

# BULKSAFE™

## SINGLE HOLD GENERAL CARGO VESSEL WATER LEVEL DETECTION SYSTEM

**BULKSAFE™** is a fully Type Approved water ingress detection system for single hold cargo vessels in accordance with SOLAS 1974 Chapter II-1 Part B Regulation 23-3. 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.

- **MULTIPLE AWARD WINNING DESIGN**
- **SIMPLICITY OF INSTALLATION**
- **LOW PURCHASE COST**
- **OVER 700 SYSTEMS INSTALLED ON BULK CARRIERS**
- **SIMPLE MAINTENANCE FREE OPERATION**
- **NO RECALIBRATION REQUIRED**
- **LIFETIME SENSOR CORROSION WARRANTY**
- **LINE MONITORING – NO FALSE ALARMS**
- **SIMPLE USER FRIENDLY OPERATION**
- **ALL SENSOR CABLING INCLUDED**



# DATA SHEET



# SPECIFICATIONS

## **MMS900 LEVEL SWITCH ASSEMBLY**

MATERIAL	Delrin
DIMENSIONS	Æ 75mm, x 90mm
WEIGHT	~500g
FIXING DETAIL	Screws into standard 2 ½" 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 3-5 mm
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 <sup>2</sup> 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 (0.3m) & 12No. Main Alarm (15% of mean depth of hold)
INPUT IDENTIFICATION	User definable (12 characters) by printable label template, 2 labels supplied & 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 LED's 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 (0.3m level), main alarm (15% of mean depth of hold), fault alarm & mains fail alarm
ALARM RELAYS	Pre-Alarm (0.3m level), Main Alarm (15% of mean depth of hold) Common Alarm (latched), Mains Fail (normally energized). All relays SPCO rated 5A @ 240V
TIME DELAY FOR ALARMS	5s validity to switch outputs
DETECTOR	
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 LED's, audible alarms and relay outputs
CABLE MONITORING	Fault alarm generated for short or 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 alarm relays per point, slave mimic panel

September 2000 All specifications are subject to change without prior notice

