Monitoring And Alarm System

Overview

The Monitoring And Alarm System in the engine room of the ship is an important monitoring equipment in the ship. It is an indispensable condition to realize the automation of the engine room and even the automation of the ship. It can replace the engineers to monitor the running state of the equipment under the relatively bad conditions, and give the sound and light alarm signal after the failure of the running equipment. After the failure is eliminated, the failure alarm can be cancelled, and it can also be in the aut-0 mode The advanced engine room monitoring and alarm system can not only improve the operation economy, safety and reliability, but also greatly promote the process of ship automation and the realization of intelligent ships.

The Monitoring And Alarm System (AMS) can collect the alarm signals of the whole ship's main propulsion equipment, generator set, side thruster, daily auxiliary equipment, various pump sets and valves and other systems or equipment, display the corresponding alarm signals with a good human-computer interface, display the real-time and historical data of the monitoring points as required, and send the alarm signals to the extended alarm system through the extended alarm interface, It can have data interface with integrated command system, LAN system, VDR, etc.

System architecture

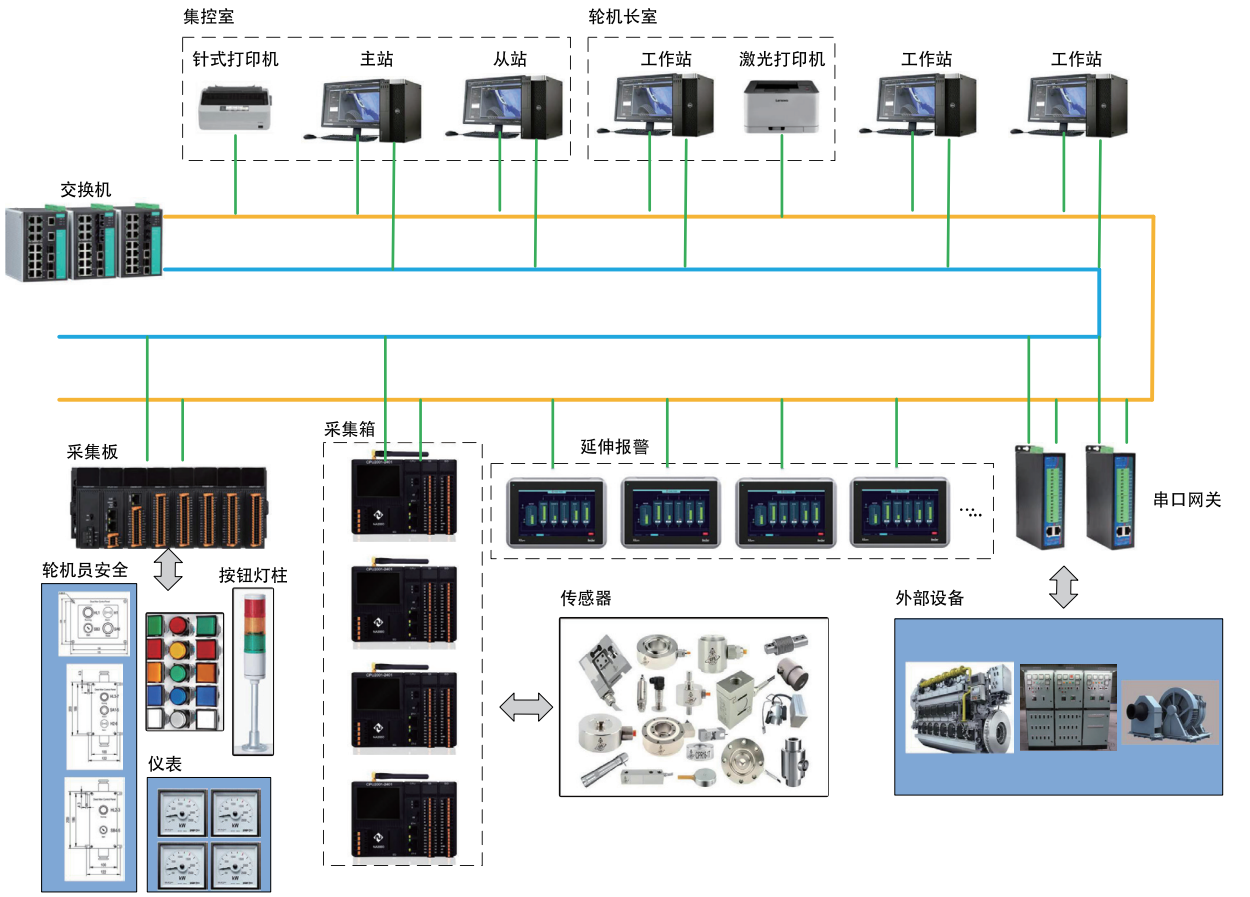


Figure 1 Structure of AMS

Product features

- The system is stable and reliable with dual redundant Ethernet (< 90ms switching);
- The core components are self controlled and compatible with Siemens PLC system;
- Modular design and distributed acquisition are adopted to provide users with flexible combination configuration scheme;
- Support a variety of interface customization, provide users with a variety of modification functions;
- With a variety of classification society certification (CCS, ABS, DNV);
- The operation of the system does not depend on the upper computer, and the failure of the main monitoring computer does not affect the output function and the extension alarm;
- Parameters such as interlock, delay, deviation, change rate, upper / lower limit and alarm level can be set online.

