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TFT CAN Bus Dash for AEM Infinity
Plug and Play Installation Manual
Doc version 1.3

**Notice: This product is intended for Off-Road use only.
Never take your eyes off of the road while using this device.
If you are uncomfortable with wire termination, please have
this device installed by a competent shop.**

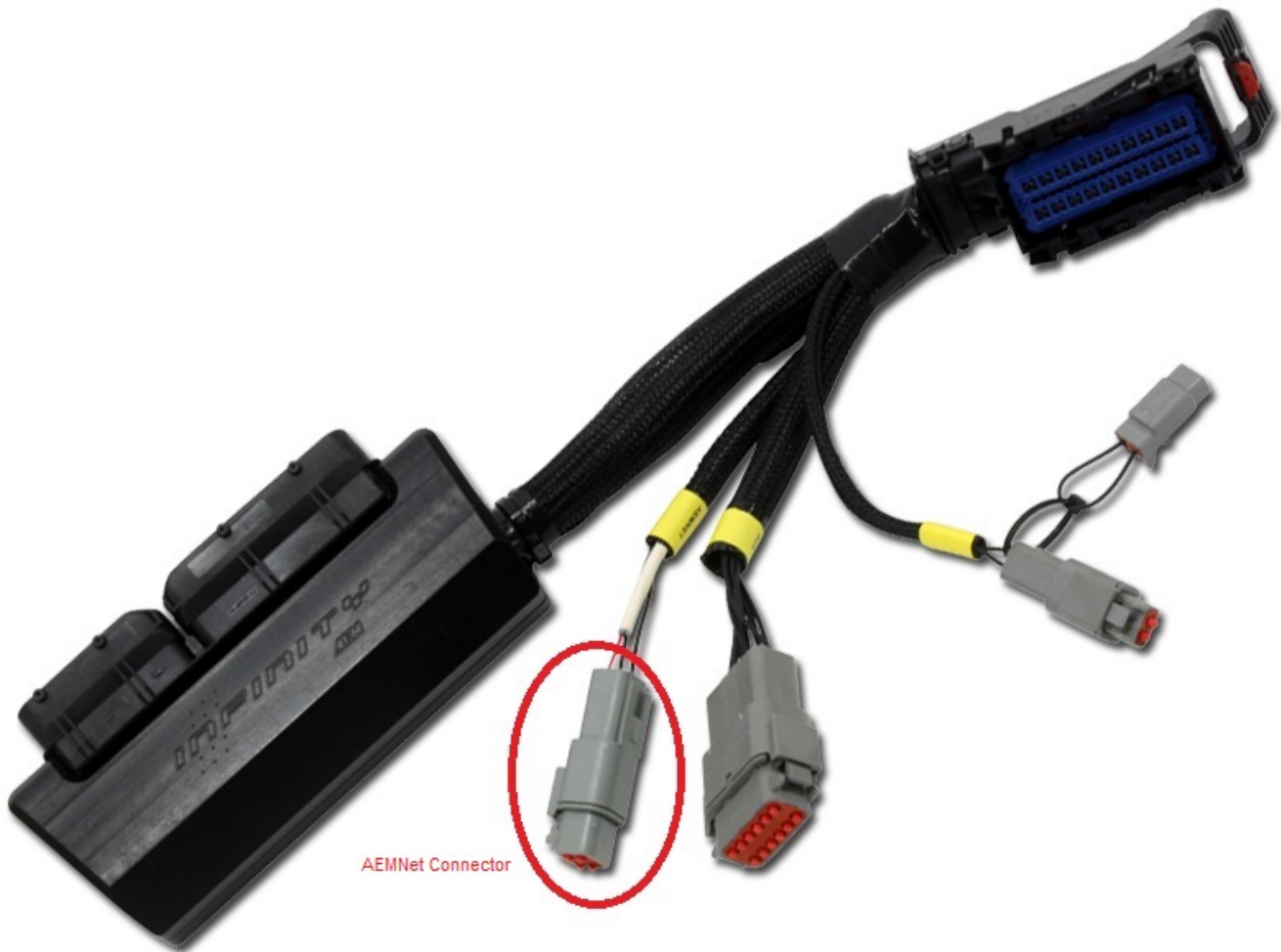
**** Notice! This device should be configured by competent personnel.
Raising the BOOST too much or reducing the Traction Control too much can
have severe consequences. You could blow your engine and or lose
control of your vehicle****

Plug and Play harness installation:

Plug and play wiring harness for Infinity ECUs with the AEM wiring harness:

Locate the 4 pin AEM NET wiring connector on the Infinity harness. Connect the Plug and play harness into the Infinity harness and run the cable to the desired gauge installation location. Note that the gauge gets power and the CAN signal from this cable and no other wiring is necessary.

