



Part# 36211(Universal w/ CAN), 36212 (Pro-Flo 4), 36213 (Carbureted)
TCI TC, Transmission Controller
GM 4L60E, 4L80E
INSTALLATION INSTRUCTIONS

PLEASE study these instructions carefully before beginning this installation. Most installations can be accomplished with common tools and procedures. However, you should be familiar with and comfortable working on your vehicle. If you do not feel comfortable performing this installation, it is recommended to have the installation completed by a qualified mechanic.

If you have any questions, please call our **Technical Hotline at: 1-800-999-0853**, 7:00 am - 5:00 pm, Central Standard Time, Monday through Friday.

IMPORTANT NOTE: *Proper installation is the responsibility of the installer. Improper installation will void your warranty and may result in poor performance, engine damage, transmission damage, or vehicle damage.*

BEFORE YOU BEGIN:

Verify contents of the kit.

Check to confirm you've received the correct components for your vehicle.

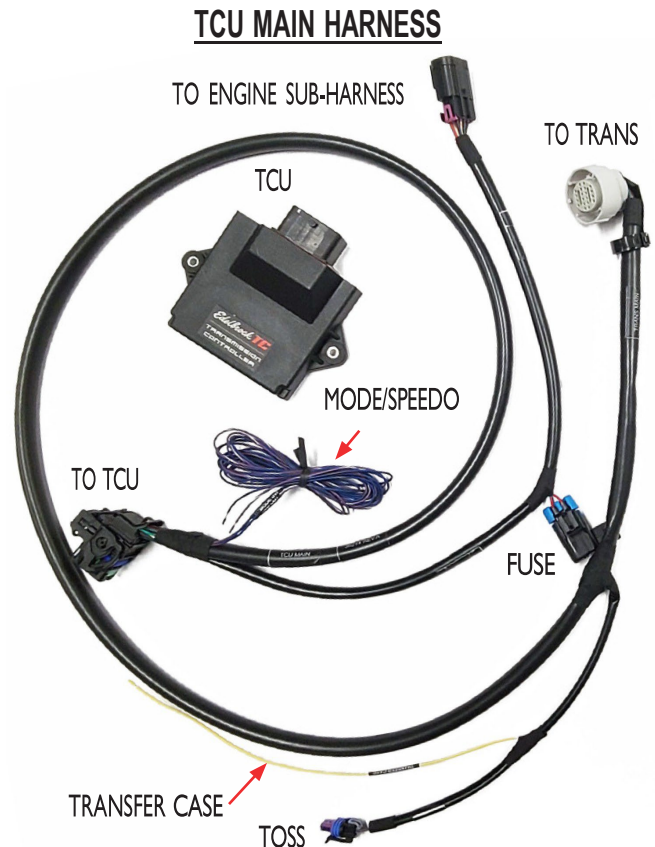
- Transmission Controller (TCU)
- TCU Main Harness
- Engine Sub-harness

Inspect the transmission. Make sure your transmission is in good mechanical condition. A malfunctioning transmission may harm the TCI TCU and will void warranty. It is recommended to have the transmission inspected by a qualified technician.

Transmission Main Plug. The TCI TC is compatible with 4L60E & 4L80E Transmissions. Early GM 4L80E transmissions had two (2) types of main body connectors: the later version is still available, but the older version (pre-1994) has been discontinued. While the TCI TC is NOT compatible with the early connector for the discontinued model, fortunately all 4L80 transmissions can be easily upgraded to the internal wiring harness & plug from a late-model GM 4L80E. The harness can be ordered from TCI (Part# 276610) and installed by a qualified transmission shop.

Download the App. You can calibrate and tune your transmission controller from the convenience of your smartphone or tablet.

To begin, search for the free "TCI TC Tuner"  app in the Google Play or Apple App store. The TCU and Android or Apple device communicate via Bluetooth connection.



