

# Cargo Tank Measuring System

## GENERAL

Vapour emission control system is intended for analyzing the waste vapour gas for oxygen gas content. The system also includes the pressure transmitter which can monitor the pressure on the waste vapour line. This system consists of two cabinets ; a detector cabinet in which the pressure transmitter, oxygen sensor, flow alarm sensor, sample selector valve and purge valve are included, and the monitoring & alarm panel on which the alarm unit, oxygen indicator are provided. The detector panel in steel is installed on deck nearby the vapour manifolds and the monitoring & alarm panel is mounted in the cargo control room.

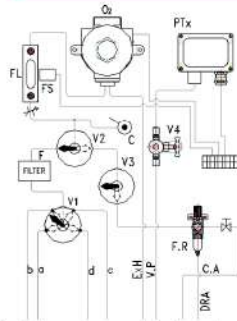
## PRINCIPLE OF OPERATION

The sample tubes in the detector cabinet run from the sample point inlets to oxygen sampling selector valve and mode selector valve. Exiting from this single tube is leading the chosen sample gas through filter between oxygen sampling selector valve and mode selector valve, and then finally passes the oxygen sensor, exhausted through the exhausting line on the cabinet panel. The display shows the O<sub>2</sub> concentration from 0.0 to 25.0V% O<sub>2</sub> on the oxygen monitor and the "High oxygen content alarm" is activated at 8V% O<sub>2</sub>. The "Flow failure" is also operated when the flow is stopped. The display shows the pressure transmitted from waste vapour line on the vapour pressure indicator from 0 to 200mbar. The "Low pressure alarm" is also activated at 10mbar and the "High pressure alarm" ;at 120mbar. It is possible to increase or decrease the pressure alarm value freely and the external alarm output relay for all alarm can be provided as optional items.

## FEATURES

- Intrinsically safe detecting is applicable to all of inflammable fluids
- All stainless steel material pressure sensor
- Individual adjustable alarm for oxygen and pressure
- Most advanced electronic technology for high reliability and durability.

DIAGRAM FOR DETECTION PANEL INSIDE



- FL : Flow indicator
- F : Filter
- FR : Filter & Regulator
- PTx : Pressure transmitter
- V1 : Oxygen sampling line (selecting valve)
- V2 : Mode selector
- V3 : Cleaning air stop valve
- V4 : Test valve for press. transmitter
- a : Port(F)
- b : Port(A)
- C.A. : Cleaning air inlet
- ExH : EXHAUST
- FS : Flow alarm sensor
- C : Calibration gas connector
- O2 : Oxygen sensor
- V.P : Vapor collecting main press.
- DRA : DRAIN LINE

## TECHNICAL SPECIFICATION

### SYSTEM

- Main power supply : AC 110/220V, 50-60Hz
- System power : DC 24V
- Air supply : 4-7bar
- Function :
  - Inert gas pressure display(0-200mbar)
  - Inert gas high pressure alarm(120mbar)
  - Inert gas low pressure alarm(10mbar)
  - Oxygen content display(0-25% V% O<sub>2</sub>)
  - Oxygen content high alarm(8 V% O<sub>2</sub>)
  - Flow failure alarm(If the flow is stopped)
  - External alarm(option)
- Enclosure : Ex ia II C T4

### PRESSURE TRANSMITTER

- Range : 0-200mbar
- Output : 4.....20mA
- Accuracy : ± 0.2% of F.S
- Power supply : 17-28Vdc
- Safety : Ex ia II C T4

### DIGITAL INDICATOR

- Size : 48H × 96W × 112D
- Output contact : H and L alarm
- Input : 4.....20mA

### OXYGEN SENSOR

- Range : 0-25% O<sub>2</sub>
- Output : 4.....20mA
- Accuracy : ± 2% of F.S
- Power supply : DC 24V
- Safety : Ex ia II C T4

### ALARM ANNUNCIATOR

- 10 channel type
- Function : Accept horn, Accept flash, Test function
- Power supply : DC 24V



DISPLAY & ALARM UNIT OVMS-50