**** Notice**** It has come to our attention that some of the first AEM Infinity factory harnesses had the CAN high and CAN low wires reversed (**Most Infinity 8 Supra harnesses**). Pin 1 should be White (CAN high) and Pin 2 should be Green (CAN low).



Plug and pin harness installation:

Plug and pin wiring harness for Infinity ECUs:

The termination to the Infinity ECU is relatively simple as it only consists of two wires: CAN A High and CAN A Low. Included on the plug and pin harness are two pins that will simply plug into the Infinity (Molex MX 123) connectors.

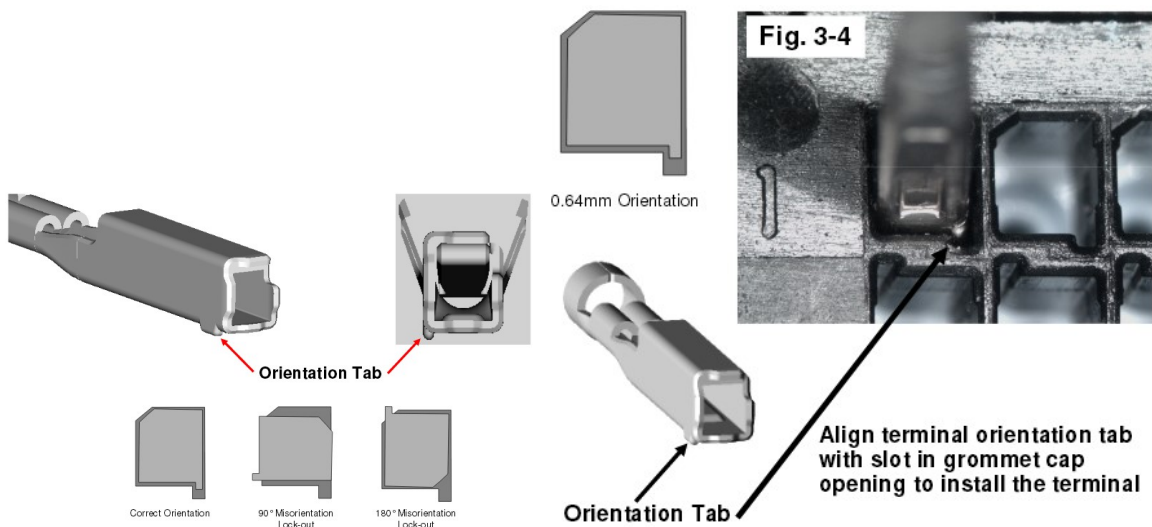
Notice: It is imperative that the pins are properly inserted into the correct positions on the connector! Removal and repining of these connectors is very difficult and requires special tools. Improper connection to the wrong pins could result to damage to the gauge or the ECU.

Double check your work here!

If you have questions regarding the Molex MX 123 connector, refer to this document for assistance:

http://www.molex.com/mx_upload/family//MX123UserManual.pdf

Note that the pins have an orientation tab that only allows the pin to be inserted in one orientation. See the figure below to see the orientation and how the pin will be locked out if the orientation is not correct.

