GCJB-05
E/R CAN MONITOR ALARM SYSTEM
PRODUCT INSTRUCTION

HENAN GUANGCAI ELECTRIC CO., LTD

Add: Sangqiang Industrial Park Taihang Rd.
Anyang Henan Province, China
Tel:+86-0372-3159500 (office)
+86-0372-3159512 (technical department)
Fax: +86-0372-3159506 (office)
+86-0372-3159511 (technical department)
P.C.: 455000
E-mail:gcdesign@aygcship.com
Http://www.aygcship.com

GCJB-05 E/R CAN MONITOR ALARM SYSTEM

PRODUCT INSTRUCTION

A. General

GCJB-24 engine room monitor can alarm system is multifunctional general purpose alarm monitoring plant, it adopts microprocessor MPU control technique for design, and selects technique of large scale integration.

Visual striking signal for audible and visual alarm will be sent out when there is an abnormal state during the process of running (as endangering the safety of vessel and machinery, life etc.),which is convenient for the staff to deal quickly; It is indispensable alarm device for vessel's safety running in modern times, this product conforms with the standard and relative international standard of CCS, as the reliable performance and good quality, it can be used in all classes of marine home and abroad.

Display unit panel of engine room monitor alarm system adopts PVC overlay and touch key, it has merits as simplicity of operation, functional reliability, configure flexibility, beauty and small, convenient for installation etc.

B. Primary Function and Use

Engine room monitor alarm system is mainly used for detecting valve binary alarm of main engine and other equipment. For example over temperature and overpressure of water, oil and air , liquid level overrun of water and oil, electric network insulated. if parameter is out of limit, the corresponding indicating lamp will flash together with audible and visual alarm,aural warning stops until push the "mute" button,alarm indicating lamp turn to flat light until alarm removed.

This system adopts RS-485 communication during every unit. there are only 4 pieces of connection cable (include power supply) as adopting RS-485 bus type digit transmission. RS-485 bus's transmission line made use of equipoise twisted pair, it is multipoint communication standard enacted by EIA. It adopt differential signal to transmit;Max. transmission range may reach 1.2 km; may connect 32 pieces of drivers and transceiver; Min. Sensitivity of receiver may reach 200 mV; Max. transfer rate may reach 2.5 MB/S.

Dimmer: there is dimmer key-press,suitable brightness may be adjust to as per need, it has automatic memory function of power cut, and needn't reset after next power on .

Test: used for detecting whether its working state is normal. if all

indicating lamp flash together with the sound output after press test button, it shows the working state is normal.

Mute key: used to affirm/reset alarm. After pressing mute key, squealer and outside control alarm relay restitute. LED for alarm flash until alarm failure disappear.

Identification signal:signals of general emergency alarm, CO2, fire alarm, machine fault, telephone call, engine telegraph etc.

Input type:mainly collect binary alarm, may collect 256 points at most, each point could be setup as binary of close alarm or open alarm, that is NO, NC input could be setup (close alarm/open alarm)

When any NO or NC input change,relevant led indicating lamp flash, meanwhile the built-in squealer sounds,and outside control audible and visual relay switch close.

When any new alarm is detected,relevant LED indicating lamp flashes, meanwhile squealer sounds, outside control audible and visual relay switch close. New alarm won't affect the LED which has alarmed.

C. Technical Specification

1. Working Voltage: DC24V(±20%-30%)1A;
2. Working reliably under the ambient condition of -10℃~+55℃;
3. Relative Humidity: ≤RH95%(+40℃);
4. Having corking Electro Magnetic Compatibility, and rigorous anti-interference measure is contained in the microcomputer technique.
5. Equipment has measures for anti-vibration ,moisture proof, salt mist proof and anti-fungus.
6. Type of alarm output: passive contact;
7. Maximum capacity of contact: DC36V / 1A;
8. Protection Degree: IP22

This product conforms with IEC iec-ninety-two-230 standard and China current steel seagoing vessel classification building classification building rules,satisfies International Convention For Safety Of Life At Sea(SOLAS).

D. Equipment Composition

GCJB-24 series engine room monitor alarm system is composed of alarm display unit, alarm data acquisition module packaging. monitor alarm control system contains power system and data bus.

Alarm data acquisition module could collect No.32 Route binary signal, it is divided into acquisition unit and main control unit; alarm display unit can be divided into 16 Routes and 24 Routes display.

