

Engine Monitor CP310F 12-24VDC

A compact, easy to install electronic fail safe monitoring system designed for use with trucks, buses, boats, agricultural machinery and stationary engines. The CP310F has a total of 6 sensor inputs, 4 dedicated inputs that can monitor the following and also 2 Spare inputs.

1. Spare Aux 1
2. Oil Pressure
3. High engine temperature
4. Alternator Failure (Belt Breakage)
5. Loss Of Coolant Water
6. Spare Aux 2 (Normally = Pump Loss of Prime)

The Monitor sensor inputs are designed to be fail safe. That is, any broken wire, loose wiring or faulty sensor contacts will register as a fault allowing investigation and correction.

The monitor is powered from the Key switch. When turned on, the following sequence occurs:

Output Relay On

The output relay energises and closes its contacts. This can be used to run a fuel solenoid Energise To Run coil.

Note: Relay contacts are rated at 24VDC 10Amps resistive maximum.

An inline 10Amp fuse should be fitted.

Time Delay Starts

A built in time delay bypasses the sensor circuits to allow for the engine to start. All LED's on the front panel will flash to indicate that the timer is timing.

Time Delay Completed

LED's will stop flashing and providing the input sensor circuits are at 'normal' operation all LED's will remain off.

Sensor Fault

The Monitor gives an audible warning when any one of the six inputs has detected a fault. Only the first fault will be indicated and held in the memory. Subsequent fault conditions will not be registered.

Alarm Silence

The Key Switch controls the indicator LED's and the audible alarm, when the power is turned off the alarm is silenced and the LED will go out. The fault conditioned is stored in the monitors memory.



Fault Recall

To recall first fault:

- Press and hold Recall Button while turning on key switch.
- All LED's will flash once, now release the recall button.
- After 1-second delay, all LED's will flash twice except No 1 LED, this indicates the first fault is to be shown.
- One appropriate LED will then come on and stay on; this is the first fault from memory.

To recall second fault from memory:

- Press Recall Button again.
- All LED's will flash twice except No 2 LED; this indicates that the second fault is to be shown.
- One appropriate LED will then come on; this indicates the second fault from the memory.
- Keep repeating step 2 for an indication of the fault causing the last 3-6 shutdowns.
- To return the Monitor to normal operation, turn the key switch off and back on.

Tips

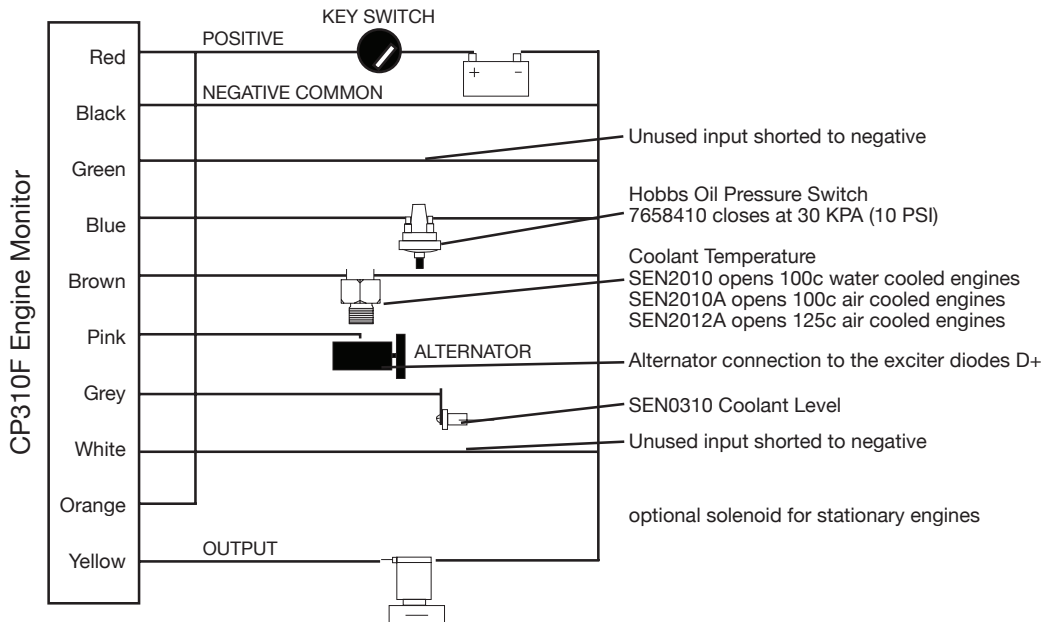
- Ensure that there are good electrical connections between all points to ensure smooth operation.
- Keep sensor wiring away from electrical motors, solenoids and ignition systems, as they can cause interference.
- Make sure that the coolant level sensor is a single wire direct to the probe, and that it is kept away from motors, solenoids and ignition systems as it may cause interference. Also make sure that if you are connecting a coolant level probe to plastic tank, there is ground connection to the tank. If not, you will need to fit a second probe and wire to ground
- Unused sensor inputs must be wired to a permanent positive or negative to simulate a permanent "good" condition, i.e. If not wiring spare 1 and spare 2 then leave DIP SW1 and DIP SW4 in the ON position and make sure Green and White are not connect to anything.
- The Pink wire should connect to D+ on the positive side of a standard charge light. If this connection is not available you can bypass this sensor by wiring Pink to a positive connection such as the fuel solenoid (Yellow Wire).

Specifications:

Dimensions	115 x 90 x 56mm deep
Voltage	12/24VDC - negative ground
Current	100mA at 24VDC - no load
Contacts	24VDC 10Amp resistive



Wiring Diagram



Connections

Terminal connections are as follows...

TB1,1	Red	Positive 12/24VDC (key switch)
TB1,2	Black	Negative or Ground
TB1,3	Orange	Relay Common
TB1,4	Yellow	Relay Normally Open
TB2,1	Green	Spare 1 (DIP Switch 1)
TB2,2	Blue	Oil Pressure (DIP Switch 2)
TB2,3	Brown	Temperature Switch (DIP Switch 3)
TB2,4	Pink	Alternator/Charge (To D+ Or +Ve to disable)
TB2,5	Grey	Water Level (To water level probe or Gnd to disable)
TB2,6	White	Spare 2 (DIP Switch 4)

Note: There is a 4 way DIP Switch that is located inside the unit, which changes some of the sensors (indicated above) as shown:

OFF - For Normally Closed to Ground sender, open on fault i.e. Closed when running and OK.

ON - For Normally Open sender, switch to Ground on fault. i.e. Open when running and OK.