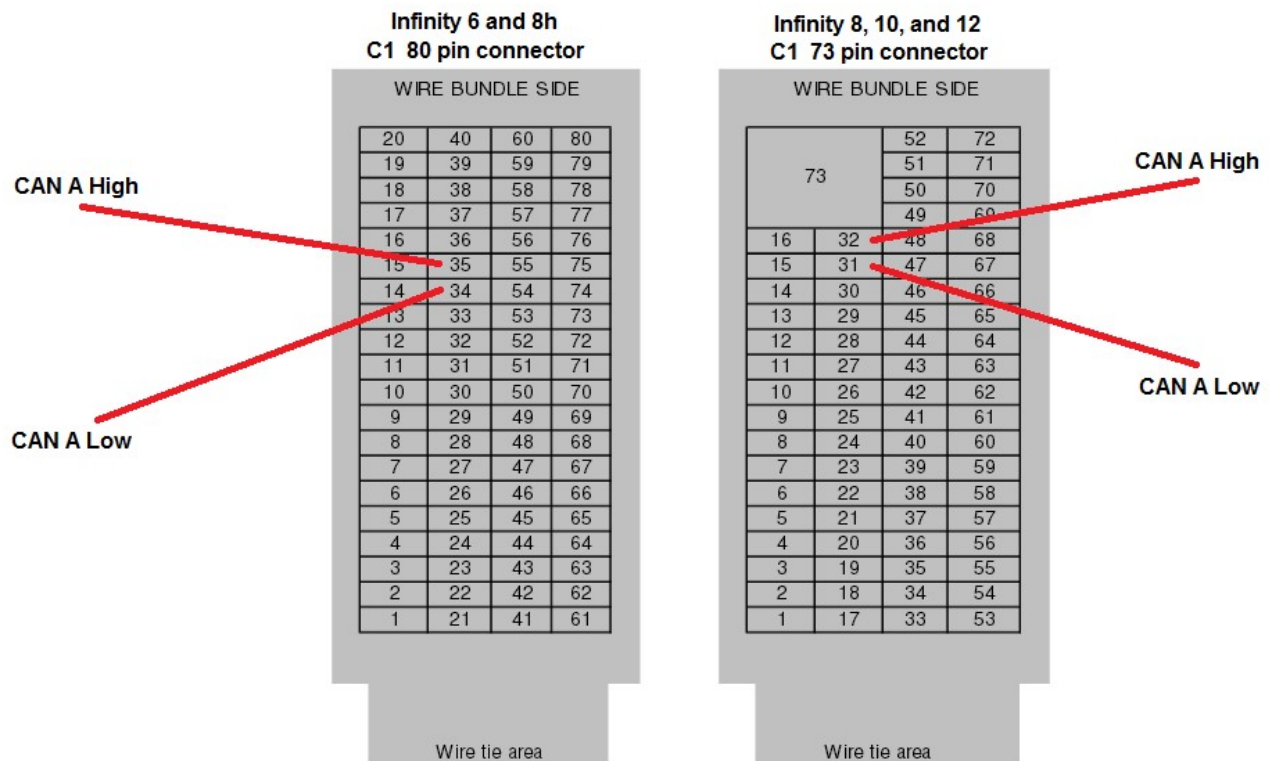


As per the AEM Infinity 8, 10, and 12 documentation:

C1-31	CANL_A_Out	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-32	CANH_A_Out	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.

As per the AEM Infinity 6 and 8h documentation:

C1-34	CANL_A_Out	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.
C1-35	CANH_A_Out	Dedicated High Speed CAN Transceiver	Recommend twisted pair (one twist per 2") with terminating resistor. Contact AEM for additional information.



