

Instructions Manual

Allison TCM Upgrade - T14 | A50 to T87 with Co-Pilot 2011-2015 GM 6.6L Duramax

SKU: 601-940-4368, 601-940-4416

601-920-4368, 601-920-4416

1. ATS Transmission Control Module (TCM) for A50 to T87 Conversion - 600-267
2. A50, A60 to T87A Conversion Harness - 601-92
3. GM TCM Retainer - 600-268
4. LML T87A TCM and Co-Pilot Mounting Bracket - 601-100
5. LML T87A TCM and Co-Pilot Mounting Bracket Spacer - 601-101
6. 8-32, Low-Strength Nylon Locknut - 001-197
7. 8-32, 7/8" Long Button Head Hex Drive Screw Zinc Plated - 001-196
8. Sensor, Transmission Speed, Output, 2015-2019 Allison LCT1000 - 300-622
9. Speed Sensor, Output, Convert A45/A50 TCM to T87 TCM, GM-T87 (**4WD only**) - 601-052-1000
10. GM Speed Sensor Adapter Harness, New Style Sensor to Old Style Connector - 601-113
11. Steel Square-Neck Carriage Bolts, Medium-Strength, Zinc Plated, M6 x 1 mm Thread, 35 mm Long - 001-221
12. High-Strength Steel Nylon-Insert Flange Locknut, Zinc Yellow-Chromate Plated Class 10, M6 x 1 mm Thread - 001-147
13. ATS Control Box, TCM Upgrade A50 to T87 TCM, 2011-2016 GM 6.6L Duramax - 600-900-4368

INSTALLATION INSTRUCTIONS:

1. Disconnect battery terminals on both batteries.
2. Remove the drivers side battery.
 1. Disconnect the wiring harness connector from the A50.
 2. Remove A50/T14 from the radiator shroud.

3. Unplug TCM wiring harness from A50/T14 TCM
4. Remove the red TPA from the factory harness using needle nose pliers and pull square from connector



5. Modify the Red TPA as shown. Be sure to cut the edges flush and not cut the clip itself. Cut here with diagonal cutters: Do not cut this clip:



Before and After Shown:



Discard this piece:

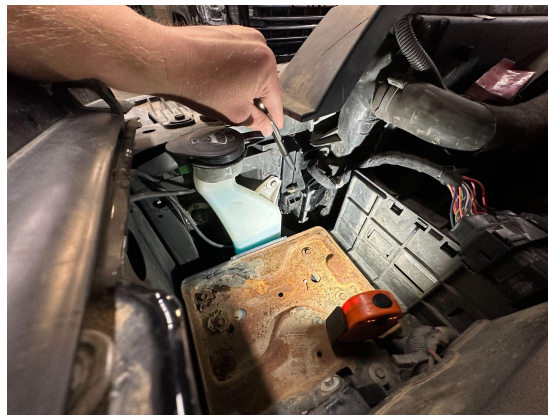


6. Insert the modified TPA into the factory harness.



7. 2009-2014 Mount the TCM / CoPilot module to the radiator (in front of the battery side of the radiator)

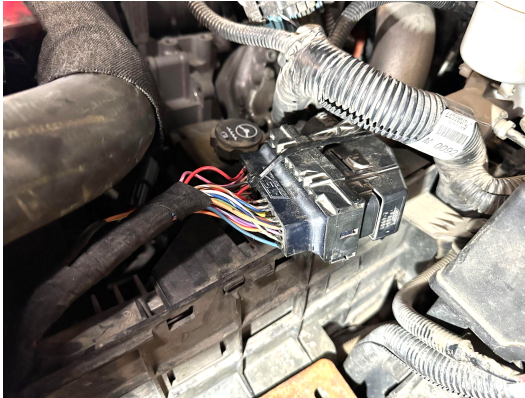
***2015 ONLY:** Cut the plastic tab of the radiator shroud to allow the T87A to sit flush.



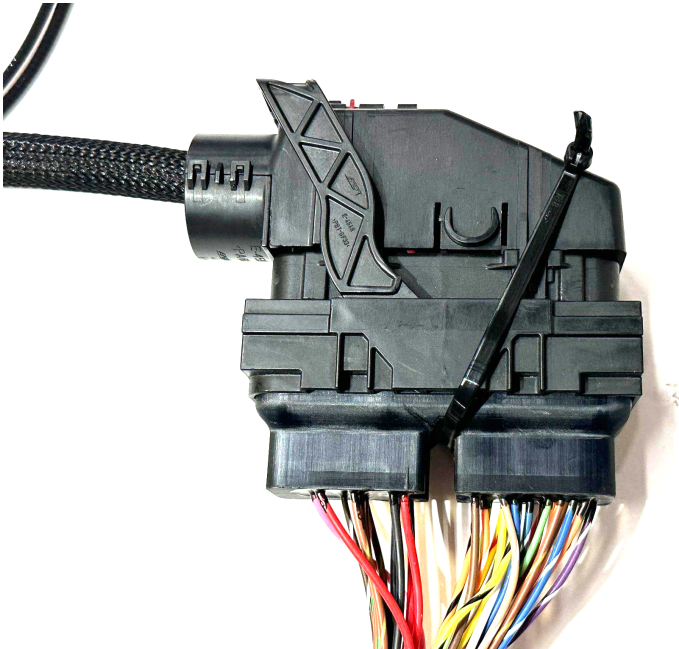
8. Make sure all red tabs are pushed in and locked on the T87A/ Copilot connectors and push in all protruding white terminals seals.