If acquisition unit and display unit haven't received information from main control unit, the communication light won't flash until normal communication.

1. INSTRUCTION of alarm data acquisition module :

Alarm data acquisition module is installed near the equipment which is to be detected, its main function is collecting alarm data signal, the data of acquisition binary sends to display unit through data bus; it can also sends to computer monitor system, displays through LCD.

The acquisition binary could be setup as open alarm or close alarm; VDR 485 standard interface can provide standard data signal to VDR (voyage data recorder).

Alarm setup: dial switch SK2, SK3, SK4, SK5 Altogether 32 points, correspondingly 32 points collected; when the thumb dial switch is setup as ON, it will be open alarm, contrarily close alarm.

Address setup:main control unit needn't to be setup address; acquisition unit need to be setup address code, when setup address, 2, 3 of S1 must connect to address code which is setup for a short time under the condition of power on.

Note: all alarm acquisition points of acquisition main control unit have around 2-5 seconds' delay .

2. Display Unit INSTRUCTION:

The main function of display unit is indicating alarm state, providing LED (Light Emitting Diode) and LCD(liquid crystal Chinese Display) according to various requirement of user's. Display unit may be installed anywhere customer required, as WHC, ECC, Chief Engineer Room etc.

Generally speaking, monitor alarm control system has 2 composition mode: 3 pieces of alarm data acquisition module and 4 units of 24 Routes alarm display; 1 piece of alarm data acquisition module and 2 units of 16 Routes alarm display.

Each unit address of RS485 bus alarm is set as follows:

24 Routes acquisition unit

No.1 Route main control unit(start address is 0)

4 3 2 1

OFF

ON | | | |

No.2 Route acquisition(start address is 1)

4 3 2 1

OFF |

ON | | |

No.3 Route acquisition(start address is 2)

4 3 2 1

OFF |

ON | | |

24 Routes display unit

No.1 Route display(start address is 0)/ / data comes from the front 3 groups(8

Route each group)of the No.1 Route acquisition unit(main control unit).

4 3 2 1
OFF
ON | | | |

No.2 Route display(start address is 1)/ / data comes from the front 4 groups(8 Route each group)of the No.1 Route acquisition unit(main control unit),and the front 2 groups(8 Route each group)of No.2 Route acquisition unit.

4 3 2 1
OFF |
ON | | |

No.3 Route display(start address is 2)/ / data comes from the back 2 groups of the No.2 Route acquisition unit(acquisition unit),and the first group of No.3 Route acquisition unit.

4 3 2 1
OFF |
ON | | |

No.4 Route display(start address is 3)/ / data comes from the back 3 groups of the No.3 Route acquisition unit(acquisition unit).

4 3 2 1
OFF | |
ON | |

16 Routes acquisition unit
Main control unit(start address is 0)

4 3 2 1
OFF
ON | | | |

16 Routes display unit
No.1 Route display(start address is 0)//the front 16 Route alarm of 16 main control unit

4 3 2 1
OFF
ON | | | |

No.2 Route display(start address is 1)//the back 16 Route alarm of 16 main control unit.

4 3 2 1
OFF |
ON | | |

E. Other And Matters Need Attention

1. Connection Instruction:

Alarm data acquisition module connection:

J1, J2, J3, J4 are alarm input port;J5-1 is J1's common port,J5-2 for J2's common port,J6-1 for J3's common port,J6-2 is J4's common port; J7 is RS-485's interface,1 for B,2 for A;J8 is 24V power supply, 1 for-,2 for +. 16, 24 Route display unit connection:

4 core navigation plug'1, 2 for A,3,4 for B;

7 core navigation plug's 1 is 24V+, two is 24V-,3 is active alarm output.

