

DIESEL ENGINE PROTECTION MODULE



GENERAL DESCRIPTION

- This protection device has a complete frontal plate with a start key and optical signalling to protect the engine against general damages during the use. The control of parameters is granted by an electronic card developed by computer therefore optimised for the needed services. The professional spare parts used grant an insignificant percentage of mortality. The possibility of work is granted in extreme environmental conditions and in presence of mechanical vibrations.

DIMENSIONS in mm

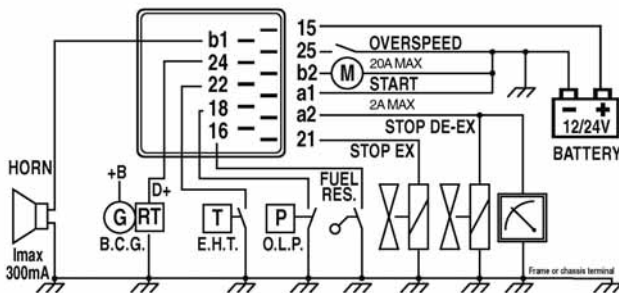


CONNECTION DIAGRAM

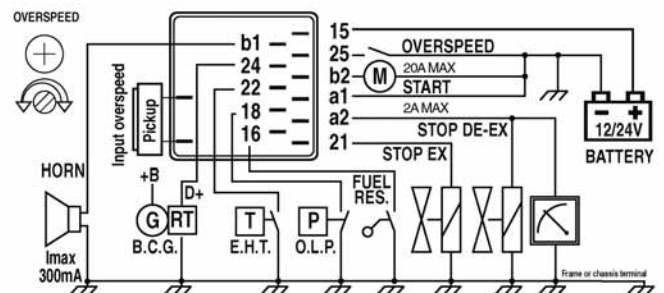
Starting contact current (key) on terminal b2	20A
STOP contact current (excitation / de-excitation)	10A
STOP time	30 sec
Initial time alarms	15 sec
Maintenance	none
Working temperature	-10°...+70°C
Threshold of electronic overspeed alarm	50...65Hz
Power supply by key on terminal a2: for auxiliary service, panel light and motor measuring instrument	Max 2A

CONNECTION DIAGRAMS

2RPM72 - Overspeed by external contact



2RPM72F - Overspeed by Pickup



- 15 - Power supply 12/24VDC (+ battery)
- b1 - Output acoustic alarm (battery voltage Max 300mA)
- 25 - Overspeed input by external contact (- battery) "OVERSPEED"
- 24 - Generator battery charger (+) "B.C.G."
- b2 - Output start (battery voltage Max 40A) "START"
- 22 - High engine temperature input (- battery) "E.H.T."
- a1 - Negative pole (- battery)
- 18 - Low oil pressure input (- battery) "O.L.P."
- a2 - De-excitation stop output (+ battery): use as alternative to terminal 21
- 16 - Fuel reserve input (- battery) "FUEL RES"
- 21 - Excitation stop output (+ battery): use as alternative to terminal a2

OVER SPEED BY PICKUP

Two other terminals are available on the opposite side of main terminals. A calibration trimmer is available too by a hole situated on one side of the case. It is used for the calibration of overspeed threshold's intervention point. Control of overspeed by voltage or by pickup must be added to the contact overspeed (terminal 25); it is enough that one of these overspeeds arrives to the alarm level to cause the stop of motor.

- 2RPM72 / 2RPM72F integrates the essential functions of Diesel engine protection and the possibility to execute the start shunting.

On the frontal plate the following elements are present:



KEY BLOCK:

It is a key with 3 possibilities:
 a) Unconnected device (OFF)
 b) Connected device
 c) Start



STOP PUSH-BUTTON:

It permits to stop the Engine in every condition

- Optical signalling group



FUEL RESERVE:

This optical signal lights up when the fuel is near to be exhaust; an acoustic alarm is immediately active until the alarm condition is removed.



BATTERY CHARGER:

This optical signal lights up when the battery charger is not excited therefore doesn't charge the battery.



OVER SPEED:

This optical signal lights up to inform that the external or internal alarm of over speed (centrifuge or other) occurred. To activate the alarm, one of the two conditions is enough. Immediately, a cycle of automatic temporised stop is active (available in excitation or de-excitation way); an acoustic permanent alarm is active. The high engine temperature and low oil pressure alarm are excluded.



HIGH ENGINE TEMPERATURE:

To inform that the engine thermostat has noticed an anomaly.

This alarm situation is memorised and immediately, a cycle of automatic temporised stop is active (available in excitation or de-excitation way); an acoustic permanent alarm is active. The over speed and low oil pressure alarms are excluded.



LOW OIL PRESSURE:

This optical signal lights up to inform that the oil indicator has noticed an anomaly. This alarm situation is memorised and immediately, a cycle of automatic temporised stop is active (available in excitation or de-excitation way); an acoustic permanent alarm is active. The over speed and high engine temperature alarms are excluded.



ON (POWER SUPPLY):

This optical signal lights up to inform that the device is working



IMPORTANT NOTE:

FLASHING LED (during start phase) =

Not activated protections

Eventual alarm inputs flashes, but don't stop the motor protections active after 15 seconds

FIXED LED (after start phase) =

The sole activated alarm (after the last flashing of the Led) is the overspeed alarm that causes

the immediate motor stop. Eventual alarms of HIGH ENGINE TEMPERATURE and LOW OIL PRESSURE are (in these 15 seconds) not activated. They become active in a second step only.

- The operation of 2RPM72 / 2RPM72F is:

- When it is activated (first position of key on the right), an automatic lamps test, acoustic alarm and internal diagnosis cycle is effected (test time 2 seconds about). After the test the device is active. The ON signal (power supply) and other active alarm inputs start to flash but without to stop the engine. Eventual "Fuel Reserve" signalling causes the action of the acoustic alarm. After this phase the ON led become fix (alarms are qualified after 15 seconds excluding the overspeed alarm for which the motor stop is immediate). In this phase (fixed green light) the current is injected on terminal +D of alternator to permit the excitation. If, during the working, a stop engine happen the green led start to flashes quickly and one of the red figure will be light on.
- When the engine is started, the excitation circuit of alternator battery-charger is excluded. HIGH ENGINE TEMPERATURE, LOW OIL PRESSURE and OVER SPEED ALARMS are operative and 2RPM72 / 2RPM72F is in surveillance phase.
- If an alarm is activated (example: LOW OIL PRESSURE) the correspondent lamp lights up with fixed light, the alarm situation is memorised, the external acoustic alarm is active. An engine stop cycle is also active (stop time is 30 seconds, available in excitation or non excitation way)
- If is powered and the start is not effected, it remain in stand-by for 60 sec (ON lamp flashing) and after this time, automatically will control the engine and will active the eventual alarms present.