

Monitoring of cargo inert gas pressure on the bridge

The OCIMF¹ states that all vessels should have cargo tank pressure measurement ensuring that the pressure in the tanks are within the allowed design limits for safe cargo transport.

The OCIMF are used by most oil majors as a guide for vetting services of third part vessels. In addition to this ExxonMobil has released an updated guide as of November 2010, also referred to as MESQAC², used for vetting inspection to all ExxonMobil affiliates engaged in marine transportation using third party vessels.

The document states that all third party operated vessels not fulfilling the "Must"³ criteria will not be considered for ExxonMobil affiliate service.

Furthermore vessels not meeting environmental and safety expectations described as "Strongly Preferred"⁴ may be disadvantaged in the selection process versus other vessels meeting those requirements.



The inert gas pressure readings are clearly displayed on the screen.

1 Oil Companies International Marine Forum

2 Marine Environmental, Safety and Quality Assurance Criteria for sea going vessels in Exxon Mobil affiliate service

3 H.29 Vessels MUST have fixed cargo tank pressure monitoring equipment fitted, with a visual display unit installed in the cargo control room. The system shall include manufacturers set high and low pressure alarms as detailed within OCIMF SIRE 4 VIQ CH. 8.30, and additionally a further minimum two adjustable, user defined, alarms limits which can be set as required. These alarms should sound an audible and visual alarm in the CCR if the set limits are exceeded. [SIRE 4 VIQ CH. 8.30]

4 H.30 It is Strongly Preferred that vessels are fitted with a cargo tank pressure monitor display and alarm unit on the bridge in addition to the display and alarm unit installed in the cargo control room (H.29)

The document states that a cargo tank inert gas pressure display and alarm units to be installed also on the bridge in addition to the cargo control room.

Inert gas pressure monitoring system

The solution is a 10" display mounted on the bridge that can be configured to show up to 18 inert gas pressure readings. Tank names are configured to the vessel specific needs.

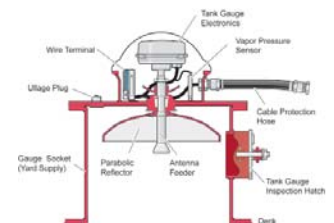
The system is directly connected to the cargo monitoring system, providing a seamless integration, transferring values and alarm status to the inert gas pressure bridge system.

Another benefit with the seamless integration is that it ensures that the alarm limits set in the cargo monitoring system are automatically transferred to the inert gas pressure bridge system.

On the 10" display it is possible to view the inert gas pressure readings and alarm status. Alarms are clearly indicated on screen and the local buzzer is activated upon alarms.

The inert gas pressure sensor is integrated into the Rosemount TankRadar unit, and can easily be retrofitted as no hot work is needed.

CT 1P	Status	CT 1C	Status	CT 1B	Status
100 mbar		100 mbar		250 mbar	Hi
CT 2P	Status	CT 2C	Status	CT 2B	Status
40 mbar	Lo	100 mbar		100 mbar	
CT 3P	Status	CT 3C	Status	CT 3B	Status
160 mbar	Hi	100 mbar		100 mbar	
CT 4P	Status	CT 4C	Status	CT 4B	Status
100 mbar		100 mbar		100 mbar	
CT 5P	Status	CT 5C	Status	CT 5B	Status
100 mbar		100 mbar		100 mbar	
CT 6P	Status	CT 6C	Status	CT 6B	Status
100 mbar		100 mbar		100 mbar	



An example showing the inert gas vapor located inside the Tank Gauge Unit.

System Description

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Rosemount® CMS

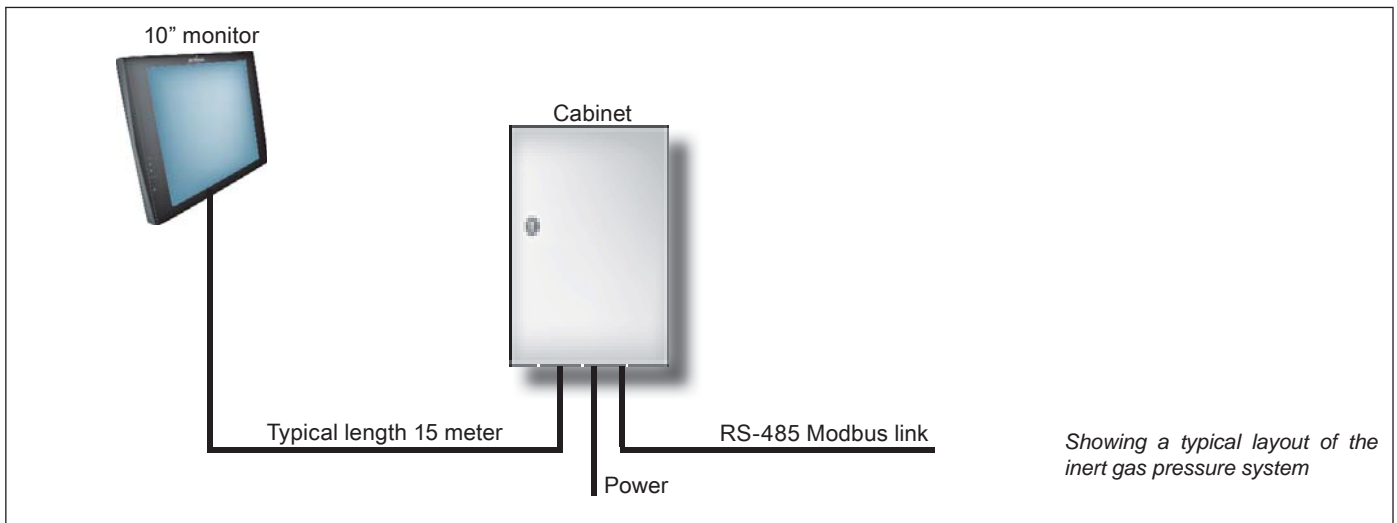
Technical Specification

Inert gas pressure system

Dimensions (Height x Width x Depth)*	
Cabinet	360 x 240 x 151 (mm)
Plate mounting	300 x 180 x 85 (mm)
10" Screen console mounted	295 x 240 x 65 (mm)
Cabinet and built in monitor	520 x 400 x 230 (mm)
Power	230/115 VAC 50-60Hz
Power Consumption	Max 15W
Cabinet Color	RAL 7032 or Munsell 7,5 BG 7/2
Communication interface	RS-485,Modbus (RTU)
Pressure channels** / Screen	18
Weight (Incl. Cabinet and Monitor)	10 kg (22 lbs.)
Sealing	IP 22
Operating temperature	0 to +55°C

* Details regarding cut out and mounting requirement see installation drawing

** Prerequisite is that inert gas sensor is fitted to respective tank



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