INSTALLATION:

1. Connecting the Main TCU Connector.

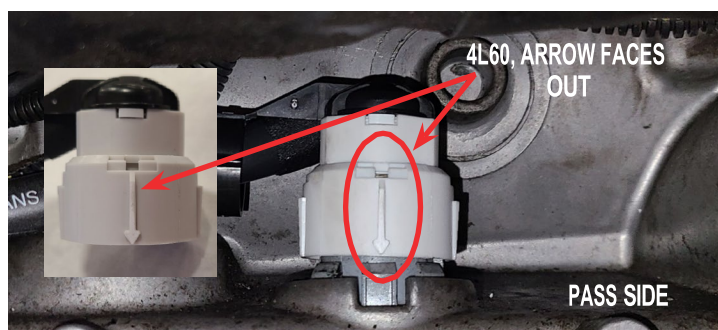
A. Insert Connector into TCU Header and Rotate the Latch Up to Lock in place. Check that lock tab is engaged for positive connection.

B. To Remove the Connector, Press Down on the Lock Tab located in the center of the connector and Rotate the Lock Lever Down.

2. Layout the Harness and TCU. Find a suitable Mounting Location for the TCU and safely route the harness AWAY from the exhaust system, the drive shaft, or other moving parts of the drivetrain down towards the Transmission Main Connector.

NOTE: It is recommended to mount the TCU in a location away from excessive heat, vibration, and possible water exposure. Avoid mounting the TCU and routing the harness near any ignition related components (ignition coil, distributor, spark plug wires) to reduce the potential for RF noise interference. Also avoid routing near the headers, sharp edges, or any tight corners that may damage the harness.

3. Mounting the TCU. The TCI TC housing is water resistant so you can mount the controller inside the vehicle or in the engine compartment. Use the built-in flanges to secure the controller in place with screws to a flat surface.



4. Making the Connections

A. **Main Transmission Plug (Required)** - Connect the main Transmission Plug to corresponding socket on transmission.

NOTE: Orientation of the transmission Main Connector. The Arrow on the Harness Connector Should Align with the Transmission Main Connector.

B. **Transmission Output Shaft Speed Sensor (TOSS) (Required)** – Connect the Transmission Output Speed Sensor to the mating harness connector.

NOTE: A few different types of Transmission Output Shaft Speed (TOSS) sensors are used in the GM 4L80E/4L60E series transmissions. The Main Harness is designed to plug directly in to the late 4L60E and all 4L80E transmissions. Early 4L60E TOSS require an adapter harness sold separately (2WD #36215 / 4WD #36216). For Late TOSS 4WD an Extension Harness is available separately (#36217)

C. **Transmission Input Speed Sensor (TISS) (Not Used)** Some Transmissions (4L80E) have a TISS (Transmission Input Speed Sensor) which is not used with the TCI TCU. This will not affect performance and can be left open.

D. **Transfer Case Wire** Connect the Yellow Harness Wire Labeled T-Case to the vehicles Transfer Case Signal Wire if applicable (Required for 4WD Applications)

Optional: Speedo Out Wire Use the purple/white harness wire labeled “SPEEDO OUT” to connect to your vehicle’s speedometer or engine ECM

NOTE: For vehicles originally equipped with 4L60E/4L80E, DO NOT connect to your original TOSS wires.

Optional: Mode Switch Wire Dash Mounted button to switch between Mode “A” & Mode “B”. Connect the blue/orange wire to a momentary switch to Ground.

Optional: Mode LED Wire Dash Mounted LED Light to Indicate when Mode “B” is selected. Connect the blue/red wire to LED (+) Power.



5. Connect the Engine Sub-Harness

5A. 36212 ProFlo 4 & 4+ EFI / CAN Harness Connect Engine Sub-Harness between Main Harness and ProFlo EFI CAN Connector.

Once finished, skip to Step 8 - Final Checks.

5B. 36211 Universal EFI w/ CAN The TCI (TC) Transmission Controller can obtain throttle position (TPS) & engine speed (RPM) directly from a compatible ECU through the CAN bus.

a. Connect Universal EFI w/ CAN Engine Sub-harness to the Main Harness Connector and Route the Switched (+12V) Power, Ground, Can Hi & CAN Lo Wires to the appropriate locations.

b. Connect the Tan/Black (CAN Hi) & Tan (CAN Lo) wires from the TC Sub-harness to the CAN Hi & Lo leads of your EFI/ECU harness.

