ECU® Design Guide for Speed Switches

Refer to Speed Switch application drawing when using this guide.

Topics

What does an ***ECU***® Speed Switch do for me?

The Speed Switch depending on the model and systems design can...

After the start request the control can then

- Crank the engine
- Disconnect the starter at the proper speed
- Monitor the engine for overspeed fault condition
- In the event of overspeed perform shutdown f

What does it sense and control?

The engine control depending on the model and systems design can...

Sense …

- Magnetic pickup (for speed sensing)
- Start switch
- Remote start contacts
- Other types also

Control...

- Starting pilot relay (energizes starting solenoid)
- Fuel solenoid valve

What kind of sensors are used on the engine?

The speed switch uses

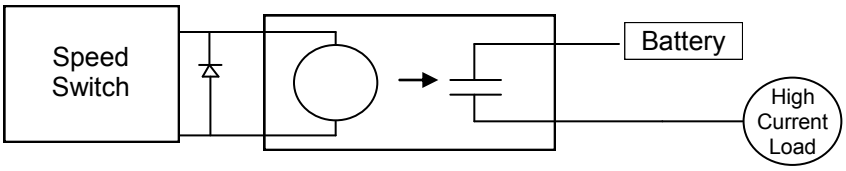
Magnetic pickups

This is a special type of sensor that when installed can measure proximity to a flywheel tooth. As the flywheel rotates the magnetic pickup generates a voltage that is proportional in frequency to the actual engine speed. This allows the engine control to monitor engine speed.

What are pilot or slave relays?

Pilot or Slave relays

Many of the valves and solenoids the speed switch operates have high currents and it may become necessary to “buffer” the control against harmful currents.



Pilot or Slave relay

The Pilot or Slave relay simply “relays” the signal to the high current load. The input to the Slave relay can be small but it can control currents up to 100’s of amps. A diode is shown in the above illustration. This is a low cost preventative that adds years of useful life. The diode channels the surges of the slave relay into a harmless dissipation as opposed to causing arcing in the control contacts of the engine control.

By placing the pilot relays close to the loads other electrical benefits occur when the system is in an environment where electrical interference should be minimized.

Are there any application drawings available?

Many of the different flyers available on the website have various drawings showing the use of the speed switches with timers. Look at the various drawings for ideas.

ECU® can be reached for special applications that we may already have drawings for.

We will endeavor to assemble all the drawings into a fixed gallery that can be emailed to our customers on a project by project basis.