

## CAT ESCM Removal and Retrofit

### Replacing the Engine Status Control Module on CAT EIS and EIS/AFRC Engines

- All engine functions previously managed by the ESCM are addressed by the Altronic DE-3000 in the new retrofit system inclusive of:
  - Pre/post lube
  - Fail-safe starter control
  - Fail-safe ignition on request to the EIS module
  - Fail-safe fuel valve on request
  - K or J type thermocouple engine oil pressure and water temperature monitoring
  - 0-5 volt or 4-20mA sensor engine oil and manifold pressure monitoring
  - Altronic magnetic pickup engine RPM
- Additional safety/monitoring protection available
- Quick field retrofit uses panel insert or new panel
- Optional umbilical cable available to replace original CAT umbilical cable on EIS engine systems

Caterpillar has discontinued the support and availability of the original ESCM (Engine Status Control Module), also known as the remote panel. The new replacement product, OCP (Operator Control Panel) is much more expensive. The ESCM was widely used on most 3500 EIS and EIS/AFRC engines from 1995 to 2006, leading up to the introduction of the ADEM 3 series 3500 engines.

The ESCM primary functions were to offer engine monitoring protection of the following:

- Engine water temperature
- Engine oil pressure
- Engine RPM

Additional functions were:

- Fuel valve control (GSOV)
- Ignition on command to the Electronic Ignition System (EIS)

The ESCM also acted as a translator between the primary unit control panel and the EIS module. If the primary panel requested a shutdown, it would do so by sending a ground signal to the ESCM. The ESCM would then remove a ground signal from the EIS module and the ignition system would turn off, resulting in an engine stop. This arrangement was not fail-safe when it came to monitoring the compressor safety systems.

The Altronic DE-3000 can completely replace all original functions of the ESCM and act as a point of direct communications to the EIS module. A completely new panel or an insert into the existing panel enclosure is available at a price point less than the OCP system. This offers new system upgrades for the complete compressor units, not just the engine, all in a fail-safe configuration.

New panel inserts or complete panel enclosures are available for quick field retrofit applications that take, on average, one day to install. An optional umbilical cable is also available from Altronic to replace the original CAT umbilical cable on EIS engine systems only. This increases reliability and installation times.

The CAT remote panel that originally housed the ESCM can be completely removed from the unit on EIS applications. The original canon plug connector for the DDT or ET software can be reused and mounted inside the new panel or insert with pre-cut mounting locations.

The CAT remote panel must remain in place for applications that were equipped with the EIS/AFRC option, as the ECM (AFRC module) remains. Kits for these applications include a cover plate to be installed in place of the original location of the ESCM.

Installation is quick and simple with the supplied Altronic sche-



matics. All functions of the ESCM are placed under the control of the DE-3000. This includes the following:

- Pre/post lube
- Fail-safe starter control
- Fail-safe ignition on request to the EIS module
- Fail-safe fuel valve on request
- K or J type thermocouple engine oil and water temperature monitoring
- 0-5 volt or 4-20mA sensor engine oil and manifold pressure monitoring
- Altronic magnetic pickup engine RPM

Additional safety/monitoring protection can also be added per custom request. Examples include:

- Main bearing temperature
- Cylinder exhaust temperature
- Pre/post catalyst temperature
- Manifold air temperature

With the elimination of the ESCM, the new main control panel takes direct control of all engine functions, and the translator is removed. This results in faster troubleshooting, via indicator lights on the face of the new main control panel, and the elimination of the "O" series diagnostic codes generated by the ESCM.

Timers, control setpoints and safety setpoints are now configured through the DE-3000 with the HMI (head unit) or the free DE-3000 terminal software.



**FINISHED PANEL**



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