



Sniper Standalone Transmission Controller Quick Start Manual 551-102

NOTE: This manual is a “quick start” manual. For a comprehensive manual go to www.holley.com and download the full manual for part number 555-102. This manual is intended to complete installation and load a base calibration.

OVERVIEW

The Sniper Transmission Controller (STC) allows the use of common GM and Ford electronic four speed transmissions. Part Number 551-102 is a stand-alone controller and is intended to work with carbureted or EFI applications that don't support electronic transmission control. You will need a throttle position sensor if one is not already installed. The included 3.5" touch screen is used to perform all the allowable adjustments (shift speed, torque converter lockup, etc.) No programming is available with PC computer software, however the transmission functions can be data-logged and reviewed with Sniper EFI PC software.

KIT CONTENTS/ADDITIONAL PARTS REQUIRED

This kit contains the Sniper Transmission Control Module, 3.5" Touchscreen handheld tuner, and power/sensor harness.

The user must purchase a transmission harness separately that fits their specific transmission. These harnesses are as follows (note that these are the same harnesses used for Holley Dominator and Terminator X Max ECUs):

558-405 – GM 4L60/70/80E

558-455 – 2009+ GM 4L60E*

558-470 – 1998+ Ford 4R70W/4R75W

558-471 – 1992-1997 Ford AODE/4R70W

* The “2009+” 4L60E specifically applies to OEM/factory original applications. When dealing with a GM Performance Parts, reman, or unknown year transmission the transmission connector should be checked per the image below. If pin “F” (Circled in **Figure 1** below) IS PRESENT, you need the 558-455 harness. If it is NOT present you need the 558-405 harness. Go by THIS PIN ONLY as the other pins may vary transmission to transmission. Be sure you compare your connector to the image below by “clocking” the pins based on the connector slot.



Figure 1

A throttle position sensor (TPS) is required. If one is not available on the vehicle Holley offers the following:

534-202 – For Holley carbs with electric chokes

534-214 – For Holley Gen 3 Dominator carbs

1951 – For Street Demon carbs

120002 – Can be retrofitted to most carbs

GENERAL OPERATION

GM and Ford four Speed electronic overdrive transmissions are simple in operation. They have four speeds with the top gear being an overdrive and all have a lockup torque converter that eliminates any slippage when the lockup is applied. With a stock torque converter the lockup should only be applied under light throttle conditions or excessive wear will occur.

Upshifts, downshifts, and torque converter lockup are based on vehicle speed and throttle position (or optionally the MAP sensor) and are adjustable with the 3.5" touch screen.

WIRING

Transmission Harness

Install the (purchased separately) transmission harness. Connected it into the 26 pin (smaller) connector on the STC unit. Instructions for the specific transmission harness can be found at Holley.com under the transmission harness part number. They typically have a power connection to the battery and are plug-and-play to the transmission.

Loose Wires:

The included harness with the 34 Pin connector has the following loose wire connections:

Red (16 Gauge) – Connect to battery power

Black (16 Gauge) – Connect to battery ground

Red/White (20 Gauge) – Connect to +12v switched ignition power

RPM Signal Input – ONE of the following two wires (Purple or White) wires need to be connected to an RPM signal input as follows:

Purple (20 Gauge) – RPM Signal Input – This should be used when a “12 volt square wave” signal is available to connect to. This would be the “tach out” signal on a MSD/CD box, some MSD Ready-to-Run distributors, or possibly a signal out of an EFI ECU. NEVER, NEVER connect this directly to ANY ignition coil. This should never be connected to an HEI distributor or HEI coil.

White (20 Gauge) – RPM Signal Input – If a “12 volt square wave signal” is not available and a MSD/CD ignition box is NOT used. Connect this to the negative side of the coil. This would typically be used on a stock factory vehicle.

Grey/Red (20 gauge) – Fan Output 1- Optional – Turns on/off based on transmission temperature. This is a GROUND output and should ALWAYS be used to trigger a relay.

Grey/Yellow (20 gauge) – Fan Output 2- Optional – Turns on/off based on transmission temperature. This is a GROUND output and should ALWAYS be used to trigger a relay.

Blue/White (20 gauge) – Speedometer Output – Optional – Used to send signal to an electronic speedometer. (configure PPM setting in the 3.5 handheld).

3.5" Touch Screen LCD Connection:

Connect the 3.5 Touch Screen into the 4 pin CAN bus connector.

Terminated Connectors:

There are two terminated connectors in the harness, the TPS (Throttle Position Sensor) and MAP (Manifold Air Pressure) sensor. One or both are required depending on the calibration. All base calibrations are intended for use with a TPS input (TPS is REQUIRED for proper operation), and no MAP sensor input. A MAP sensor is typically used with boosted applications for the Line Pressure table (OPTIONAL).

