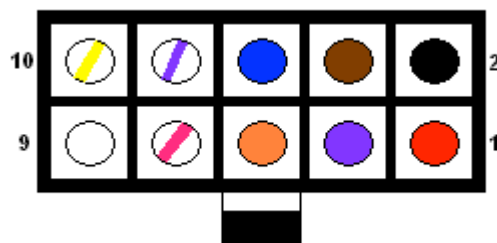# Piccolo STX Installation Manual

1 Pinout configuration

Back view of the connector

Pin #	Color of wire on mating connector	Pin Description	
1	**Red**	**External power input Positive pin (+) 6 -32 Volts**	
2	**Black**	Ground	
3	**Purple**	1-Wire or Analog Input (0-5v)	
4	**Brown**	Open Collector output1(500mA)	
5	**Orange**	Input1 negative input	
6	**Blue**	Input 2	
7	**White + red strip**	External buzzer	
8	**White + purple**	CANH or J1708+ (optional)	
9	**White**	Input5 positive input	
10	**White + yellow strip**	CANL or J1708- (optional)	

The STX is modular and therefore can come packaged with several different wiring layouts (depending on the different hardware options).

In order to prevent the need of using relays for IO connections, the STX has both positive and ground IO's. For example:

- Wiring the engine ON indication to one of the IO's is usually a positive input and all you need to do is take the +12 after the engine switch and wire it to the IO input designated to be a Positive IO in the diagrams below.
- A PTO on the other hand would be a Ground input IO.

2   Installing The Piccolo STX In Your Vehicle

Note: The STX supports three different Jbus protocols: CANBUS J1939, OBDII or J1708. J1939/OBDII is the default option, both protocols share the same hardware and the device simply needs to be configured for either J1939 or OBDII. J1708 requires different hardware components and is to be ordered in advance with this configuration.

2.1   Plug & Play Installation

1. Locate the vehicle's engine diagnostic port typically found in the driver's area, below the steering column at or below knee level.

2. Plug the Piccolo STX into your vehicle's ECM port, which will look like one of the options below:

Green 9-PIN J1939   **Black 9-PIN J1939**   **J1708 6-PIN**   **OBDII (16-PIN)**

Note: WLI carries a variety of plug & play harnesses, make sure you've ordered the harness compatible with your vehicle. If you are unsure of which harness to use, please consult your sales representative.

2.2   Hardwire Installation

Pre-installation notes:

- *Make sure to wire the STX directly to the main battery without having any switches in between. You may wire the STX to a wire panel and /or fuse panel only if you have verified that the connection to the specific point at the control panel or fuse panel is straight from the battery without any switches along the way.*
- *If the vehicle has more than one battery, make sure the STX is wired to the main battery only.*
- *The STX has its own fuse, but optionally it is possible to add an external 5AMP fuse to the red wire connected directly to the battery.*
- *The STX must be mounted inside the vehicle's cabin, with the front side (LED side up) of the unit facing the sky.*
- *If your STX is packaged with Driver Behavior software, see section 4 (STX accelerometer mounting instructions) of this document for mounting instructions.*
- *If the unit is mounted under the dashboard, be sure to secure it so it will not move. Try to find metal support under the dashboard and mount it or tape it depending on the case. Make sure the device is mounted securely in place, if the device comes loose, there is a risk the unit will move and interrupt the GPS signal.*
- *If you need to use screws, make sure to plug in the two side plastic holders supplied with every STX. Mount the STX at the selected location in the*

vehicle and install it with 2 screws. It is recommended to install the STX in a place that is out reach of the driver.

