

## DCS 497 MANUAL START UNIT

### DESCRIPTION

The DCS497 engine is designed to manually start and stop the engine via a key switch. The use of these controllers increases reliability whilst eliminating control panel wiring. The unit provides automatic shut down of the engine and gives true first up fault indication. These units are self contained in a robust plastic housing of IP 56 rating. The clear lid is spring loaded to maintain the IP 56 rating.

### OPERATION

The unit is activated by selecting the **RUN** position. This will activate the protection hold off timers and energise the fuel solenoid relay. At this point the **CHARGE FAIL** led will be illuminated but will be extinguished as soon as the charge alternator is charging at the correct voltage.

A further spring loaded position marked **START** will energise the starter motor solenoid direct from the key switch and start the engine. The engine will now be running.

To stop the engine return key switch to **OFF** position.

Should a fault condition arise whilst the engine is running, a red led associated with that input will light and the fuel solenoid relay will de-energise shutting the engine down. To reset a fault, turn the key **OFF** then turn on again for one second.

### KEY SWITCH WITH START-LOCKOUT MECHANISM

To prevent accidental engagement of starter.

**OFF:** In this position DC supply is removed from the unit and any latched faults are reset.

**RUN:** Normal position when the engine is running activates the fuel solenoid relay, arms the inputs and outputs a positive voltage to charge alternator (current limited).

**START:** A spring loaded position that automatically returns to run position when released. Activates the starter motor solenoid when held in **START** position.

### FAULT INPUTS

**LOP:** (Low Oil Pressure)

Controlled by the protection hold off timer (TD1 0-30 sec). Requires negative feed from low oil pressure switch. Switch closes when oil pressure is too low.

**HET:** (High Temp)

Controlled by the protection hold off timer (TD1 0-30 sec). Requires negative feed from high temperature switch. Switch closes when temp is too high.

**AUX 1:** Controlled by the protection hold off timer (TD2 0-10). Selectable for 0-10 sec by Link A. Requires negative feed from alarm switch.

This input is ideal for water pump protection when long delivery pipes are used and pressure build up is too slow.

**AUX 2:** This input is NOT controlled by hold off timers. For an immediate shut down when a negative input signal applied to this input.



Figure 1 – Manual Start Unit

## OUTPUTS

- FS:** +ve 15 amp max for fuel solenoid. Protected by internal fuse.
- SM:** +ve from key switch to energise starter motor solenoid. Protected by internal fuse.
- RUN:** +ve output 2 amp max, when key switch is in run mode.
- DF+:** When the key switch is in the run position, a battery voltage is fed through an internal current limited circuit to excite the charge alternator. On shut down either via a fault condition or switching the key to off position, this output is removed.
- FAULT:** Alarm output max 300 mA -ve

This is common fault output for the four inputs can be used to energise a remote fault relay for common fault monitoring.

## SPECIFICATIONS

- DC Supply:**
- 12v (8-16v)
  - 24v (18-33v)
  - Protected against reverse polarity
- Operating Temp. Range**
- -20 to +70°C
- Fault Indicators**
- 5 x LED
- Fuel Solnd Relay outputting Contacts**
- 15 Amp max
- Starter Motor Solnd Supply**
- 15 Amp max
- Common Fault Output**
- 300mA -ve max
- Enclosure**
- Heavy Duty ABS, UV-Resistant
- IP Rating**
- IP 56
- Colour**
- Grey
- Weight**
- 0.8 Kg
- Size**
- 195h x 95w x 110d

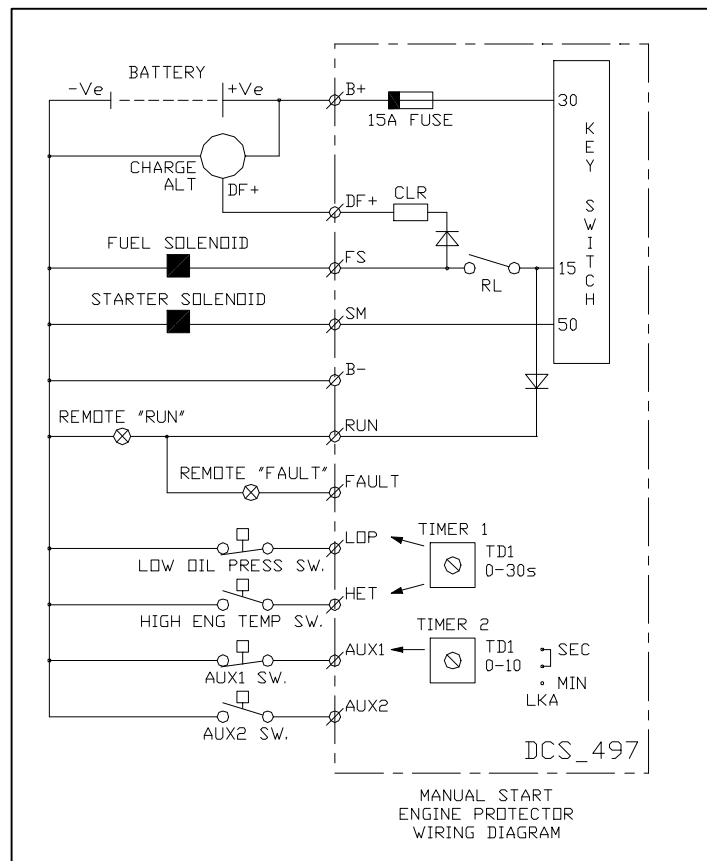


Figure 2 - Manual Start Engine Protector Wiring Diagram