

# Wiring instruction for external fuel solenoid relay for Celect and Celect Plus

Please know that DSO Industrial LLC makes no claim of effectiveness or result, nor accepts any responsibility from direct or indirect usage of this product. There are wiring faults that may still arise that will bypass this circuit and damage the ECM. This is a modification from OEM.

## PROCEED AT YOUR OWN RISK!

Make sure your ECM is completely powered off. It is highly recommended to remove the ground cable from the battery before proceeding. All connections should be soldered, or use the highest quality water tight connectors possible.

### Materials needed:

- 5 pin 30/40 amp automotive relay; must be of HIGH QUALITY, sealed (for under-hood use), be equipped with “negative spike suppression”, and have a coil draw of no more than .25amps @ 12VDC.
- Relay harness for above relay.
- 2x: Automotive type fuse holders. Be sure they are rated for under-hood use.
- 1 fuse @ ½ amp, 1 fuse at 3 amps. Must fit in above fuse holders.
- Round wire connector sized to fit on the fuel solenoid post.
- Round wire connector sized to fit a good grounding point.
- 14-16 ga automotive wire to tap into a point of +12VDC power from the truck. This may be a key on or constant power source.
- Appropriate wire connectors, based on the methods you use.
- It is a good idea to use heat shrink tubing where possible.

### Theory of operation:

The theoretical purpose of this circuit is to isolate the ECM from the event of fuel solenoid failure, and provide for a fuse between the ECM and relay that is at or below 50% of the ECM's rated amperage capacity for this circuit.

### Wiring:

- Remove the wire from the fuel solenoid post that comes from the ECM. Attach a fuse holder and the ½ amp fuse.
- Run a power wire from a source of +12VDC up to the work area. At the end of this wire, attach the other fuse holder and the 3 amp fuse.
- On the relay harness, attach as follows:
  - Remove the middle BLUE wire (relay pin 87a). It is not needed, and may cause a short if left attached. A firm pull should pull it free from the relay harness. Be sure the connector comes with the wire. It will help to remove the relay from the harness before removing the blue wire.
  - Attach the RED wire (relay pin 86) to the now fused wire coming from the ECM.
  - Attach the WHITE wire (relay pin 85) to chassis ground.
  - Attach the BLACK wire (relay pin 30) to the fused wire coming from a +12VDC power source.
  - Attach the GREEN wire (relay pin 87) to the fuel solenoid post.

### Notes:

- In the event of a NO START (but EP lights ARE cycling), check these fuses and the relay. These will NOT come up as steps outlined by Cummins, so make sure you mechanic is aware of this relay mod.
- **If the .5 amp fuse is blowing, the relay may be defective, or wiring is not correct.**
- **If the 3 amp fuse is blowing, the fuel solenoid is likely shorted (defective), and the relay did its job! You will NOT get the traditional fault code 254 for this, but the engine will simply die and NOT start.**