

BULKSAFE™

Water Ingress Detection for Bulk Carriers and Single Hold General Cargo Vessels

BULKSAFE™ is a fully Type Approved water ingress detection system for single hold cargo vessels and bulk carriers in accordance with SOLAS 1974 Chapter II-1 Part B Regulation 23-3 and SOLAS XII 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 re-calibration required
- Lifetime sensor corrosion warranty
- Line monitoring - no false alarms
- Simple user friendly operation
- All sensor cabling included



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Specifications

MMS900 Level Switch Assembly

Material	• Delrin
Dimensions	• \pm 75mm x 90mm
Weight	• ~ 500g
Fixing detail	• Screws into standard 2 1/2" BSPP pipe union
Environmental	• -20°C to +80°C, 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 (0.5m) 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 alarm indicator • 24No. Amber 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 indicated 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	• -20°C to +55°C, 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