

# AUTOMATIC ENGINE CONTROL FOR DIESEL ENGINES WITH GLOW PLUGS

The ECU-9910® engine control provides complete automation and safety monitoring of a diesel engine. The ECU®-9910 controls the starter, fuel, and glow plugs thus completely taking the operator out of the picture. A built in speed switch controls both starter disengagement and overspeed protection.

**ECU®-9910**

**ONE VERSION FOR  
12 AND 24 VDC**

**APPLICATIONS:** Generator Control Panels, Automatic Engine Systems

## FEATURES:

- Glow Plug Output with Delay Timer
- Loss of Magnetic Pickup detection during both cranking and running
- Single or Multi-crank modes are field adjustable
- Built in speed switch
- Grounded or positive HWT/LOP inputs
- Low oil pressure and high water temp override during cranking
- Wide temperature range -40C to +85C
- Epoxy encapsulated module for excellent field reliability
- LEDS with auto/manual lamp test



## ECU®-9910 COMPLETE AUTOMATIC ENGINE CONTROL

The ECU®-9910 automatically cranks, starts and monitors an engine for Overcrank, Overspeed, High Water Temperature and Low Oil Pressure. Any crank timing sequence is accomplished by using the multiple or single crank modes in conjunction with the timer adjustments. A built in speed switch uses a magnetic pickup to monitor engine speed for crank disconnect and overspeed. The bypass timer/logic assures Low Oil Pressure and High Water Temp override during the crank period and an additional adjustable period after crank disconnect. The ECU®-9910 expands to as many faults as required by using the Engine Alarm Input.

The ECU®-9910 monitors the Magnetic Pickup signal for problems during both cranking and running. If a problem is detected the engine will shutdown and the Overcrank and Overspeed LED's will both turn on.

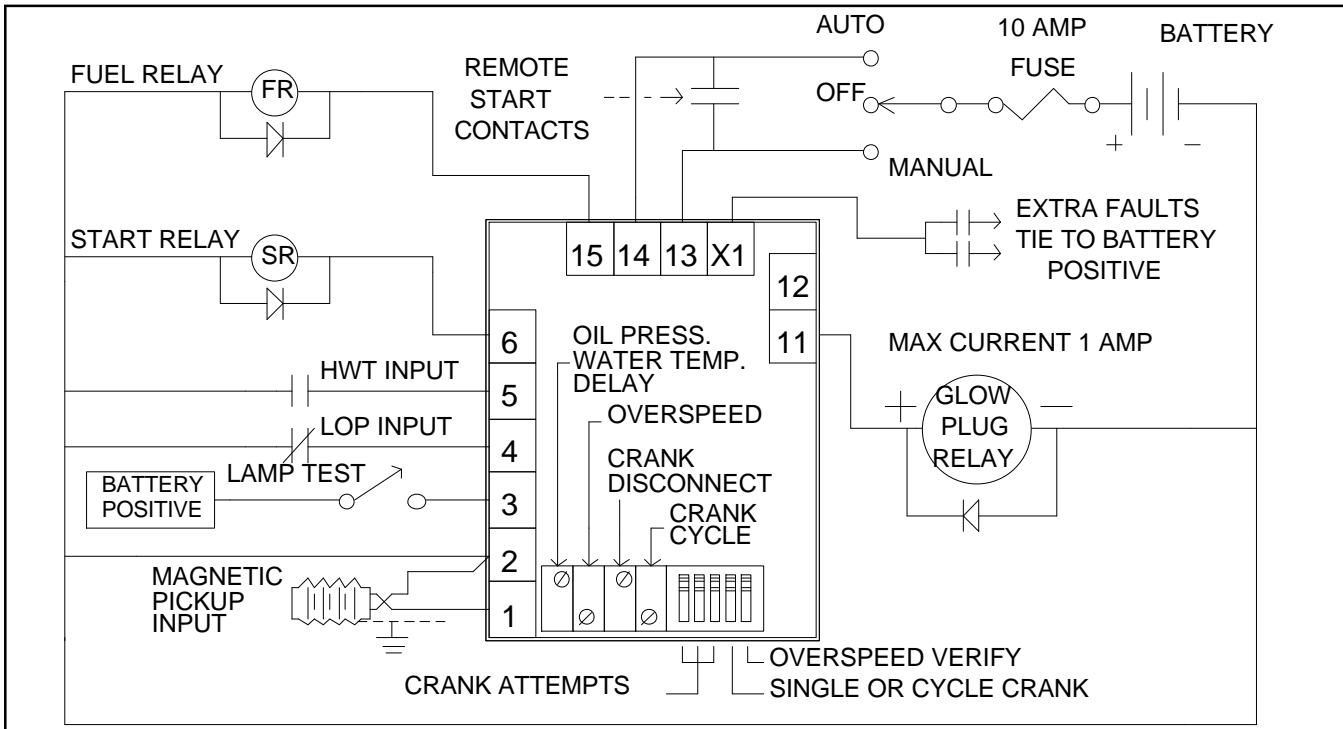
The ECU®-9910 has an output for controlling the Glow Plugs. When initiating the crank mode engaging of the starter is delayed and the glow plug output is turned on for a fixed time of 10 seconds. During cranking this glow plug output is then turned off. If the multiple crank mode is selected then the glow plug output is turned on for each rest cycle. The glow plug/rest cycle time will be the same as the crank cycle time adjustment.

