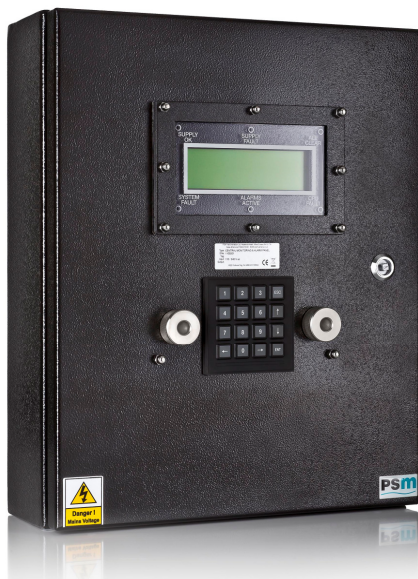




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BulkSafe: Water Ingress Detection System for Bulk Carriers, Ship's Holds and Void Spaces



KEY FEATURES

- Type approved in accordance with **SOLAS XII Regulation 12** for bulk carrier cargo holds
- Type approved in accordance with **SOLAS Chapter II-1 Part B Regulation 23-3** for single hold cargo ships and void spaces
- Simple to install and operate with only one sensor required per hold
- Sensors can be tested from the deck with the holds filled and no external tooling or services required
- Constant self-checking of detection sensors and 'live zero' alarm signal confirms system operational health
- Interfaces with ship data recording system to BS-EN61162 standard

Part of the **ComplianceSystems** product group

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DAT 25H 08/04/2016



PSM is a Scanjet Group Company

BulkSafe hold and void space water ingress detection and alarm monitoring systems for bulk carriers and single hold cargo ships

PSM BulkSafe is an essential cargo hold water ingress detecting system designed specifically for cargo hold flood detection. BulkSafe draws upon PSM's comprehensive expertise and experience in supplying monitoring and alarm systems for shipboard liquid levels to provide a robust, reliable, simple to install and operate solution for this critical water ingress detection in all cargo applications.

BulkSafe – Water Ingress Detection System (WIDS): Ship's hold water ingress detection system (WIDS) for bulk carriers. It is fully type approved in accordance with **SOLAS XII Regulation 12**, IACS UR S24, IMO DE 46/18/1 and IMO DE 46/18/2 performance standard for water level detectors & IACS UI SC180.

BulkSafe – Water Level Detection System (WLDS): Suitable for water ingress detection in single hold cargo ships in accordance with **SOLAS Chapter II-1 Part B Regulation 23-3**.

BulkSafe complies fully with the stringent IMO performance standards for water ingress detection systems having undergone extensive testing by many major classification societies. The system is offered with full type approval from Det Norske Veritas (DNV), Bureau Veritas (BV), American Bureau of Shipping (ABS) and the China Classification Society (CCS).

BulkSafe can provide warning of cargo liquefaction which is widely acknowledged as being a major contributory factor to movement and listing hazards.

Simple to install and use

The system is designed for simplicity of installation. The sensor may be installed in a variety of ways, either within the hold, or in the lower stool / void. PSM can provide full installation drawings for guidance.

A choice of sensors fittings are offered, BulkSafe systems require only one sensor per hold to detect both pre and main alarm conditions.

The sensor is provided with a suitable length of heavy duty cable which terminates in an amplifier module. The amplifier module is enclosed in a steel housing which is suitable for direct deck mounting and connection with deck penetrations also of PSM supply.

System cabling is simple, needing only a two core cable run from each amplifier module back to the central monitor. To simplify cabling further, PSM can supply a marshalling enclosure which takes all cabling from the deck and allows a single multi-core cable to be run to the ship's bridge.

Although the sensors are approved for use without the need for additional filtering PSM offer a simple to install and clean filter as an option to significantly reduce the need for sensor maintenance.

Simplicity of operation is a key feature. The user is guided by a full menu structure and all messages and prompts are shown on a backlit LCD display. Function buttons provide immediate 'shortcuts' to system tests, and visual annunciations provide immediate identification of 'all clear', "Alarm, active", "system fault", "power-fail" & "CPU fail" conditions.

Sensor and system operation may be checked at any time irrespective of hold status by using a simple test mechanism built into the deck termination enclosure. No additional compressed air or water services are needed to carry out this test.

Alarm Outputs

Alarm conditions can also trigger an optional internal relay card which may be used to control external remote mounted audible and visual annunciations.

If required one or more repeater displays can be added. These are also connected to the internal relays in the primary display to provide a remote indication of the system status.

Output To Ship's Voyage Data Recorder

BulkSafe is equipped with a serial RS485 output which provides alarm status messages to the on-board Voyage Data recorder. Output format is in accordance with BS-EN61162.

Compliance

In accordance with regulations, individual sensors may be disabled if a tank is to be used for ballast on a particular voyage.

The unit will automatically switch to the ships emergency 24Vdc supply in the event of a primary power source fail, and dedicated menu routines and test mechanisms provide a complete operational health check without the need to enter the hold.

General specifications

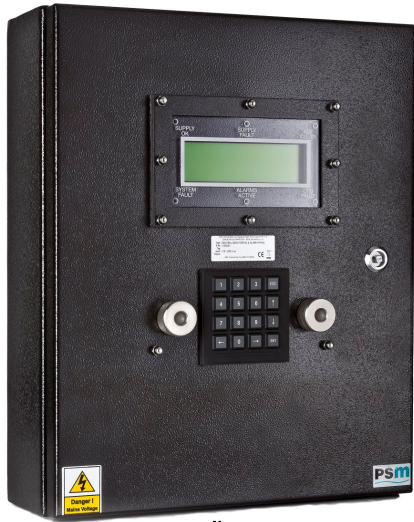
IWR 4200 Central Monitor

- IP65 epoxy coated mild steel
- Backlit LCD display
- Rubberised membrane keypad
- Supply 110/220 V ac or 24 V dc

Tankstar 260 Intrinsically Safe sensor

- IP68 body in 316 stainless steel. with protective nose / filter and pipe guides.
- Cable Hytel LSOH marine approved
- Remote amplifier module supplied in a steel enclosure with sensor test mechanism and suitable for mounting on deck or in keel duct.
- DC Supply provided by central monitor.

Typical system components



**IWT 4200
 Central Monitor, Control and
 Alarm Panel**

**Remote mounted audible and
 visual alarms**

Ship's Voyage Data Recorder

**Optional remote
 mounted repeater
 display for alarms**



**Sensor transmitter and test
 module c/w deck or
 bulhead penetration**



Above deck

Ships hold



**TankStar 260 hydrostatic
 level sensors mounted on
 side of hold or in stilling pipe**