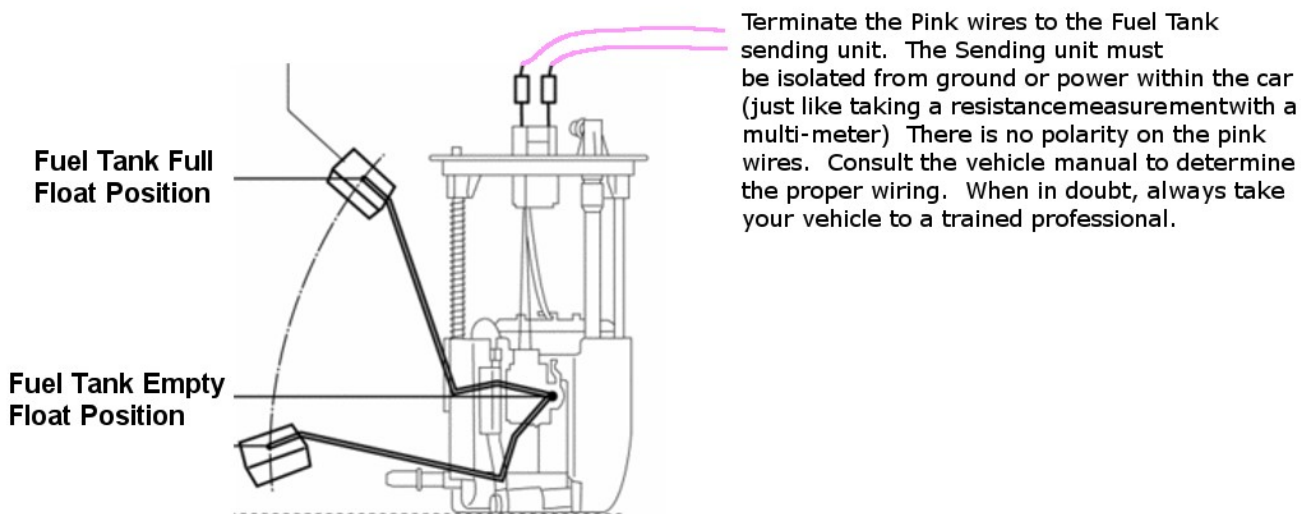
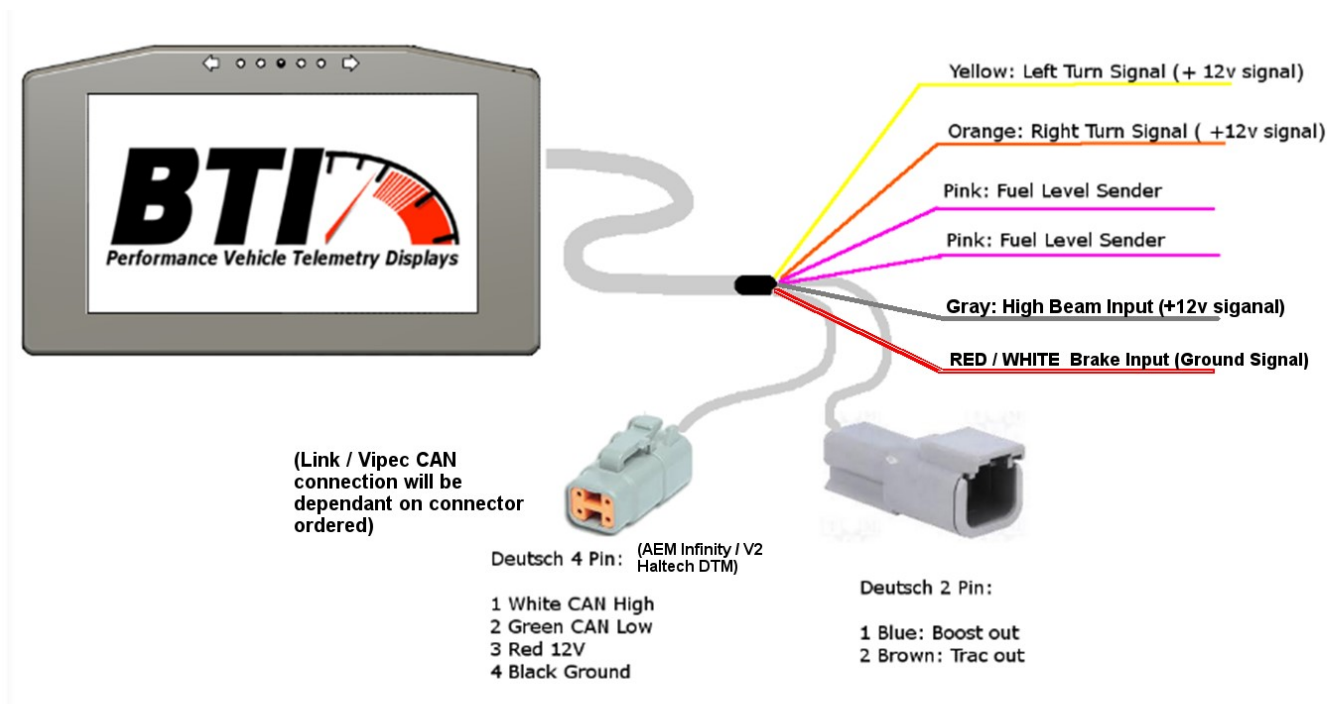
The plug and pin harness has two signal wires (Green and White). Pin the White wire to CAN A High and the Green wire to CAN A Low on the corresponding connector

Connect the White CAN A High wire to the WHITE CAN high input on the gauge harness

Connect the Green CAN A Low wire to the Green CAN low input on the gauge harness.

