

**ED21YZ9
MONITOR
FOR
DIESEL ENGINE**

DIRECTIONS FOR USE

JIANGSU ENDA GENERAL EQUIPMENT CO., LTD

I .General Stating

Monitor ED21YZ9 is the electronic monitoring system of diesel engine, which are controlled by the micro computer. The monitor can be used to accurately detect and indicate the engine speed, oil pressure, cooling water temperature, oil temperature, and based on the user's setting, it can timely monitor the parameters set above, any of the abnormal, it will send out the alarm signal, such as sound alarm, light alarm, remote alarm etc. Meanwhile, it can be equipped with long-distance equipment in order to control and display the running data of the diesel engine.

II .Product Characteristic

1. Micro-computer digital control, and reliable.
2. Digital shows the diesel engine parameter, integrates the measuring and monitoring in one body.
3. Resistant to vibration, moist, salt mist and high-low temperature.
4. Strong anti-interference capability, easy to use and install, and high performance and low cost.
5. Remote monitoring operating parameters.
6. Zero pressure automatically adjusted to zero.
7. Operating time accumulation of diesel engine.

III . Main technical specification

1. Use environment

- a. supply voltage: DC18~48V.
- b. Relative humidity $\leq 90\%RH$.
- c. Vibration: 2~25Hz, scope 1.6mm; 25~100Hz, Acceleration 40m/s².
- d. Working condition temperature: - 10°C~+55°C.

2. Range and accuracy of speed measuring

- a. Display range: 0~9999 r/min.
- b. Measuring error: ≤ 1 r/min .
- c. The highest signaling frequency: 20KHz.
- d. Sensor matched: Magnetic resistance pulse speed sensor.

3. Lube oil pressure measurement range and accuracy

- a. Measuring range: 0.00~0.84Mpa.
- b. Precision class: 1.5 levels.
- c. Sensor matched: Three-wire system sensor, voltage output 0.5V~4.5V.

4. Temperature measurement range and accuracy

- a. Measuring range: 0°C~130.0°C .
- b. Precision class: 1.5 levels.
- c. Sensor matched: NTC thermal resistance sensor.

5. Battery voltage monitoring

- a. Measuring range: 18.0~40.0V.
- b. Resolution: 0.1V.

6. Display mode

LED

7. Measuring and controlling channel number:

- Speed: 1 circuit.
- Pressure: 1 circuit.
- Water temperature: 1 circuit.
- Oil temperature: 1 circuit.
- Battery voltage: 1 circuit.
- Fuel oil leak: 1 circuit.

IV. Functions

1. Button Function and Usage

Reset: Hold down this button, the monitor meter will perform reset

function.

Test: When there is no rotational speed, hold down this button, all passage of monitor will have test to see working conditions one by one, when reaching the alarm set value, monitor will send out alarm signal with sound and light. When reaching the set value of stop, monitor will give the signal of stop automatically. Press “Reset” button resume normal working state.

Mute: When there is alarm signal, hold down this button, the sound alarm will disappear, the alarm light becomes plain light. When the monitor works normally without any fault, press the button to adjust the brightness.

Visitation: Press the button, accumulated running time value of the diesel is being shown on display window “Speed”, and battery voltage value is being shown on display window “L.O. Press.” 5 seconds later, the display windows resume displaying diesel speed value and lube oil pressure automatically.

Remote: Press the button, if “Remote” indicator lamp lights up, the diesel engine’s startup will be controlled by remote operation. Re-press it, indicator lamp “Remote” goes out. Press the button “Start” on main monitor to start the diesel. Remote start function is invalid.

Start: If the diesel is running normally, don’t press the button “Start”. When the diesel is in stop state and has no shutdown failure lock, hold the button, the indicator lamp lights up. The control panel sends out start signal. When the diesel starts up successfully and diesel speed value is greater than or equal to run speed, the monitor cancels start signal. In remote state, hold the button “Start” on remote controller, the monitor will send out start signal.

Stop: Hold the button, indicator lamp “Stop” lights up. The monitor sends out stop signal to force the diesel stopping. Release the button, the monitor cancels stop signal. (When the diesel stops automatically for disorderly shutdown, stop output signal be self-latching. In order to effectively protect stop actuator, please press “Reset” button to cancel stop output signal after the diesel comes to a complete stop.)

2. The meaning of indicating lamps

Charger Fault: Equivalent to the excitation functions. When generator stops working, battery provides exciting current to generators. And the indicator lamp lights up. When generator works normally, the indicator lamp goes out.

Running: When the diesel starts up successfully, and the diesel speed value is greater than or equal to run speed value, the indicator lamp lights up.

Remote: When press the button “Remote”, the indicator lamp lights up.