2. Debug Method:

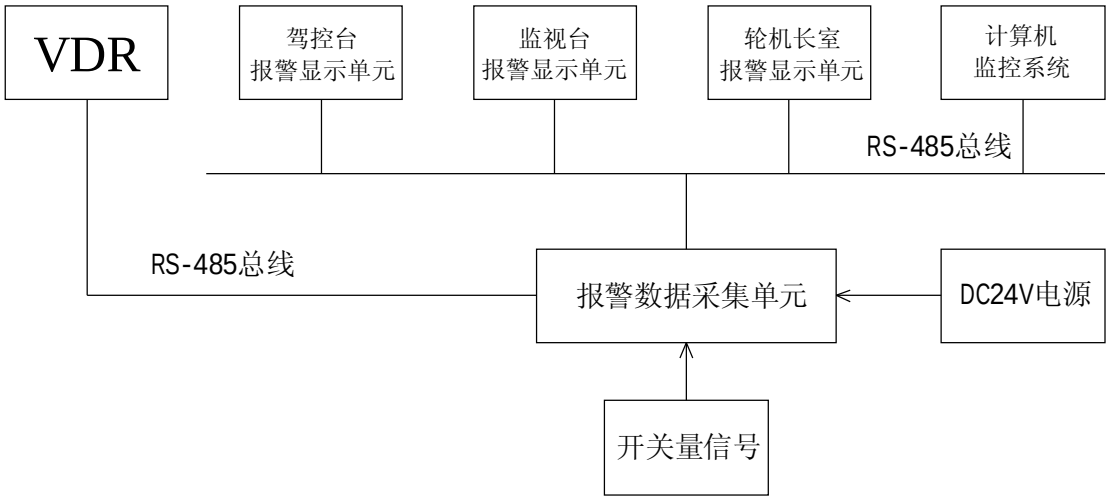
After connecting the wiring as required, setup the address of acquisition display unit from small to large, then electrify after short-connection between 2,3 feet of main control unit S1, main control unit begin to scan and record the connection condition of wiring at this time, after D3 light of main control unit flashing, take-off 24V power supply, remove the shorting stub between 2,3 feet of S1, it will work normally after power on.

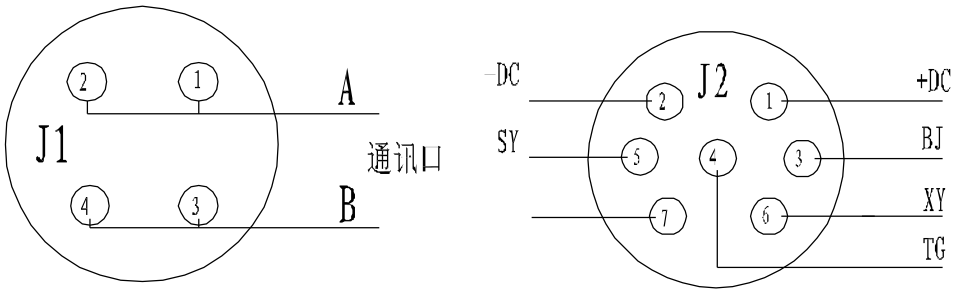
3. Request for wiring arrangement and matters need attention:

RS-485 bus is suggested using marine twin-core communication twisted pair shielded cable, sectional area should above 0.75mm2 ,power line should above 1 mm2,polarity can't be connected on the contrary. Data line can't be connected on the contrary or connect to power supply.

CEFP type communication cable which isn't less than 0.75mm2 is adopted as connecting cable, shield layer must connect shell reliably. Otherwise accompanied with external wiring diagram, panel drawing, and installation dimension.

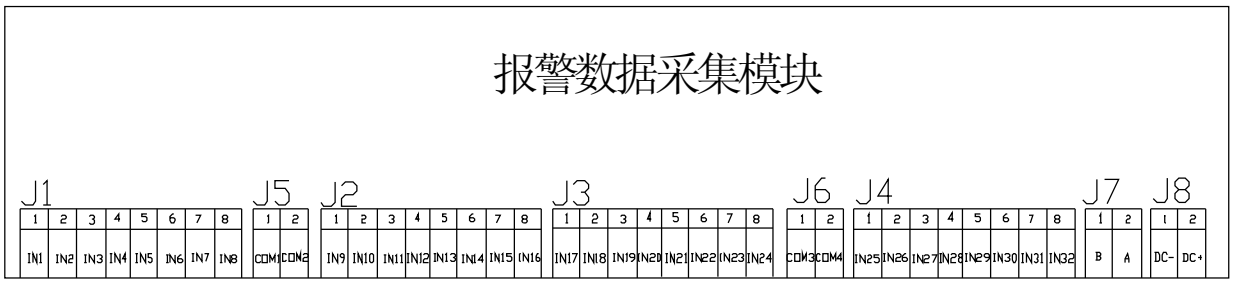
Connection between alarm display unit, alarm data acquisition module, power system and data bus as follows:





