



Precision Draught Monitor

SeaTechnik™ Precision Draught Monitor (PDM) Standalone / Integrated Precision Systems

- System configured for all vessel sizes
- Ensures safe loading
- High precision and accuracy
- Draughts read to better than 1cm
- Compensates for trim and heel
- 2 or 4 sensor systems
- Inclinator based systems

Precision Draught Monitoring

Trelleborg Marine Systems UK has a proven track record in the development of specialist systems for the marine industry worldwide. Trelleborg's SeaTechnik™ Precision Draught Monitor System (PDM) is just one of a range of systems that can be supplied as a standalone system for existing tonnage or for integration with other key safety and monitoring systems.

Several configurations are available to meet the demands of individual applications. Unlike the simple draught transducers often provided as an add-on to a ballast gauging system, the purpose built PDM is rugged and accurate under all extremes of trim and list.

Draught readings have always been recorded prior to sailing to ensure safe loading and to accurately calculate cargo on board. However, with modern ships it can be time consuming and difficult, not only to see the marks, but also to estimate draughts accurately in the dark or, in other than calm conditions.

The PDM system overcomes these difficulties and provides both operational and economic benefits to the owner with:

- Centimetre accuracy
- Stable readings despite waves and ship motion
- Clear, easy to read displays
- High reliability and ease of maintenance
- Worldwide service support
- EEx'ia' transducers for Gas Tanker operation

Systems and Options:

Variations in size of ship, hull design and the need to comply with differing national legislation, have led to a range of PDM systems being produced. These include:

- 4- Sensor type
- 2- Sensor type
- 1- or 2- Sensor with inclinometer
- Multiple sensor systems for special applications
- Inclinometer

Master Display Unit

The Master Display Unit (MDU) provides all the required options which include dedicated printers, alarms, diagnostics, semi-automatic calibration and deadweight scale reading.

If a ship is required to operate in differing sea water densities the PDM system simply calculates the correct draughts automatically. The system outputs data to any approved Loading and Damage Stability Computer, Ship's VDR or Ship's DCS system using standard serial protocol.

Inclinometer

The inclinometer is self-contained and operates from the MDU DC supply. The transducer is a capacitance based sensor with no moving parts. The unit is mounted rigidly to the ship's longitudinal structure, close to the midships point.

Precision Draught Monitor

The transducers are robust piezo-resistive type with silicon diaphragm and semiconductor strain gauge bridge, diffused directly onto the diaphragm. They feature:

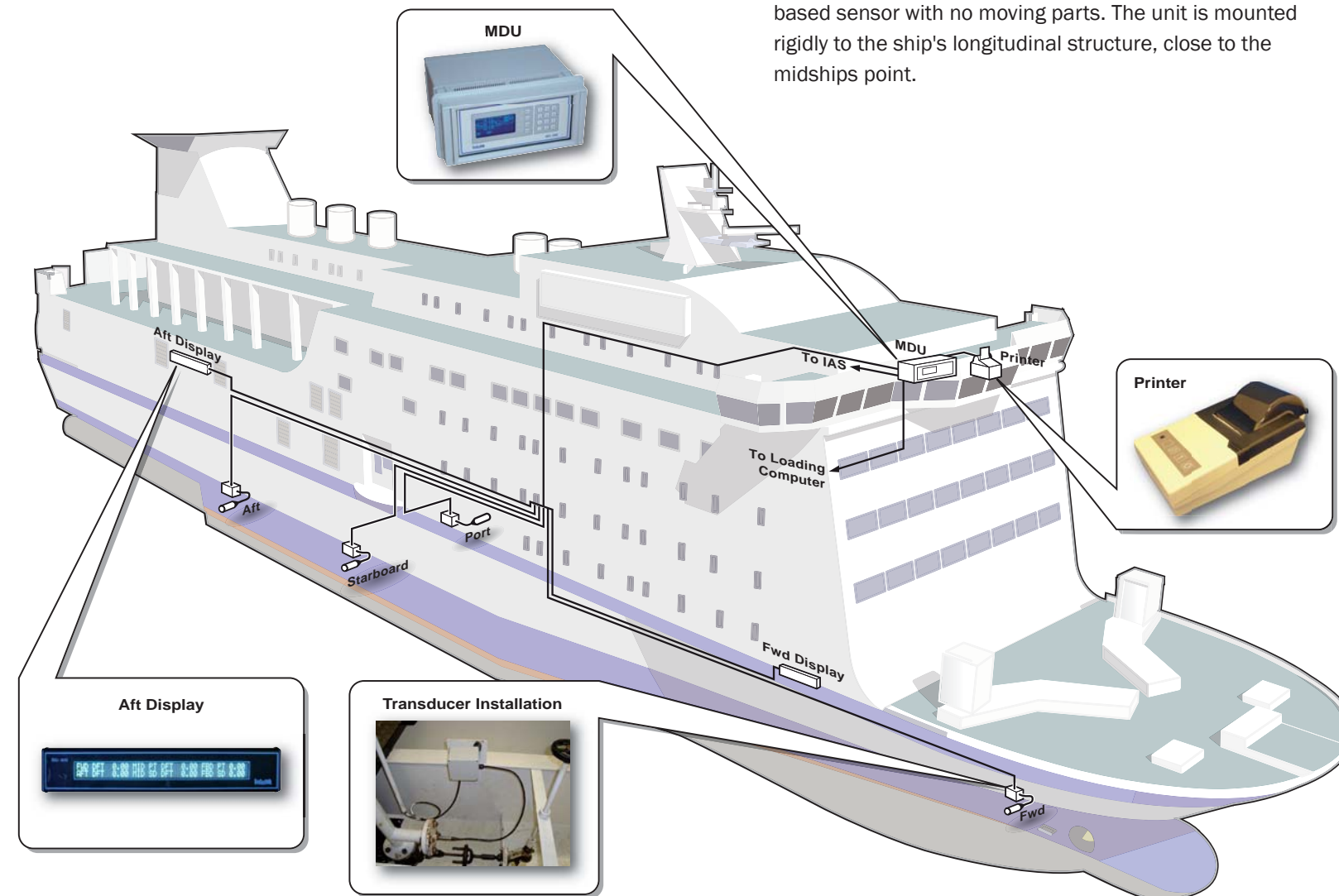
- High overpressure protection, better than 10 bar
- High signal level output
- Minimal hysteresis
- 316SS, non-corrodible in seawater

Each unit is supplied fully calibrated together with a PTC enclosure - a polycarbonate box sealed to IP65, with gland entry for the signal/power and transducer cable.

Experience and convenience of use has led to their acceptance in all types of vessels and many other specialised areas including

- Ferries
- Dredgers
- Floating docks
- Barges and rigs
- Bulkships and LNGCs
- Floating linkspans

Each of the systems has self diagnostics monitoring the accuracy of the displays. The 4-sensor and 2-sensor with Trimmer types will function at reduced accuracy should one of the transducers fail.



System Options

Remote Display Unit:

These are high brightness Vacuum Fluorescent Display (VFD) units, 2 lines x 20 characters, mounted in a rugged IP65 rated enclosure for installation on the vehicle decks of a ferry, cargo control room or ballast stations loading office. The reading is clear and unaffected by temperature extremes unlike LCD units. They display Fwd, Aft, Port and Stbd draught at the marks, and freeboard to the loadlines, together with any fault message that may occur.



Printer:

Certain operators require printer output of draughts for logging purposes. The print selection is configured for the operator's requirements, with port and approved loading condition to be entered manually, and time, date, draughts and trim automatically.



Specifications

Electrical Requirements:

- Power supply 80 to 260 VAC 47-440Hz
- Power Rating <45VA
- Dimensions W-323mm x H-120mm x D-276mm
- Weight - 9kg

Cabling:

- 4 core shipwiring screened/unscreened

MDU User Interface:

- 256 x 128 graphics VFD
- 4 x 4 membrane keypad

System:

- Display Resolution - 1cm
- Accuracy approx +/- 7mm

Service & Support

Trelleborg Marine Systems UK has been designing, manufacturing and supporting leading edge marine energy management and safety systems for over 20 years. With the Head Office located in Northwest UK, a team of experienced service engineers and performance analysts/specialists provides installation, commissioning and in-service support worldwide. The worldwide team includes dedicated staff in our Korea and Singapore offices.

A network of experienced sales/technical agents and associates worldwide provides further support, and ongoing technical training is offered to both customers' and associates' engineers worldwide.