2.2.1   STX standard wire harness diagram

***Note:*** *The temperature sensor should be connected when power is off*
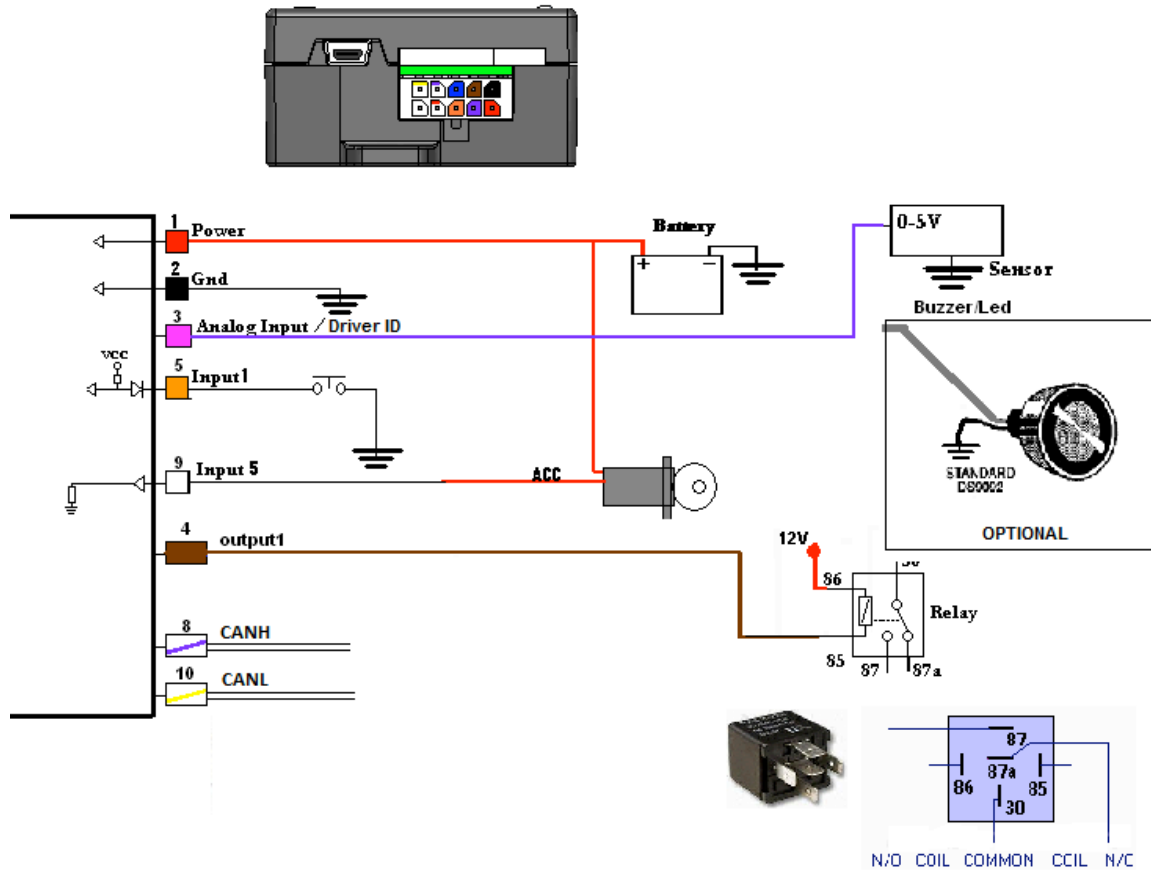
3   LED Indicators

Power: Once installed properly, the POWER led will switch solid green.
GPS: will turn solid orange when waiting for GPS fix and will switch to solid green once GPS is fixed (typically between 1-3 minutes). Will switch to solid RED on GPS Error.
Modem: Will turn solid red while registering on the cellular network. Will switch to solid green when modem is registered (in 1-5 minutes), and will switch off when no signal is present or unit is off.
Data: Solid red when data is in the buffer and waiting to be transmitted, will switch off once data is sent.
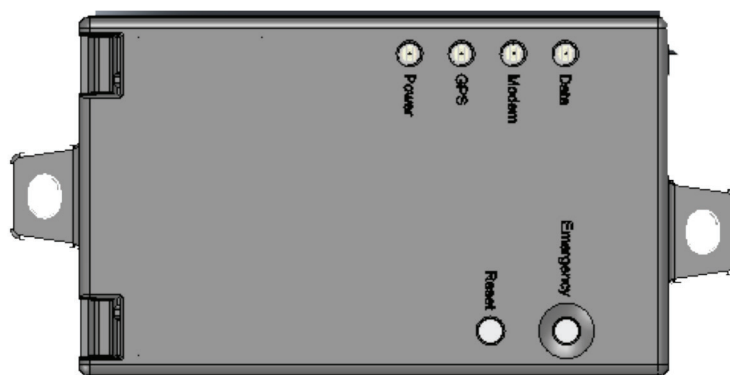
4   Piccolo STX Mounting Instructions For Driver Behavior

For optimal performance, the STX needs to be straight leveled and pointed in the driving direction with the LEDs pointing to the sky.
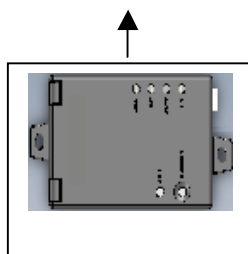
Driving direction can be one of the following 4 positions:
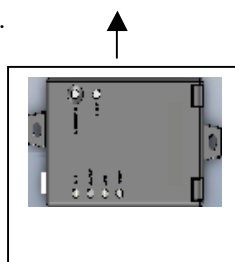*It is recommended to install all units for a given fleet in the same orientation.*

A.

B.

C.

D.

The device should be configured (see "service configuration" section in the STX user guide) according to the driving direction shown by the arrow above. Choose the direction from the pull down menu in the config tools as follows:

A->Power cable Forward, sticker down
B->Power cable Right, sticker down
C->Power cable Backward, sticker down
D->Power cable Left, sticker down

5   Internal battery

When ordered with the internal back-up battery option there is an ON/OFF switch on the backside of the unit to connect and disconnect the battery.

Note: All units are shipped switched OFF and are to be switched ON as instructed in the diagram below.