

Diesel Engine Protection Module

BE72

Bernini Design srl ITALY

The information in this document is subject to change without notice. For more information contact us or visit our web site

bernini@bernini-design.com

BE72 Specifications

DC Supply, Battery Plant	5V up to 36 Vdc
Static Outputs (short circuit proof)	200 mA dc
Key Switch Rating	30 A (30 secs)/80 A (1 secs)
Dimensions	72X72X55
Weight	300 gr
Operating Temperature	-30° C /+70° C
Operating Humidity (non-condensing)	95%

Description:

The BE72 includes the basic safeguards to protect an engine. The BE72 features 7 LEDs, 3 Static Outputs and a 30A Key Switch. The BE72 monitors an Oil Pressure-switch, Temperature-switch, Fuel Level-switch, Charger Alternator Voltage and an Emergency-switch. The BE72 provides a MANUAL mode of operation via a 30A Key- switch.

WARNING!! High voltage may be present inside the BE72 box. To avoid electric-shock hazard, operating personnel must not remove the protective cover or door of the panel. Do not disconnect the grounding connection. The BE72 can start the engine at anytime. Do not work on equipment which is controlled by the BE72. When servicing the engine, disconnect the battery and battery charger. We recommend that you place warning signs on the equipment indicating the above.

!! WARNING !! Relays and solenoids connected to the BE72 must be suppressed using flywheel diodes or suppression devices as indicated in the wiring diagram.

MANUAL MODE instruction:

- A) - Turn the [KEY-switch] clockwise to [PREHEAT] position until all LEDs illuminate.
- B) - Wait until the only [OIL PRESSURE] and [CHARGER FAILURE] LEDs remain illuminated. If the [PREHEAT] timer is set, the yellow LED [PREHEAT] will illuminate according to the setting of the potentiometer (adjustable on the back from 10 up to 60 seconds).
- C) - As soon as the green [ENGINE RUNNING] LED starts blinking, turn the key switch clockwise up to the spring-loaded momentary position. Hold this position until the engine starts. The [ENGINE RUNNING] LED will blink for a period of about 15 seconds. If the engine does not start within this period, the [STARTING FAILURE ALARM] will take place.
- D) - To stop the engine, turn the key switch fully counter clockwise (Off position).

NOTE1

In order to stop the engine, we recommend that you use a **FUEL SOLENOID** energized to run connected to the output #9 via a pilot (driver) relay. If you use a **STOP SOLENOID**, energized to stop, turn the potentiometer on the back fully clockwise and connect the **STOP SOLENOID** to output #8 via a pilot (driver) relay as indicated in the wiring diagram. The BE72 will provide a 60-second stop cycle for output #8. When you use the output #8 to drive a **STOP SOLENOID**, the **ALARM** function output will not be longer available.

Front panel description

[PREHEAT] yellow LED

This indicator illuminates during the Pre-Glow cycle (10 secs to 60 secs via the potentiometer setting on the back of the Be72).

[EMERGENCY] red LED

This LED blinks for 60 seconds, indicating a STOP cycle (if a STOP solenoid mode is used). It illuminates continuously when a shut down has been caused by the Emergency switch (input#3)

[CHARGER FAILURE] red LED

This indicator illuminates when you are going to start the engine, or if a Belt Break shut down occurs.

[OIL PRESSURE] red LED

This indicator illuminates when you are going to start the engine, or if an Oil Pressure shut down occurs.

[FUEL LEVEL] red LED

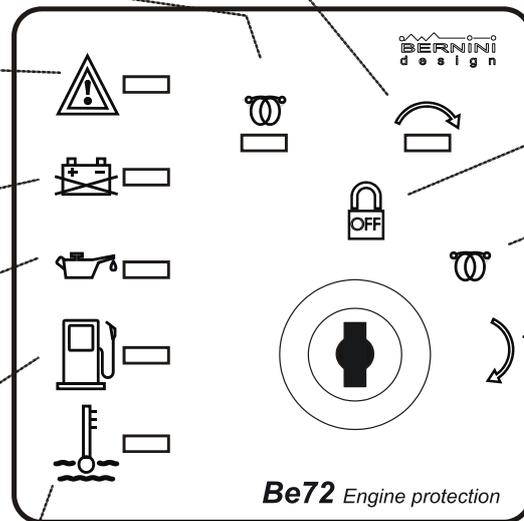
This indicator blinks when a low fuel condition occurs (a level switch should be connected to terminal #4). This LED illuminates continuously to indicate a shut down, if the switch has been closed for more than 5 minutes.

[TEMPERATURE] red LED

This indicator illuminates when an High Temperature shut down occurs (a temperature-switch should be connected to terminal #2).

[ENGINE RUNNING] green LED

This LED blinks for 15 seconds, indicating that the BE72B is ready to start the engine (you have to turn the key to start). If the engine does not run within 15 seconds, the 'Starting Failure' alarm will take place. This LED illuminates continuously if the engine runs.



[STARTING FAILURE ALARM] indication

These LEDs blink alternately (slowly) to indicate a starting failure alarm.



[OVERSPEED] indication

These two LEDs blink alternately (fast) to indicate an OVERSPEED alarm.

Typical Wiring Diagram and dimensions

