



Application Note 107

BADER III Cattle Carrier - Ship Alarm System

HIGHLIGHTS

4 x Industrial PC Operator Interface Panels (3 in the Engine Room and 1 on the Bridge)

CSI DeltaMACS modular alarm system (BV approved) allows for simple design and expansion

Direct Thermocouple and RTD connection to alarm input modules

Exhaust gas temperature monitoring software provides alarm upon deviation and graphical display for all engine cylinders

Alarm settings, descriptions and groupings are user-definable via a plug-in QWERTY keyboard

Outputs from the alarm system are used as interlocks for the Engine Control System

Over 300 Digital Inputs and 150 Analog Inputs connected to the system

Complete system was designed and installed within 6 weeks

INTRODUCTION

The Bader III is a Cattle Carrier that is used to transport live sheep and cattle from Australia to the Middle-East. In May 2000, the Bader III suffered an engine room fire that severely damaged the electrical wiring and engine controls on-board. As a result, Industrial Automation was invited to replace the existing (damaged) alarm system, as well as the Engine Control System (this is a separate control system powered by a Sixnet PLC). Since the ship's owners were losing thousands of dollars every day that it remained in v be completed within 6 weeks.

APPLICATION

Industrial Automation is to design, supply and commission the new alarm system on-board the Bader III. The old alarm lamps are to be replaced with LCD Operator Interface Panels, and the old alarm panel completely removed and re-wired. It also includes the supply and calibration of new pressure and temperature meters, to replace those damaged in the fire.

EQUIPMENT USED

- CSI DeltaMACS Modular Alarm System consisting of the following components:
 - 14 x 32pt Digital Input Modules
 - 2 x 32pt Digital Output Modules
 - 12 x 16ch Analog Input Modules
 - 4 x Industrial Panel PC's
 - 3-tier cubicle (2.2m long)
 - Faget pressure/temp. meters

END RESULT

The old alarm system was removed and the new 3-tier panel (complete with CSI DeltaMACS modular alarm system) was installed in its place. Three Panel PC's were installed in the Engine Room, with one PC being installed on the Bridge. The system was designed, installed and commissioned within 6 weeks. The new alarm system has the following features:

- Alarm settings & descriptions, can be changed via a plug-in qwerty keyboard - allowing for self-maintenance of system;
- Graphical display of exhaust gas temp's for all engines;
- Grouped alarm screens can be configured to provide a summary of each sub-system;
- Real-time alarm printing;
- Industrial keypad provides alarm control and screen navigation;
- Alarm System still functions without Panel PC's – through horn circuit and flashing LED's.

The Alarm System installed on the Bader III is also capable of the following:

- DeltaMACS alarm modules can be distributed throughout the ship to reduce wiring;
- Graphical screens can be added to the Panel PC's;
- The existing system can handle up to 448 Digital Alarms, 192 Analog Inputs and 64 Digital Outputs – with room for expansion.
- Optional engineer safety and paging system;