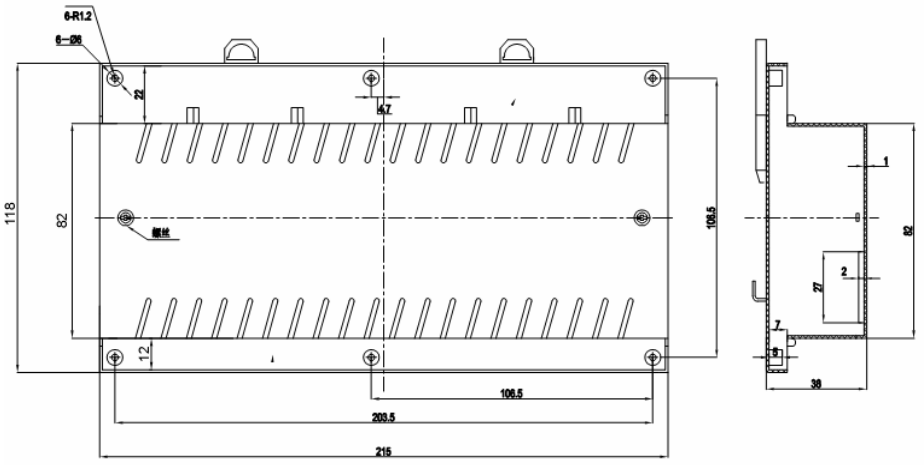
External Wiring Diagram Of 16 Route, 24 Route Display Panel

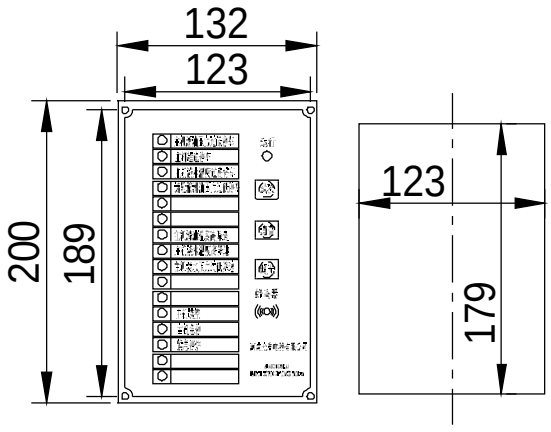
Note: A,B is data communication, +DC is 24V+,-DC is 24V-; BJ is alarm active output; SY is external extension test; XY is external extension mute push button; TG is external extension dimmer push button.



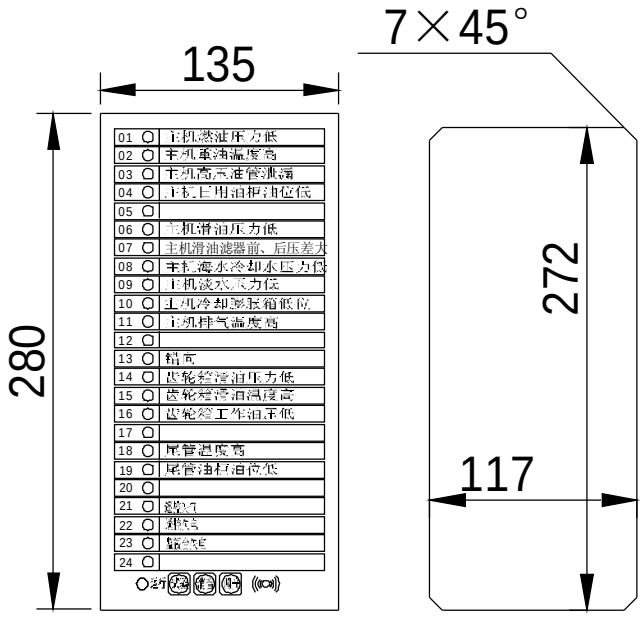
Note: COM1 is common port from IN1 to IN8; COM2 is common port from IN9 to IN16; COM3 is common port from IN17 to IN24; COM4 is common port from IN25 to IN32, J7 is communication port; J8 is power supply.

16 Routes Display　　24 Routes Display





16 Routes Display



24 Routes Display