3. Alarm

When monitor detects alarm signal, delay some seconds, it sends out audible and visual alarm signal (Overspeed alarm function with no delay). Meanwhile, the corresponding display window flashes. Press “Mute” button, sound alarm disappears, but display window keep twinkling. Only after completion of the troubleshooting, Alarm signal can be lifted.

4. Shutdown

When monitor detects out-of-limit stop signal, it sends out audible and visual alarm signal and stop signal. The corresponding display window flashes. Meanwhile, monitor will be locked automatically. (When storm out-of-limit signal appears, monitor won't be locked. When overspeed shutdown signal appears, monitor will be locked.) Press the button “Reset” after clearing fault, the monitor will restore normal measuring ability.

NO.	Alarm	Description
1	Overspeed	When monitor detects that diesel speed value is greater than or equal to alarm set value, it sends out audible and visual alarm signal. Lamp “Alarm” lights up. Meanwhile, the corresponding display window flashes.

2	Overspeed Shutdown	When monitor detects that diesel speed value is greater than or equal to stop set value, it sends out audible and visual alarm signal and stop signal. Lamps “Alarm” and “Stop” light up. Meanwhile, the corresponding display window flashes.
3	L.O. Press. Low	When monitor detects that lube oil pressure is lower than alarm set value, it sends out audible and visual alarm signal. Lamp “Alarm” lights up. Meanwhile, the corresponding display window flashes.
4	L.O. Press. Low Shutdown	When monitor detects that lube oil pressure is lower than stop set value, it sends out audible and visual alarm signal and stop signal. Lamps “Alarm” and “Stop” light up. Meanwhile, the corresponding display window flashes.
5	C.F.W. Temp. High Alarm	When monitor detects that cooling freshwater temperature value is greater than or equal to alarm set value, it sends out audible and visual alarm signal. Lamp “Alarm” lights up. Meanwhile, the corresponding display window flashes.
6	C.F.W. Temp. High Shutdown	When monitor detects that cooling freshwater temperature value is greater than or equal to stop set value, it sends out audible and visual alarm signal and stop signal. Lamps “Alarm” and “Stop” light up. Meanwhile, the corresponding display window flashes.
7	L.O. Temp. High Alarm	When monitor detects that lube oil temperature value is greater than or equal to alarm set value, it sends out audible and visual alarm signal. Lamp “Alarm” lights up. Meanwhile, the corresponding display window flashes.

8	L.O. Temp. High Shutdown	When monitor detects that lube oil temperature value is greater than or equal to stop set value, it sends out audible and visual alarm signal and stop signal. Lamps “Alarm” and “Stop” light up. Meanwhile, the corresponding display window flashes.
9	F.O. Leak	When monitor detects that fule oil leak signal inputs,it sends out audible and visual alarm signal. Lamp “F.O. Leak” lights up.

V. Installation

a. Installing hole:

On the underside of equipment, set four holes with the center of equipment as benchmark. Its location: Length: 120mm, Breadth direction: 65mm. Install the monitor at a proper location and fasten it.

b. Speed sensor is equipped on the shell of measure speed gear, before installing, at first, revolve the sensor until it touches the gear exterior rim, then back off half a circle until the clearance between sensor and gear exterior rim is vary from 0.5 to 1.5mm, at last, fasten the nuts.

c. Oil-pressure, water temperature, and oil temperature sensors are installed at the relevant positions, fasten the aviation plug, give your attention to prevent water.

Connect the lines well according to the attached drawing of connection.

VI. Notice

1. Before the instrument into use or replacing lube oil pressure sensor, check lube oil pressure. Specific methods: Connect the lube oil pressure and confirm the oil pressure is zero. Turn on the monitor, and at the same time hold “Mute” button. Don’t release “Mute” button” until display window “L.O. Press.” display value is zero.

2. Before starting diesel, turn on the monitor and lasts around 5 seconds. If the

diesel fails to start up, and needs to restart, press the “Start” button after the diesel comes to a complete stop.

3. When the monitor is working normally, please don't press the buttons, such as “Mute”, “Stop”, “Reset”, “Start”, etc.

4. Check the connections of sensors and monitors regularly make sure they haven't been corroded by oil and water, and haven't any loose phenomena.

5. To avoid electromagnetism interference, distant cable and power cable should be placed dividedly.

6. To keep in good repair regularly.

7. When the monitor doesn't work, please contact qualified worker.

8. Prohibit the monitor's main engine and parts and auxiliary equipment from flushing. In case the monitor is wet, clear it with a clean cloth. Prohibit high-temperature baking

9. Use a clear cloth infected by alcohol to disperse oil stain.

VII.Maintenance Period

Since the date of leaving plant, the quality maintenance period is consistent with the diesel. If there's any quality problem, we will supply repair service without asking any payment.

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