Note: For Aftermarket EFI/ECU CAN Wiring please refer to your ECU's instructions & wiring diagrams to identify the CAN Hi and CAN Lo Connections.

5C. 36213 Carbureted

a. Connect Engine Sub-Harness to the Main Harness and Route the Leads for TPS, Tach Input, Switched Power, & Ground to the appropriate locations.

6. Connect the TPS

6A. For Universal EFI applications with CAN - The TPS signal is shared over the CAN connection. No other connection is needed.

6B. For Carb & Non-CAN Enabled EFI - A stand-alone TPS sensor is required (sold separately) for applications without available TPS signal. DO NOT tap into existing TPS wires unless approved by EFI manufacturer. **For applications with TCI AFB, Holley, or Rochester carburetors without existing TPS** - we recommend the HGM Acculink TPS, TCI Remote Mount TPS #377450, or similar, that features a 3-pin Weather-Pack connector that will plug directly into the provided harness. Refer to manufacturer's instructions for TPS installation & Setup.

7. Connect Power, Ground, & Tach Leads

7A. For Universal EFI w/ CAN

a. **Connect Switched 12V+ Power** - Connect the red "Power" wire to a 12V+ circuit that's powered when your ignition switch is turned to the "ON" position, and not accessory (ACC) position with a minimum 6 amps of current.

b. **Connect the Ground Wire** - Connect the Black Wire labeled "GROUND" to a good ground.

c. **For Universal EFI w/ CAN** - The Tach (RPM) signal is shared over CAN. No other connection is necessary.

7B. For Carb & Non-CAN Enabled EFI


a. **Connecting the Tach (RPM) Input** - Connect the Brown (Tach) wire to the negative(-) side of the ignition coil.

b. **Connect Switched 12V+ Power** - Connect the red "Power" wire to a 12V+ circuit that's powered when your ignition switch is turned to the "ON" position, and not accessory (ACC) position with a minimum 6 amps of current.

c. **Connect the Ground Wire** - Connect the Black Wire labeled "GROUND" to a good ground.

8. Final Checks - Recheck all wires and routing for safety and ensure cables are clear of exhaust and sharp edges. Reconnect the battery and turn the ignition switch to the ON position to deliver power to the controllers. **DO NOT START ENGINE.**

9. Pairing your Device with the TCI TC Tuner App

- A. Power Tablet or Phone on.
- B. Open the TCI TC Application. 
- C. Tap Icon on the top right corner of the screen for the pairing page.



- D. The app will search for compatible devices. When found, highlight and it will begin to pair.



- E. Wait for the connection. When connected, a check mark will appear and a “0” for no trouble codes. **NOTE:** Carbureted applications with standalone TPS may see (I) DTC code for TPS calibration. This is normal and should clear once the TPS Calibration step is complete.

- F. Tap the Back Arrow to return to the home screen.

10. TC Setup - Proceed through the Setup Wizard to complete the installation. See (?) for help.

11. Road Test - The TCI TCU uses information about throttle position, vehicle speed, and gear level to shift for optimum performance.

- Under light throttle, upshifts occur relatively early.
- As throttle level increases, upshifts occur at increasingly higher vehicle speeds.
- Under full-throttle, upshifts occur at a higher vehicle speed and engine RPM.

A firm shift is required to prevent slippage when the engine is making more torque, so shift firmness is related to throttle position or engine load, rather than vehicle speed. Under less power, the shift can be gentler.

- You can adjust the overall shift firmness by changing the “Shift Firmness” in the “Basic Tuning” screen.
- You can adjust overall shift speed by changing the “Shift Speed Adjust” in the “Basic Tuning” screen.

Congratulations on the successful installation of your new TCI TC.

If you have any questions, please call our Technical Support hotline at 800-999-0853 and one of our technicians will be happy to assist you.

Basic Tuning Reference Guide:

1. Shift Speed Adjust:

Increasing this value makes your transmission shift at higher road speed for a given throttle position (shift later, effectively).

2. Shift Firmness Adjust:

Increasing this value causes firmer shifts for a given throttle position.

