Transmission Controller Manual

TCM432 Controller with UI-240 OLED Programmer & Monitor

IMPORTANT INFORMATION keep in a safe place!

Designed to be used on Chrysler or Dodge electronic control transmissions
Models 42LE FWD Transaxle and 42RLE RWD vehicles

Choosing a good location for the controller is important. It was not designed for under hood, motor compartment or wet location installation. It should be installed in the passenger compartment of the vehicle. Recommended locations are under the dash or in a console. It is also good to be out of direct sun light. If under dash installation is chosen be sure it is not in direct contact to the fire wall that is exposed to the engine or exhaust system heat. Electronics last much longer when kept in a cooler location. Keep in mind you have wires that go to the transmission and the fuse box. The transmission harness may need splicing in order to reach the connectors. Any splicing should be done in a professional manner with the appropriate size wire, all connections soldered and wrapped properly with tape or heat shrink and then covered with tape or wire loom. Shorts or faulty connections can cause radical behavior and may damage the controller or transmission. **Warning! Damage caused by shorts, abuse or static discharge are not covered by the warranty**.

1: Connect the ground and power cable first.
The 12V- Negative **(BLACK)** must have a good connection to the vehicle chassis or Negative wire from the factory wiring harness a minimum wire size of #18 is recommended. Without a good ground the controller will not function properly.

The **12V + Positive 18ga (PINK)** should be connected to the **fuse block** on the ignition switch side so that the power is switched OFF and ON with the Ignition. It should only be connected to a 10 AMP fuse DO NOT use a fuse larger then 10 amps.

2: Wiring the transmission connector can be done next.
See the included wiring diagram.

3: **Making the connection to the VSS (vehicle speed sensor).**
The controller has 2 wires that are used to connect a VSS sensor. The wires coming from the controller are color coded to match a Dodge sensor.
(GREEN and BLUE twisted and foil shielded pair)
This signal is the primary signal to Controller and is critical for the controller and transmission operation.

4: Torque Converter Clutch (TCC) over-ride switch.
The (TCC) can be unlocked with this input by a switch connected to the brake peddle or relay to the brake light circuit. When a GROUND signal is applied the TCC will be disabled.

This must be a **momentary** type switch. It should be connected to chassis ground on the other side of the switch so when applied it momentarily Grounds the wire going to the controller. The TCC will also automatically disengage under a set MPH or when the transmission down shifts. The speed for which it disengages is adjustable in the setup menu on the controller. This switch is used to disengage the TCC when the brake is applied. This is considered a safety feature and we suggest it be used.

5: TCC Manual engage switch.
The TCC can be turned ON as needed with this switch. This must be a **momentary** (pushbutton) type switch. It should be connected to chassis ground on the other side of the switch so when applied it momentarily Grounds the wire to the controller. It is used to engage the TCC at lower speeds than the auto engage speed is set at. If this signal wire receives 12V it will damage the controller and is not covered by the warranty.

6: **UI-240 Mounting and Cable.**
The UI-240 has a single cable with a Telco 8 pin plug that provides the power and data. It receives power from the TCM432 controller. The UI-240 has several options for mounting. It should be carefully mounted using the included tilt mount, optional 2" Gauge mount or directly mounted with double sided tape. The cable can be ran directly out from the back if using the tilt mount or 2" mount or can be placed in the enclosure slot on the back to allow it to be flush mounted.

Initial Setup:
The controller must be setup to function correctly. To set the primary configuration;
1: Press the small (LEFT) button on the UI-240 LCD module. You should see the **Lock Code** entry screen. The default code is **10** and you can change it once you are in the settings menu. All settings are made with the UI-240 LCD module and are saved in the nonvolatile EEPROM memory.
2: Use the UP or DOWN buttons to scroll through the menu and make the settings.
Note: *The four buttons will have different functions depending on the task or menu. you will see the function indicated directly above the button on the screen.*

Press the **MENU** button for setup menu

Menu Items Screen #1

MODE : *NORMAL , SPORT , TRACK* - Each mode can be set individually (Note: Before changing to another mode make certain all the settings have been adjusted for that mode. The settings for each are made and saved while the mode is selected.) Default is NORMAL.

CODE : 10 to 200 Screen Lock Code setting. This is to prevent someone from changing your settings! Default = 010

TRANS : *This is for future variations and does not have any function in this version.*

Scroll to **Next** and press the **Select** button for the next setting screen

Menu Items Screen #2

VSS : followed by 2 digit reading "**Set MPH Reading**"
High setting: = **40** Lowest setting: = **2** (default is **20**) Note: This number divides the pulses, so a higher number will lower the MPH on the screen.