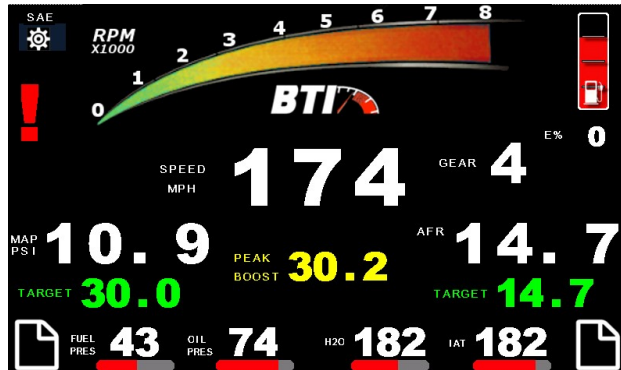
2 Pin Analog Out Connector (Brown and Blue Wires)

The termination of these two wires is dependent on the inputs that are assigned in the Infinity Tuner software. These inputs are assigned in the software under **Wizards > Advanced Setup > “ModeSwitch Input Setup” or “Traction Control Slip Target Trim Input Setup”**. The Input used will be defined here. Connect the blue and brown wires to the corresponding inputs that are selected for your application. There are more details regarding this under “BOOST and PWM STEPS” below.



Data LED: (back of the dash) This indicator will flash when ever the gauge is energized and CAN communications are present. Use this to confirm communications.

Operation:



Upon powering up a properly terminated gauge, the Dash will display the interface and version number, There are two page menu selection buttons at the bottom corner of all operational screens.



Use this button to ass the page menu:



Select the corresponding screen that you wish to view.

Parameter Data Color: The Parameters will be shown in White, Green, Yellow, and Blue.

White: Live Data

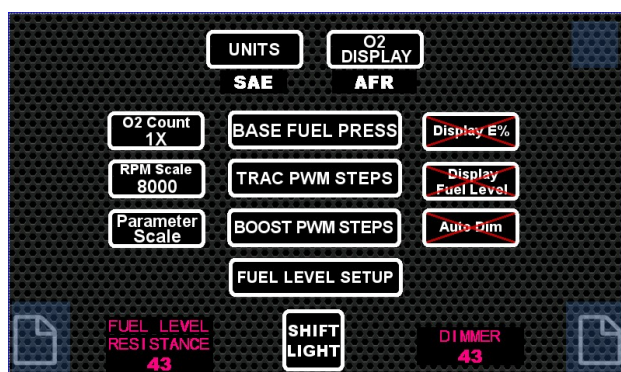
Green: Target


Yellow: Peak data (can be reset by touching value in most instances with

exception to boost which records its peak by boost episode)

Blue Data: This only appears on the Peak Boost Freeze Frame screen. This is freeze-frame data from the last boost episode. Example: your Manifold Air Pressure goes up to 20 psi, the blue freeze-frame data will be recorded while the Manifold Air Pressure was at its peak.

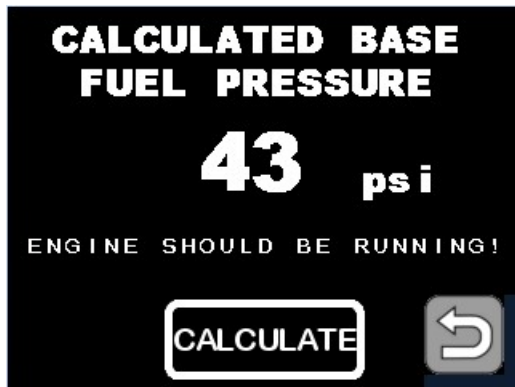
Dash Setup Options:



Touch the cog wheel on the touch screen in order to configure the gauge. 

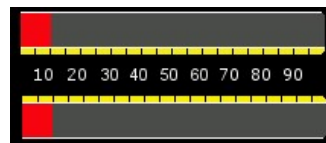
This will bring you into a screen where the Units may be selected, the settings can be accessed, and the shift light may be setup. The Units button will allow the user to toggle between SAE and SI units. This

applies to temperature, pressure, speed and distance. The O2 Display button will change how the Oxygen sensor data is displayed. The options are AFR and Lambda.



Base Fuel Pressure configuration:

In order to calculate the base fuel pressure, the engine should be idling. Press the CALCULATE button and the base pressure will be calculated and displayed. This is used on the fuel screen in order to graph the fuel pressure vs. boost pressure for simple regulator function verification.



Fuel Level Setup: This is where the fuel level resistance may be programmed in order to take a reading from the fuel level sender. Consult the service manual for the fuel level resistance values.

Example: MKIV Toyota Supra Full = 4 ohms / Empty = 107 ohms.

