

# PowerCore<sup>®</sup> MPC-10/TEC-10 Software Release

Enovation Controls continues to roll out improvements to software for the Murphy PowerCore MPC-10 and TEC-10 controllers. The latest software release (**Application 2.9.10051; Configuration 2.9.23042; Config # 2.9.20024**) provides an enhanced user experience with several new features. Enovation Controls will continue to provide enhancements to the controllers' software periodically throughout their life cycle. To take advantage of the new features in this update on previously purchased units, please download the latest release of PowerVision for Controllers configuration tool (**2.9.23044 or later version**) and load the new firmware into your current controller. This may require additional Murphy equipment such as the MPC-10 USB programming harness (MPC-10 Only) or an ECOM communication dongle, which are available for purchase for programming purposes.



This software update provides new features including:

- **LED Indication Updates:**
  - Updated to turn off red LED indicator when controller is in Standby to reduce power consumption.
  - Updated logic to meet Cummins Electronic Engine requirements for dual lamps scenario.
- **Engine Updates:**
  - **JCB Aftertreatment Lamp Update:**
    - Update MIL lamp to use malfunction from DM1 lamp for JCB Engines.
    - Updated lamp behavior to meet particular JCB test requirements.
  - **Yanmar Tier 4 Engine Support:**
    - Corrected page views when regeneration is needed on a Yanmar Final Tier 4 engine.
    - Added new messages for user pertaining to engine aftertreatment regeneration.
  - **Scania Engine Support:**
    - When not using the Enovation Controls Scania MIH the controller would bump the starter when keyed on by sending a CAN message on power up. This bug was introduced in version 2.9.
  - **John Deere Tier 4 Engine Support:**
    - Corrected an issue in version 2.9 with regeneration messaging sent from the controller to the ECU for regeneration purposes.
  - **Deutz Engine Support:**

- In version 2.9 when Deutz was selected as the engine manufacturer the Tier 4 screens would show even when Tier 4 was not selected as the Emission Type.
  - **Kubota Gaseous**
    - Squashed a bug when Kubota Gaseous was selected in engine manufacturer that affected throttling of engine.
- **New Menu Item in Engine Settings, (RPM Speed Calibration):**
  - This menu item is a new feature to the controller allowing a user to run an engine at a known RPM then back into the tooth count of the flywheel or pulses of the alternator that doesn't have this information at hand for their engines. Speed source must be Alternator or Magnetic Pickup to see this menu item.
- **Torque Control Logic:**
  - Updated logic for saving values for the torque control settings.
- **Event History:**
  - Updated Event History to not show SPN 0 FMI 0 on History page.
- **Menu Text Change:**
  - Changed the Text Description of menu item "Controller Only" to now show "ECU Only" for the J1939 Shutdowns Menu. The ECU Only setting will still allow internal fault shutdowns, but not disengage the ECU Enable output or send a CAN shutdown message to shutdown the engine when a Red Lamp status is broadcast over the J1939 CANbus network.
- **Spindown State Logic Change (ECU Error Fault):**
  - Squashed a bug where the controller could see a CANbus error during shutdown. This was corrected by making a minor change in the logic to not see a CANbus error during the spindown state.
- **Starting from Modbus During Standby:**
  - Updated the Modbus Start logic so the Start write would not need to be sent twice. This bug would allow the controller to wake from standby and require another start write to start the controller. This now functions correctly where one start write will wake the controller from standby and begin the start sequence.
- **Analog Input Types 1 & 2:**
  - Updated Analog inputs 1 and 2 to show Engine Temperature in place of Coolant Temperature.
- **Digital Input Alerts:**
  - Squashed a bug in the digital inputs. Issue: while digital input 1 had an active warning other digital inputs would not trigger a shutdown.
- **MPC-10 USB Loading Page:**
  - Updated page to center the file selection area.
- **Throttle Updates:**
  - INC-DEC Throttle: Updated logic to allow quicker ramp rates during manual throttling the engine by the INC/DEC.
  - Added a new Manual Throttle Type in the throttle menu to allow the setup and use of a Thomson CAN Throttle Actuator. The controller will use J1939 to control the throttle position similar to the way the FET outputs control the Murphy ATO3069 mechanical throttle actuator. This change uses the Inc/Dec Rates as gain in place of RPM per second. Two new menu items were also added in the throttle menu to accommodate setup of the actuator (Set Throttle to Zero and Throttle Direction).
- **Shutdown in Auto:**
  - When in auto and a shutdown occurs, the software is designed to push the controller from auto mode into manual mode for safety.

- **Real Time Clock:**
  - Squashed a bug introduced in version 2.9 where the clock start/stop would bypass the stop command after starting.
  - Squashed a bug introduced in version 2.9 where the clock start/stop would wake up the controller from standby but would not actually start from standby.
- **Modbus:**
  - Added 2 new modbus parameters to allow the controller to provide a system the J1939 DM1 SPN and FMI. Registers 40500 and 40501 are the home to these 2 new registers.
  - Added new bit on register 40010 Bit 2 for Speed Signal Loss Shutdown.
  - Changed resolution of Level parameters in Modbus Map (50.5 will read 505 when the register is polled)
    - Register 40011; Current System Level
    - Register 40038; System Level Engine Start (Auto)
    - Register 40039; System Level Engine Stop (Auto)
    - Register 40040; System Level Maintain Value (Auto)
  - Squashed a bug in modbus register 40210 to look at the correct DEF Level for Volvo engines.
  - Removed selection Local Display from Modbus selection.
- **J1939 Shutdowns:**
  - When selecting ECU Only for J1939 Shutdowns the controller would recognize the ECU fault code and not allow the engine to crank via the controller. This is fixed and the controller will crank and start the engine if the engine allows.
- **CAN Baudrate:**
  - Added a selection in the Communications menu to allow the change of the J1939 CAN Baudrate. This was previously set to 250Kbs and not selectable for change.

### PowerVision Programming Update

- **PowerVision for Controllers:**
  - Squashed a bug in version 2.9.23029 release that wouldn't allow a saved change in PowerVision for Controllers for the TSC1 address in version 2.9.21075. Changing the TSC1 address continued to work correctly when setting locally from the user interface.
  - Squashed a bug that would not allow return key to function in Description box for notes.
  - Squashed a bug that would not allow text string changes to load on the controller. The string appeared to change in the software, but not in the controller once loaded.

### How to Purchase:

Part Number	Description
40-70-0494	PowerCore MPC-10 Controller
40-70-0495	TEC-10 Controller Panel
40-70-0503	ML1000-4X Controller Panel

### Literature:

- [Webpage](#)
  - [TEC-10](#)
  - [MPC-10](#)
- [Support Site](#)
  - [TEC-10](#)
  - [MPC-10](#)

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