3. Shift Control Mode:

Sets your shifting mode to either Automatic or Manual. If the Shift Mode is set to "Manual", automatic shift sequencing is disabled. This means the vehicle is in whatever gear you put the shift lever in. In manual mode, the TCI TC still provides pressure modulation and torque converter control - you just have to manually change gears. **Beware!** In manual mode, you are in control of the shifting. This means if you place the lever in fourth gear position, the vehicle will be in fourth gear, even from a stop. Use care when operating the transmission in manual mode. There is potential for overheating the torque converter or other vehicle damage. This mode is not recommended for street use.

4. R2L Pressure Adjust (Reverse/2nd/Low):

Affects Reverse, Low, and 2nd gear. Raises the transmission pressure by this amount when in the position. This boost is ramped up slowly so it will not apply hard in reverse.

5. Max Engine Speed:

As you adjust the shift speed up and down, you may find that the wide-open throttle upshift RPM is different from the speed at which you feel comfortable running your engine. The "Maximum Engine Speed" allows you to set an upper RPM limit or cap at which your TCI TC will always upshift. This feature is not a substitute for a proper rev limiter in your ignition or fuel system. It is likely that the Shift event may happen a few hundred RPMs higher depending on variables such as rate of engine acceleration, wheel slip, converter slip, etc. Each transmission responds to shift commands differently and with varying delays. In the beginning, it is wise to set this feature conservatively. Initially, set this value at least 1000 RPM low, and then gradually increase the setting until you are happy with the resulting shift point.

6. Downshift Sensitivity:

This screen allows you to adjust the passing gear (downshift) sensitivity. The highest setting is very sensitive, which means passing gear or downshift activity when stepping on the throttle is very quick.

7. TCC Enable Gear:

You can choose to lock your Torque Converter Clutch (TCC) in either 4th gear, 3rd and 4th gear, or not at all. Some transmissions also offer the option to lock in 2nd gear. The 3rd and 4th gear setting is useful if your vehicle has high gearing and you frequently cruise in 3rd gear. The factory default for this setting is 4th gear only.

8. TCC Enable Speed:

Adjusts the speed at which the torque converter locks up. Sometimes the combination of final drive ratio and tire size makes a car perform poorly below certain speeds while using the TCC. This is especially true if the engine does not produce much low-end torque. Raise the TCC enable speed if the engine bogs when the converter locks up.

9. TCC Max Throttle:

As you increase throttle, the TCC should disengage to allow the torque converter to multiply torque for greater acceleration. This screen allows you to adjust the throttle position where the TCC disengages.

10. TCC Min Throttle:

As you release the throttle in a normal transmission configuration, the TCC is disengaged. Use this setting to establish a minimum threshold on your transmission. If the throttle drops below this percentage, the TCC will unlock. If the TCC minimum throttle is set to 0%, you can release the throttle and the TCC will never unlock. This can cause the engine to bog down when the engine gets close to the throttle speed. Set this value at least 1% higher than the idle TPS value to avoid this behavior.

11. TCC Disable Speed %:

This adjustment allows you to set a percentage that determines the TCC disengage speed. For example, a 10% setting will establish a disengage speed that is 10% below the speed at which the TCC engages. In some vehicles torque converter clutch engagement causes the vehicle speed to drop enough for the TCC to disengage. This on-again-off-again situation can often be avoided by increasing this value.

Selectable Modes:

Modes A & B may be set up for different driving styles & conditions. The TC will default to Mode A at Key On, so this should be the normal driving setup. Mode B may be useful for more aggressive shifting, towing, etc.

Modes A & B can be toggled between On-the Fly with the TCI TC App or an optional momentary switch (hold for 3-seconds to activate).

Reference for optional Mode Switch (Not Included)

TCI TC MODE SWITCH WIRING			
MOMENTARY SWITCH (5-wire)	FUNCTION	CONNECTION	TCU WIRE COLOR
LED (+)	TC Mode LED Power	TC Mode LED Lead	Blue/Red
LED (-)	TC Mode LED Ground	Chassis Ground	User Defined
NORMALLY OPEN	TC Mode Switch Ground	TC Mode Switch Lead	Blue/Orange
NORMALLY CLOSED	Unswitched Ground	Not Used	N/A
COMMON	Switched Ground	Chassis Ground	User Defined