

## Options



### MTDE-Mimic Display

Explosion proof heavy cast bronze mimic display give on the spot indication of 95% (yellow LEDs) and 98% (red LEDs) level alarm status. This display eliminates the need for expensive X-MAS tree. Multiple display can be hooked up in series. Includes also ACK switch for easy on deck acknowledgment of level alarms.



### Guard Level® DWSG

**Double wiper sight glass**  
Raised glass, largest viewing window and available integral gas freeing vent and flame screen makes it a popular option to enhance safe loading. Also used as a visual aid to give a dryness certificate when located in the aft part of the cargo tanks. All stainless steel construction.



### Digital Tank temperatures

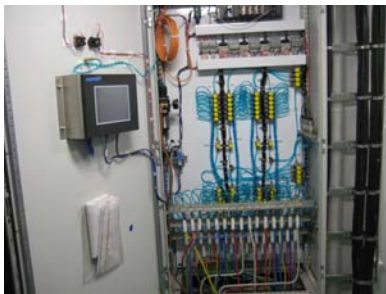
Covers temperature range from -20 to +100 deg. C.  
Intrinsically safe .  
Choose 1, 2 or 3 sensors per tank.  
Simple 2 core cable to CCR for ALL sensors.



### WSU Work Station Unit

Ideal for load computer or slave instance of MCU. Quiet fan-less design and support screen size 17", 19" or 21" LCD monitors. (19" standard)  
Can interface with other software packages such as Load-Safe, Ocean Motion, Locopias, NAPA and others.

## Ballast-Service Tanks and Draft Gauging

Pressure Sensor Type	Electro-Pneumatic Type
<p><b>Guard Level® HPT-3 Hydrostatic Pressure Transducer for Level Gauging of Ballast and Fuel Oil Tanks.</b> Transducer is fitted inside a 2" (50mm) sounding pipe and can be removed and serviced when tanks are in service. Transducer features high accuracy and stability, The HPT -3 is type approved and intrinsically safe. Requires Bergan supplied deck junction box.</p>	 <p><b>Guard Level® Electro-pneumatic gauging for ballast, service tanks and draft point.</b> Economical and reliable bubbler system that is auto-calibrating and highly accurate by use of digital flow control valve and precision air regulator. Optional liquid non-return valve are mounted on tank top. Refer to separate brochure for more details..</p>
<p><b>Guard Level® HPT-2 Hydrostatic Pressure Transducer For Manifold Pressure, Level sensor for tanks with side Access (FW)</b> Transducer features high accuracy and stability. Type approved and is intrinsically safe.</p>	

# Guard Level® DFG System Float Gauge Cargo Monitoring System For Tank Ships

**The only ALL-IN-ONE level gauge on the market**



**Used on Exxon-Mobil chartered vessel**

- **Cargo Tanks / Ballast Tanks / Fuel Oil Tanks / Ship's Draft**
- **Type Approved by ABS, DNV, LR, GL, BV.**
- **Complies with U.S. Coast Guard Regulation 46 CFR 39.20-3, 39.20-7, 153.408, and 153.409**
- **Complies with IMO BCH Rule 4.14, IBC Code Rule 15.19 and Solas 59-1.6**

Specifications subject to change without notice.  
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# The Guard Level® DFG

# System for Tank Ships

## MCU, Master Control Unit

Very compact main control panel for cargo level, temperatures, tank pressure and if supplied all other ballast and service tank levels. Main panel incorporates independent 98% level alarm (shown) Power fail alarm for both mains and auxiliary power sources are provided. SerialRS422/485 and Ethernet ports are provided as well. Complies with IMO, USCG and Class requirements for closed loading and incorporates intrinsically safe sensor inputs/outputs. Required power: Recommended 24VDC from Bergan Guard Power® UPS supply.



Guard Level 07324 MCU  
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## Guard Power™ UPS-400 400W UPS Power Supply

Features 6 individual circuits and have built-in power fail alarm and relay output. Fan-less quiet design. Suitable for bulkhead mounting and additional displays can be supplied for bridge and ECR.



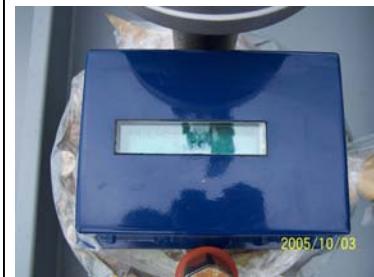
Guard Power™ UPS-400  
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Available UTI port gives undisputed comparisons between manual and remote indication. Totally eliminates trim and list errors. Very user friendly.



2005/10/03

Convenient local LED lighted display for:  
Ullage or level or both  
Temperature (up to 3 points)  
Tank (I.G.) Pressure



2005/10/03



## Guard Level DFG Digital Float Gauge for Cargo Tanks

Simple 2wire connection (4 wire with independent 98% or 6 wire with independent 95% and 98%)  
Intrinsically Safe  
High Accuracy with standard sensor pitch of 10mm  
No drift ever  
No calibration ever  
Measurement range from 0-20m  
Single 250mm (10") deck penetration for clean deck.  
Integral front lit LCD display (no wiring required).  
Ullage displays in metric or feet, and fractional inches for easy on deck comparisons with portable MMC/Hermetic tape machines.

**Options:**  
Integral tank pressure sensor with NO additional wiring to CCR.  
Up to 3 tank temperature sensor with NO additional wiring to CCR

Test rod for independent level alarm (95% and 98% available)



2005/10/03

## CMS+ Cargo Monitoring Software

Sophisticated monitoring and alarm software running on embedded fan-less PC and utilizing compact flash memory. Very user friendly where user can configure his own loading screen for up to 10 ports. Alarm logging and alarm print function supported. Support extensive built-in diagnostic tools and can easily be configured for different sensor configurations.



**Bergan Dual Strobe with air horns and Ex solenoid valve or electric horns (Option: Ex)**  
Overfill Alarm- red  
Hi alarm- amber  
Power Fail-Blue



2006/10/04

## MTDE Multifunction Tank Display, Explosion Proof

On deck sunlight viewable from 10m distance local displays. User can look at any tank from any display. Numeric and graphic display of tank level/ullage, volume, tank pressure and tank temperature. You can look at any tank from any display. When connected to the independent level alarm you can also acknowledge any alarm from any display. Can be connected in series with optional mimic MTDE display.