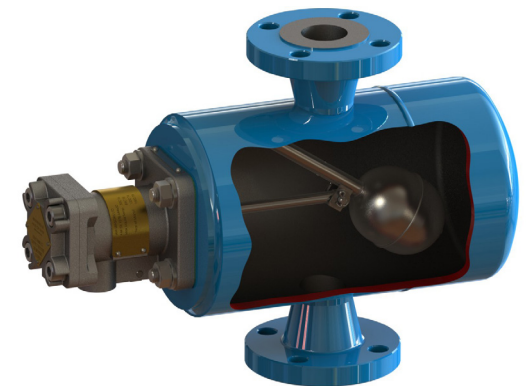
The Chambers can be hydrostatically tested to meet the ASME B31.3 Process Piping Code (1.5 X Design Pressure @ ambient temperatures).

» Painting (Optional):

The chambers can be painted to meet individual customer specifications, including offshore environments.



CHAMBER WITH DISPLACER SS



CHAMBER CUT THRU PAINTED
CARBON STEEL

Documentation and Testing

AMS can produce a full documentation package to support the chamber products. A data book containing the documents required by each customer is produced and shipped with each chamber. Documents available include (not restricted to!):

- | | |
|---|-------------------------------------|
| » Welder Qualification Certs | » QA Plan |
| » Weld Procedure Qualifications | » Welder and NDT Inspection Records |
| » Weld Procedure Specifications | » X-ray, Dye Pen and PMI Tests |
| » GA Drawings | » Instrument Tag Lists |
| » Pressure Test Certificates | » Instrument Data Sheets |
| » Certificate of Conformity to NACE and PED | » Material Certificates |

In addition to the above AMS can also provide:

» **Accessories:**

AMS offer a range of accessories for use in conjunction with the chambers such as valves, gaskets, nuts / bolts and fittings.

» **Instrumentation:**

AMS offer a wide range of process instrumentation, including various level measurement technologies, which when used in conjunction with our chambers provide complete level measurement solutions for any application.



AM Sensors Ltd,
Chedzoy Lane, Chedzoy,
Bridgwater, Somerset
TA7 8QS

† +44 (0)1278 444 650
f +44 (0)1278 434 449
e info@amsensors.com
www.amsensors.com

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