Product function

- It can real-time monitor the operation status of system equipment (main machine, generator, side push, auxiliary machine, etc.) and display equipment parameters;
- It can collect analog quantity (voltage, current, resistance, etc.), switch quantity, pulse quantity and other signals;
- It can observe the real-time running trend and historical trend, and monitor the 8-channel data alarm function at the same time;
- Display alarm information and system self inspection results through various interface performance modes, and provide audible and visual alarm;
- It has the function of host safety protection and supports the calculation and output of host load reduction curve;
- Display real-time alarm and historical alarm information in the form of list;
- It has the function of alarm quick display and alarm history query;
- Support user-defined printing, real-time alarm printing, timing alarm printing and other printing methods;
- User login mechanism with authority setting function to ensure operation safety;
- Personnel management function: including duty officer selection, engineer safety system and engineer call function;
- Provide external information output interfaces such as VDR, whole ship network system, etc.

Technical index

- system parameter:
  - Working voltage: single phase AC220V ± 10% 50 / 60Hz; DC24V±20%;
  - Communication mode: Ethernet / DP / RS485 / can communication;
  - Parameter real-time response time: ≤ 2S;
  - Measuring points: 20000.
- IPC:

  - CPU: Intel Core i5;
  - Memory: DDR5 8GB;
  - Hard disk: SSD 512GB;
  - Boundary dimension: 160mm × 254MM × 60mm.
- Monitor:

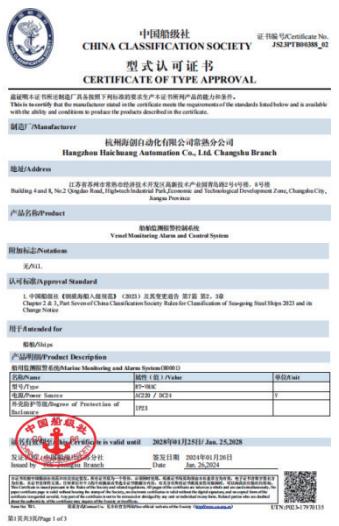
  - Display type: 24 inch display
  - Resolution: 1920 x 1080;
  - Interface: VGA, HDMI;
  - Installation: embedded installation;
  - Boundary dimension: 539.5mm × 36.3mm × 320.9mm.
- Uninterruptible power supply:

  - Working voltage: single phase AC220V ± 10% 50 / 60Hz;
  - Installation type: tower installation;
  - Boundary dimension: 144mm × 399mm × 209mm.
- Signal acquisition box:

  - Working voltage: single phase AC220V ± 10% 50 / 60Hz;
  - Installation type: wall mounted
  - Type I signal acquisition box is suitable for measuring points between 0 and 80;
  - Boundary dimension: 500mm × 700mm × 210mm;
  - Type II signal acquisition box is suitable for measuring 80-150 points;
  - Boundary dimension: 500mm × 700mm × 210mm;
  - Type III signal acquisition box is suitable for measuring points between 150 and 250;
  - Boundary dimension: 800mm × 1000mm × 300mm;
  - Protection grade: IP23 / IP44.
- Extension alarm:

  - Working voltage: DC24V ± 20%;
  - Installation type: embedded / wall mounted;
  - Boundary dimension: 270mm × 190mm × 140mm;
  - Protection grade: IP23.

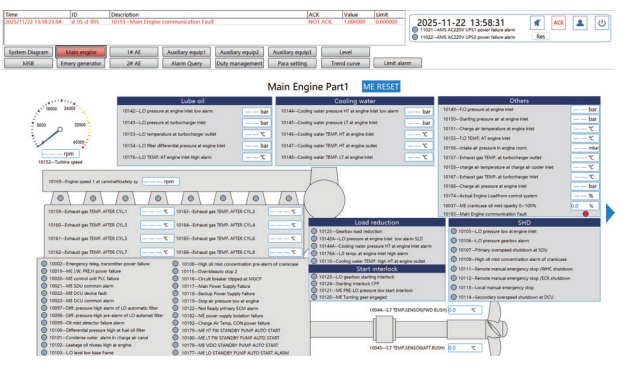
Classification society certificate

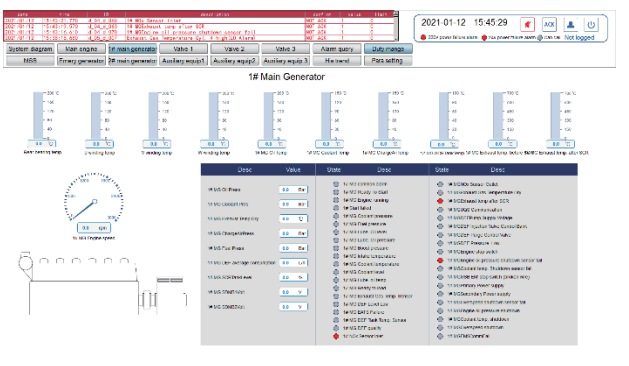

中国船级社
CHINA CLASSIFICATION SOCIETY
型式认可证书
CERTIFICATE OF TYPE APPROVAL

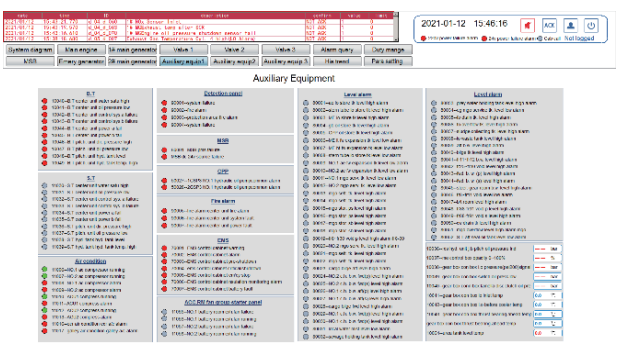

ABS
Confirmation of Product Type Approval


DNV
TYPE APPROVAL CERTIFICATE

software interface


Main Engine Part1


1# Main Generator


Auxiliary Equipment