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ENGINEERING CONCEPTS UNLIMITED, INC.

P.O. BOX 250 - 8950 TECHNOLOGY DRIVE - FISHERS, IN 46038

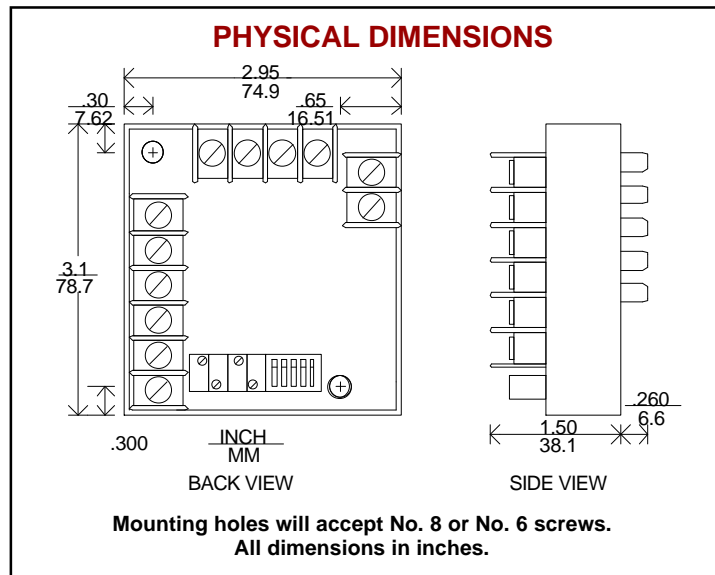
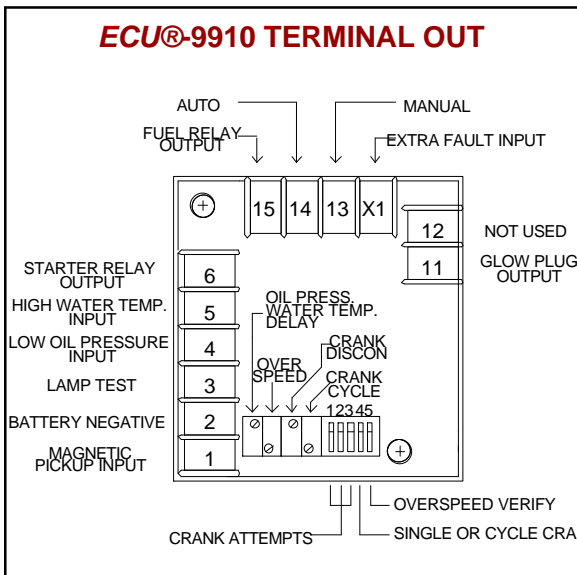
Voice: 317-849-8470 Fax: 317-849-6475 E-Mail: sales@ecu-engine-controls.com

**SAMPLE ECU®-9910 APPLICATION:**  
**AUTOMATIC ENGINE CONTROL OF DIESEL ENGINE WITH GLOW PLUGS**



The above illustrates the ECU®-9910 engine control with an energized to run engine. Placing the control switch in MANUAL or closure of the Remote Start Contacts while in AUTO initiates the Crank mode. The Fuel and Glow Plug Relays are energized for 10 seconds then the Glow Plug Relay is turned off and the Starter Relay is energized causing the engine to begin cranking. During a rest cycle the Starter Relay is turned off and the Glow Plug Relay is energized. If the engine does not start in the allotted time, as determined by the Crank Cycle Adjust and Dip Switch setting, the Overcrank Fault occurs, and the Fuel, Starter, and Glow Plug Relays are turned off. If during cranking the internal speed switch detects a speed equal to or above the Crank Disconnect Adjustment Setting the Starter, and Glow Plug Relays are turned off, the LOP/HWT delay timer is initiated. After this delay period if the LOP or HWT switch closes the engine will shutdown immediately. If the internal speed switch detects a speed equal to or above the Overspeed Adjustment Setting the engine is shutdown immediately. To stop the engine or to clear a fault condition place the control switch in the Off position. If the signal from the magnetic pickup is lost during cranking or running the engine will shut down and the Overcrank & Overspeed LED's will both turn on.

- SPECIFICATIONS:**
- VOLTAGE RANGE - 9 TO 28 VOLTS
  - MAGNETIC PICKUP - 250 TO 8500 HERTZ
  - STARTER AND FUEL OUTPUTS - 5 AMPS MAX
  - GLOW PLUG OUTPUT - 1 AMP MAX



**ORDERING INFORMATION:**  
**ORDER BY SPECIFYING: ECU®-9910**

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