This setting is critical to the correct function of the controller and the other settings.
It should be calibrated with an outside reliable source such as a GPS or a smartphone GPS application. Either should be accurate enough to make the controller function satisfactory. We suggest setting this to match the GPS at 35 to 40mph if possible. This should be done with a second person making notes and comparing the readings for safety reasons.

ISS : This setting and data is not currently used.

MTRC : Converts the MPH on the screens to metric readings KPH

Scroll to **Next** and press the **Select** button for the next setting screen

Menu Items Screen #3

Selecting a gear will open a sub menu for that highlighted gears settings.

1st: 1st to 2nd gear UP shift MPH base setting. In *Auto Shift* mode it will UP shift at this speed under low throttle.
TPS % : This adjust how much the throttle position effects or extends the UP shift. The higher the percentage the greater the effect or the longer it will take it to shift under hard throttle.

2nd: 2nd to 3rd gear UP shift MPH base setting.
2nd to 1st gear DOWN shift MPH setting. In Auto shift mode it will DOWN shift at this set MPH.
TPS % : See the notes above from 1st.

3rd: 3rd to 4th gear UP shift MPH base setting.
3rd to 2nd gear DOWN shift MPH setting. In Auto Shift mode it will DOWN shift at this MPH.
TPS % : See the notes above from 1st.

Scroll to **Next** and press the **Select** button for the next setting screen

Menu Items Screen #4

4th: 4th to 3rd gear DOWN shift MPH setting.

TCC : " *ON MPH* " followed by 3 digit reading – Sets the speed for engaging the Torque Converter Clutch (Lockup)
" *OFF MPH* " followed by 3 digit reading - Must be lower than ON MPH! It will also disengage with the Brake Switch input if connected, It will disengage automatically when the Throttle Position percentage is less than 10% or when there is a gear change.
TPS % This sets the Throttle Position percentage for hard throttle Disengage.
Note: The TCC will only engage when the TPS % is between the low and high limit TPS setting. There is also a time delay built into the controller. So the TCC will not engage until the throttle position is in the engage range and the timer has run down.

Press **Back** button to return to the previous settings or menu.

MODE: Normal – Sport – Track There are 3 independent modes that can be configured and saved in memory. In the settings each mode must be set while the mode is selected. All modes are set independently and once they are set you can simply change to the mode desired and it will automatically update and load the saved settings in the control module. It may take a power cycle for the new mode to fully take effect.

Using Manual Input Buttons for Shifting.

There are 3 inputs on the terminal strip for *Manual Input Buttons*. **WARNING! DO NOT APPLY 12V** to any of these inputs!
UP Shift Input: Applying a momentary GROUND signal to this input will UP shift the gear and change the mode to Manual Mode. The UI-240 will indicate that the controller is in Manual Mode and it will not revert back to Auto Mode until the Range Selector lever is placed in ***Neutral*** then back into ***Drive***.

DOWN Shift Input: Applying a momentary GROUND signal to this input will DOWN shift the gear and change the mode to Manual Mode. The controller will remain in Manual mode and it will not revert back to Auto Mode until the Range Selector lever is placed in ***Neutral*** then back into ***Drive*** .

TCC Manual Engage/Disengage: Applying a momentary GROUND signal to this input will Engage the TCC if it is not already ON. If it is Engaged then pressing the button will Disengage the TCC or turn it OFF.

After you have made all the primary settings the **Mode** selected can be viewed from the monitor screen by pressing the Next button.

Testing the Controller

After all connections are made and all bare wiring connections are properly taped and/or heat shrink is applied then its time to test the controller. You can now road test the controller.
Preferably on a road with little or no traffic.

Notes:
This is a standalone micro-controller unit and is designed to be used in conjunction with any factory or after market ECM unit to control the engine. This controller provides a fully automatic mode shifting capability for the transmission.
On these transmissions the Positive feed is shared in the transmission for the Solenoids and Torque Converter. The solenoids are then switched OFF and ON by the Negative side through the TCM to select the correct gear. Never apply any power or ground the wires to transmission harness with the TCM connected, this will damage the controller and is not covered under the warranty.

This controller was pretested and all the defaults loaded, but you must make all the settings relative to your vehicle and set the input for MPH in the initial setup programming. Once all settings are made you can then change it to KPH if you prefer.

Warning and Terms of Use:
This product is intended for performance applications only. User accepts all responsibility for its use and application. E-Transcontrol, LLC will not be liable for any damages to your transmission, engine, drive-train or any damages to any property or people by use of this product. By connecting this product to your vehicle you fully and unconditionally agree to these terms. Use this product at your own risk.

Warranty Returns:
All E-Transcontrol products come with a limited 1 year product warranty. You can return the product directly to us for repair or replacement while under warranty. If the product is found to be defective then it will either be repaired or replaced with the current model at no cost. See the warranty document for full warranty details.

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