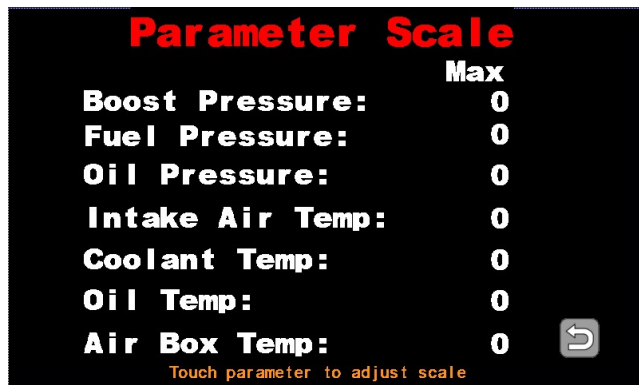


TRAC and BOOST PWM Steps:

Use these two buttons to configure how many steps are to be programmed in the Infinity Tuner software for Boost and Slip. Typically the scale is from 0-5 volts and the max amount of steps allowed is 7 which give you 8 settings (0-7).

Example: a value of 7 here would make each step would have a value of .71 volts. A value of 1 here would give the step a value of 5 volts. It is **imperative** to view each step in the infinity tuner

software when configuring this as there could be a potential difference with regard to ground.



Parameter scale: Use this screen to set the maximum range for boost pressure and various temperature slide bars and graphs.

Example: You will be running a 30 psi boost target. The max boost pressure could be 35 psi

to give the slide bars and graphs the best

resolution. The same goes for temperatures. These values should be entered with respect to which units are selected: SI or SAE. If SI units are selected, Boost Pressure should be entered in kPa and temps should be entered in Celsius. If SAE units are selected, Boost Pressure should be entered in psi and temps in Fahrenheit.

O2 Count 1X (2x) Use this to display 1 or 2 wideband sensor readings.

RPM Scale This button switches the RPM scale from 8K RPM to 10K rpm.

Display E% This button adds or removes ethanol content on the screen.

Fuel Level This button adds or removes the fuel level gauge on the screen.

Auto Dim This button enables and disables the auto dim feature.

Warnings Use this to disable the warnings generated by Infinity.

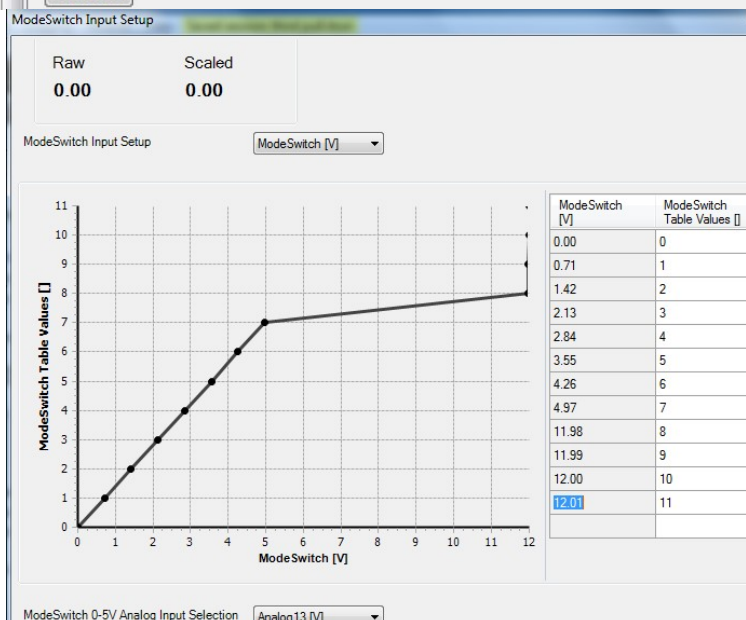
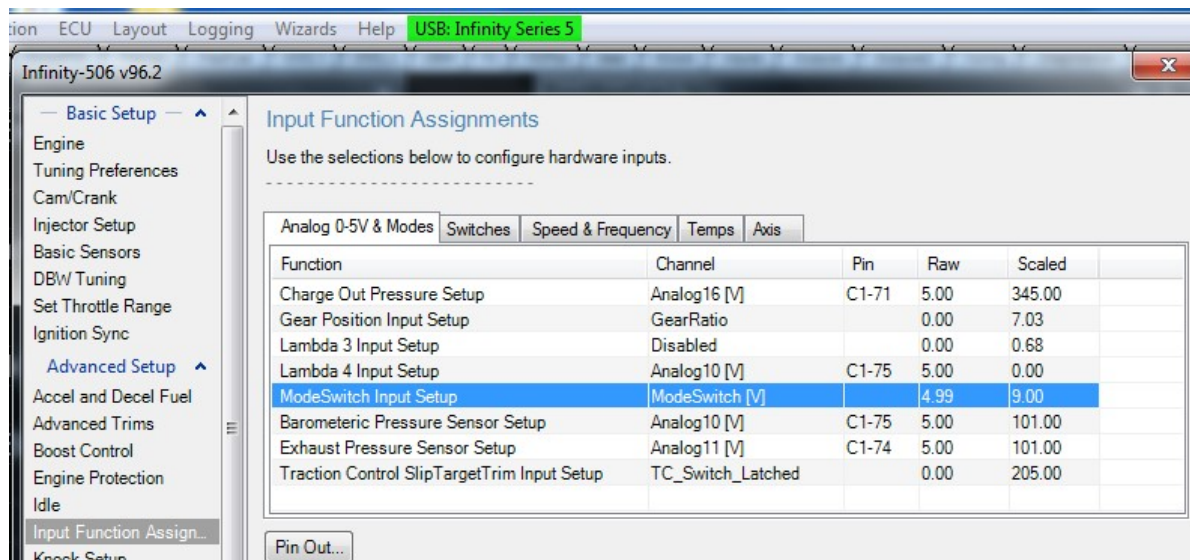
Boost and Trac configuration:

**** Note that these two settings should be configured by competent personnel. Raising the BOOST too much or reducing the SLIP too much can have severe consequences. ****

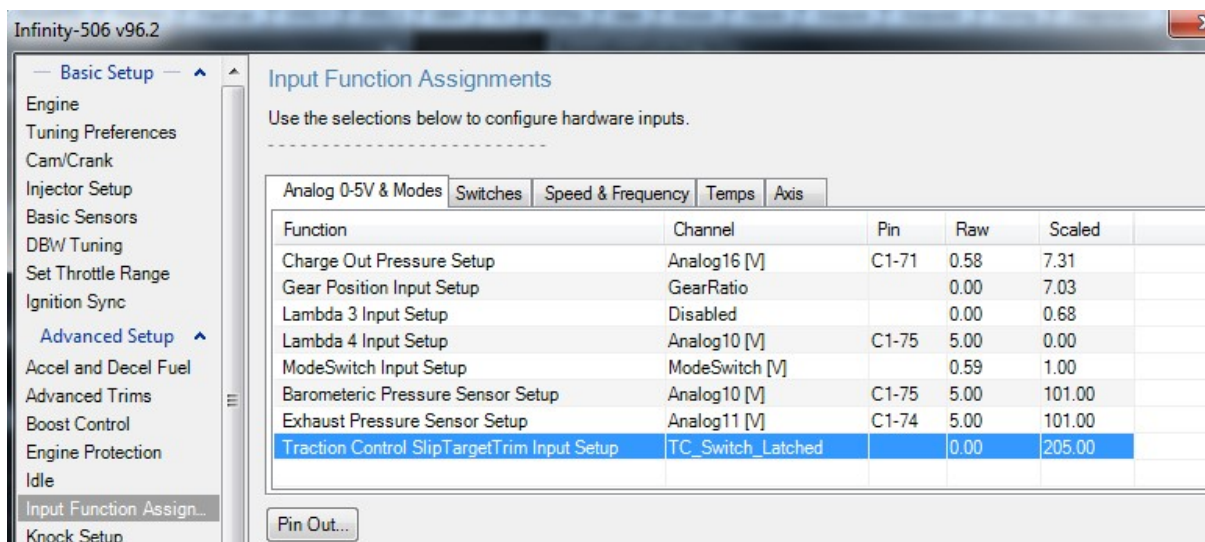
Both the Boost and Traction Control settings must be configured in the AEM Infinity Tuner software under: **Wizards > Advanced Setup > "ModeSwitch Input Setup" or "Traction Control Slip Target Trim Input Setup"**.