TPS – The TPS connector is a common style used for a variety of Throttle Position Sensors. If your TPS uses a different connector, replace the one on the harness. The pinout is as follows:

Orange Wire – 5 Volt Reference

Black Wire – Sensor Ground

Green – TPS Signal

MAP – The MAP sensor connector is for the common GM 1 Bar MAP. (Holley PN 538-24). The pinout is as follows:

Orange Wire – 5 Volt Reference

Black Wire – Sensor Ground

Red/Black – MAP Signal

STC 34 Pin Connector Pinout (pins not shown are not used):

Description	Color	Pin
Coil – Input	White	A1
Battery Power (A2/3/4 tied together)	Red	A2
Battery Power (A2/3/4 tied together)	Red	A3
Battery Power (A2/3/4 tied together)	Red	A4
TPS Input	Green	A5
Ground (A6/7/8 tied together)	Black	A6
Ground (A6/7/8 tied together)	Black	A7
Ground (A6/7/8 tied together)	Black	A8
Fan Output	Grey/Red	A9
Switched +12V Input	Red/White	A10
Fan Output 2	Grey/Yellow	A17
Sensor Ground	Black	A18
MAP Sensor Input	Red/Black	A23
CAN Low	Orange	A24
CAN Power	White	A25
Sensor +5V	Orange	A26
Speedometer Out	Blue/White	A28
Crank/RPM Input	Purple	A30
CAN Hi	Tan	A32
CAN Ground	Black	A33

INITIAL USE

Turn on the vehicle's ignition power. When powered up you'll see the main screen (**Figure 2**). The Sniper EFI as well as the Transmission controller functions (tuning, gauges, wizards, logging) will all be performed through the same icons in **Figure 2**.



Figure 2

PERFORM WIZARD

The STC wizard must be performed. This will prompt the user to select the proper transmission, tire size, etc. This is required for the transmission controller to function. NOTE: More detailed information can be found in the online comprehensive manual.

Numeric entries can be entered using the “slider bar” or clicking on the numeric value and using the keypad. Select “Next” after making a selection or “Back” to a previous entry.

Select the "Wizards" icon.

Select the "STC Wizard" icon (**Figure 3**).



Figure 3

- 1) Select Transmission Type (**Figure 4**) - Note: The 1.63 ratio is by far the most common 4L60E version.



Figure 4

- 2) Select Ignition Type – See the WIRING section above. If you connected the WHITE wire, select "Coil (-)", if you connected the purple wire, select "CD Box".



- 3) Number of Cylinders



- 4) Select MAP Sensor – If your application is naturally aspirated (no turbo or supercharger), you'll almost always not need/use a MAP sensor. Select "None Used" if none is used.



- 5) Enter Tire Diameter (**Figure 5**) – Enter Height/Diameter for rear tire in inches.



Figure 5

- 6) Enter Rear Gear Ratio (**Figure 6**).



Figure 6

- 7) The next entry is “Automatically Scale Shift Tables” (**Figure 7**). It is advised to select “Yes” to this. This will rescale all of the up/down shift tables for the user’s specific tire diameter and rear gear ratio (compared to the base calibration values of a 4.10 gear and 27.7” tire). If this is not done, up/downshifts may occur early or late and a lot of manual adjustment may be required.



Figure 7

- 8) At this point a base calibration will be created and you’ll see a file name of “AT” or “FAT” (**Figure 8**). Select “Start” and you will be prompted to cycle the ignition power. Select “Finish” (**Figure 9**).



Figure 8



Figure 9

- 9) Next, return to the “Wizards” menu and select “TPS Autaset”. Select this icon and follow the instructions. Press the pedal fully, twice, when requested. If the TPS Autaset is not successful it means the TPS wiring is not correct or there is a sensor issue.



At this point, the transmission controller programmed with a base calibration and is in a drivable condition. Use the Tuning Parameters to adjust transmission shifting, torque converter, and other operations. Information is provided below. It is highly advised to read all of these instructions and perform any adjustments before driving the car.

MONITORS/GAUGES

You can view the transmission parameters by selecting the “Monitor” icon and then either the “Monitors” or “Multi-Gauge” icons. Monitors has two transmission specific screens (Trans #1 and #2) (Figures 31-33) and Multi-gauge has a “Trans/Engine” screen (Figures 34-35). You can set up a custom screen using the “Dash #1/2/3” screens.



Figure 31



Figure 32



Figure 33



Figure 34



Figure 35

LED Definition

The unit has 8 LEDs. Three of them are used as follows:

LED #1 – Flashes green to indicate the unit is powered and basic operation is being properly performed.

LED #2 – This LED will light up blue when an ECU (such as a Sniper EFI unit) is connected and the STC is properly receiving CANbus information. If an ECU is connected and powered and this LED is not lit up, there is a CANbus issue (wiring connection, etc.). Note: Having the 3.5" handheld display connected by itself will not cause this LED to light up as is the case when used as a standalone controller.

LED #3 – This will light up red when the unit does not have a proper calibration loaded. When it is operating properly it should not be lit.

LEDs #4-8 – None of these will be active.

Holley Performance Products
Toll Free Technical Service: 1-866-464-6553
Technical Service: 1-270-781-9741

For online help, please refer to the Technical Information section of our website: www.holley.com

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