9. Plug in ATS T87A wiring harness connector in factory harness.



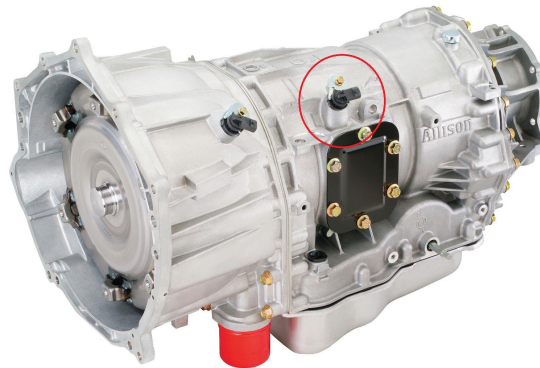
10. Add zip tie to the connector after the lever is locked as shown.



11. **4WD Trucks:** Replace the output speed sensor in the transfer case with the supplied sensor.
(4WD shown below) (Use supplied jumper harness)
2WD Trucks: Replace the output speed sensor on the tail housing of the transmission.



12. Replace the turbine speed sensor with the supplied speed sensor.



13. Reinstall the battery and reconnect all battery cables.

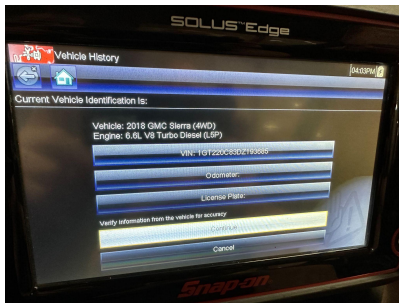
(Optional) Quick Learn Procedure - *Not Required*

When accessing the TCM for relearn:

1. Select 2018 GMC L5P as shown below:

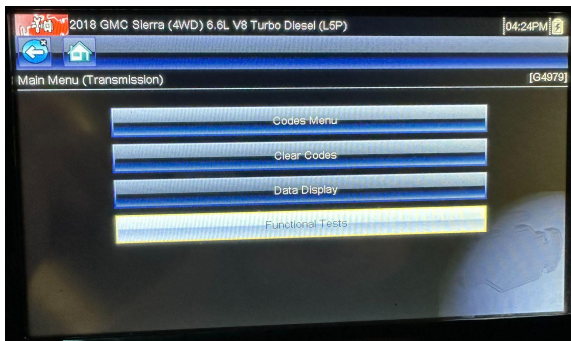
Note: -Trans temp must be at least 120 degrees.

-All codes (CEL) in all modules need to be cleared and not present before initiating relearn. Re-learn will not work if codes are present.

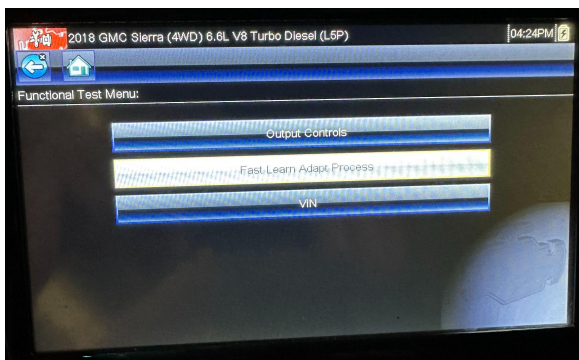


Transmission Data - Transmission Fluid Temperature (°F)		1971
Transmission Range Switch AB/CP		Low High High Low
Driver Shift Control Mode		Inactive
Driver Shift Request		Inactive
Transmission Fluid Temperature (°F)		127
Transmission Hot Mode		No
Tow/Haul Mode		Disabled
Ignition Voltage (V)		14.1
PC Solenoid Valve 1 Pressure Command (psi)		231.9

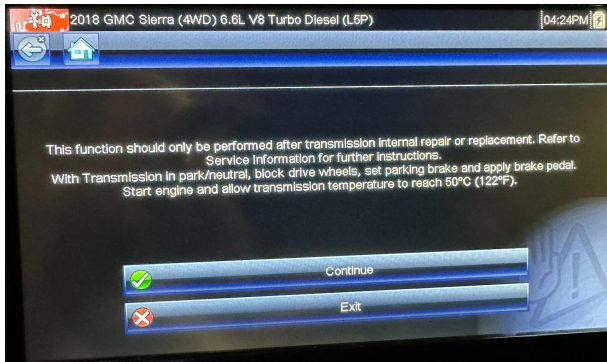
2. Select Functionality Test:



3. Put the parking brake on.
4. Select Fast Learn Adapt Process



5. Select continue



6. Follow instructions on the scanner. Put in Drive when test requests. (Relearning on the T87A can be finicky, and may take a couple of times.)
7. Series of clunks during relearn is normal.

Notes:

- When scanning for the TCM choose a 2018. When scanning the rest of the vehicle, pick your actual year.
- If you do not have a scan tool or quick relearn does not complete, drive truck with light throttle for 1st through 6th gear shift cycle 4-5 times. Repeat until shifts are smooth.
- In case of a hard shift, manually shift with gear select through the hard shift at (ex. 3rd to 4th) at different throttle levels until shift is smooth 4-5 times.