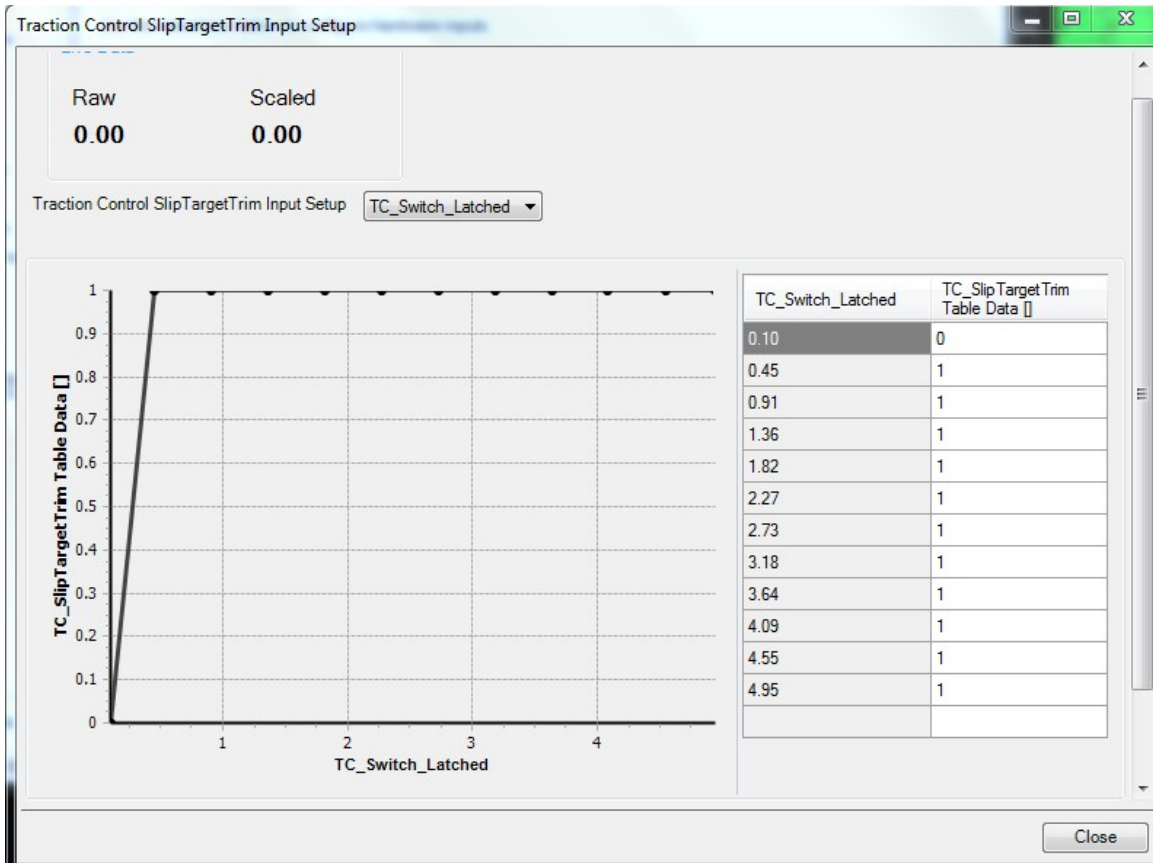
It is imperative to configure these inputs correctly. This is what that setup looks like in the Infinity Tuner software: (if you are uncomfortable here, please take your vehicle to a competent shop)

Example Boost Setup:



Example Trac Setup:





Shift Light Configuration:

Touch the gear that you wish to change the shift light

RPM on. That gear number will appear above the up and down arrows for verification. Use the up and down arrows to adjust the shift light RPM set-point of said gear. Press the back arrow button at the bottom right hand corner to save the

settings. PRE-SHIFT will fade the outside orange LEDs in the value less than the assigned RPM per gear. The shift light should flash once the settings are saved.

** Note that all GPS, G-force and Yaw readings are derived from the AEM Vehicle Dynamics Module ([PN 30-2203](#)). The absence of this module will result in a "0" value on corresponding readings.

External selection connection: (small 4 pin connector on the back)

Use this connection to select through screens as well as adjust boost and slip targets. Toggling the Black, Yellow, and Yellow wires to Ground (Red) will move the cursor on the display to allow screen and target selection without using the touch screen.



Warranty:

All BTI Gauges carry a 1 year warranty effective at the time of purchase.

- ☐ This warranty extends only to products distributed and/or sold by BTI Gauges. It is effective only if the products are purchased and operated in the USA. (Within the USA including US 48 States, Alaska and Hawaii.)
- ☐ This warranty covers only normal use of the computer. BTI Gauges shall not be liable under this warranty if any damage or defect results from (i) misuse, abuse, neglect, improper shipping or installation; (ii) disasters such as fire, flood, lightning or improper electric current; or (iii) service or alteration by anyone other than an authorized BTI Gauge representative.
- ☐ You must retain your bill of sale or other proof of purchase to receive warranty service.
- ☐ No warranty extension will be granted for any replacement part(s) furnished to the purchaser in fulfillment of this warranty.
- ☐ Warranty claims must be sent to sales@btigauges.com.