BULKSAFE™

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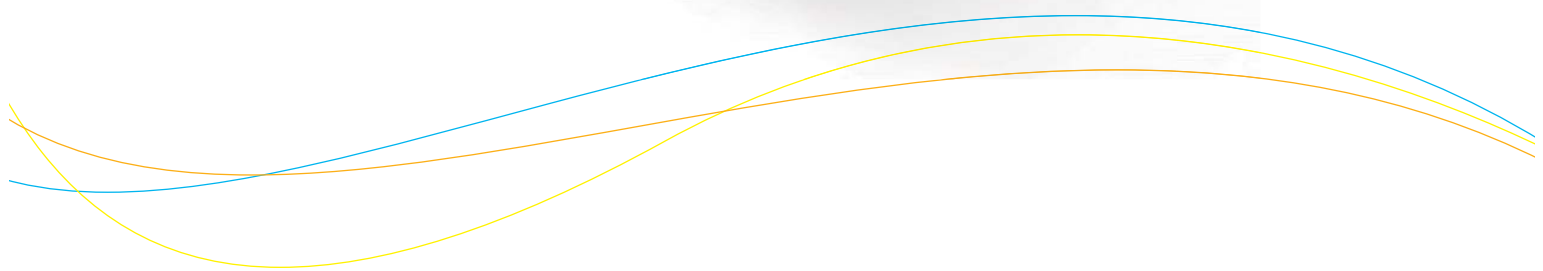
Water Ingress Detection for Bulk Carriers

BULKSAFE™ is a fully Type Approved water ingress detection system for bulk carriers in accordance with SOLAS X11 Regulation 12, IACS UR S24, IMO performance standards and IACS UI SC180. The system comprises of a central BULKSAFE™ control and alarm panel interfacing with intrinsically safe MMS900® water level detectors.

The unique design of the MMS900® detectors allows them to be installed so that they are totally isolated from the cargo and protected from mechanical damage during cargo operations.

- Type approved
- Simple installation
- Low purchase cost
- Over 700 systems installed on bulk carriers
- Simple, maintenance free operation
- No local re-calibration required
- Lifetime sensor corrosion warranty
- Line monitoring - no false alarms
- Simple user friendly operation
- All sensor cabling included

BULKSAFE™

Specifications

MMS900 Level Switch Assembly

Material	• Delrin
Dimensions	• Æ 75mm x 90mm
Weight	• ~ 500g
Fixing detail	• Screws into standard 2$^{1}/_{2}$" BSPP pipe union
Environmental	• -20ºC to +80ºC, 0 to 100%RH
Dust Protection	• In-board inert hydrophobic filter
Switching Output	• Hermetically sealed reed type differential 3-5mm
Switch Setting	• Normally closed, opening on alarm
Switch Rating	• 0.5A/240V ac/50VA max
I.S. Operation	• With optional Zener safety barriers

Bonded Cable	• 30m 2-core 0.75mm^2 cable (longer on request)
IP Rating	• IP68 in accordance with IEC 60529
Warranty	• Lifetime warranty against failure due to corrosion
Certification	• Simple apparatus
In-situ Testing	• Manual or automatic
Filter Cleaning	• Manual or automatic
Test/Cleaning Port	• 2No. 6mm o.d. Push fit nylon fittings
Cable Monitoring	• Fault alarm generated for short or open circuit
Accuracy	• +/- 10mm

Bulksafe™ Control Panel

Input Capacity	• 24No. MMS900 level switches in 2 rows of 12 • 12No. Pre-alarm (0.5mm) and 12No. Main alarm (2.0m)
Input Definition	• User definable (12 characters) by printable label template, 2 labels supplied and copy on CD-ROM
Safety Barriers	• Up to 24No. Included within enclosure
Alarm Indicators	• 24No. Green LED - input channel active indicator • 24No. Red LED - channel fault alarm indicator • Green mains 'power' LED • Red mains 'fail' LED • Amber 'sensor test' LED • LEDs flashing on new alarm • Steady on accept
Alarm Override	• By 'override' button indiacted by flashing green channel active LED
Audible Alarm	• 2-tone 85db(a) @ 30cm mutable sounder for pre-alarm (0.5m level)
Main Alarm	• (2.0m) fault alarm and mains fail alarm
Alarm Relays	• Pre-alarm (0.5m level), main alarm (2.0m) • Common alarm (latched), mains fail (normally energized) • All relays SPCO rated 5a @ 240V
Time Delay for Alarms Detector	• 5s validity to switch outputs
Function Test	• Manually or automatically by 'sensor test' push button and valve Control relay - 30s duration indicated by Amber 'sensor test' LED

System Alarm Test	• By 'panel test' push button to test all LEDs, audible alarms and relay outputs
Cable Monitoring	• Fault alarm generated for short open circuit
Environmental Data	• -20ºC to +55ºC, 0 - 99%RH
Dimensions	• 340mm (W) x 380mm (H) x 175mm (D)
Material	• Powder coated steel to RAL5022
Fixing Detail	• No. M6 fasteners, one at each corner
Weight	• 8 kg
Ingress Protection	• IP55
Mains Power Supply	• Selectable 110v/230v ac 50/60hz, 1a fuse
Emergency Operation	• From ship's 24v dc emergency supply with auto-changeover, 2a fuse
Power Consumption	• 5w @ 24v dc
Options	• A100 alarm repeater panel • Full working mimic panel
System Manuals	• CD-ROM
Cable Entry	• 6No. M20 gland entries at base of cabinet
Options	• Remote alarm re-set • Individual alarms relays per point • Slave mimic panel