Performance Vehicle Telemetry Displays

www.btigauges.com

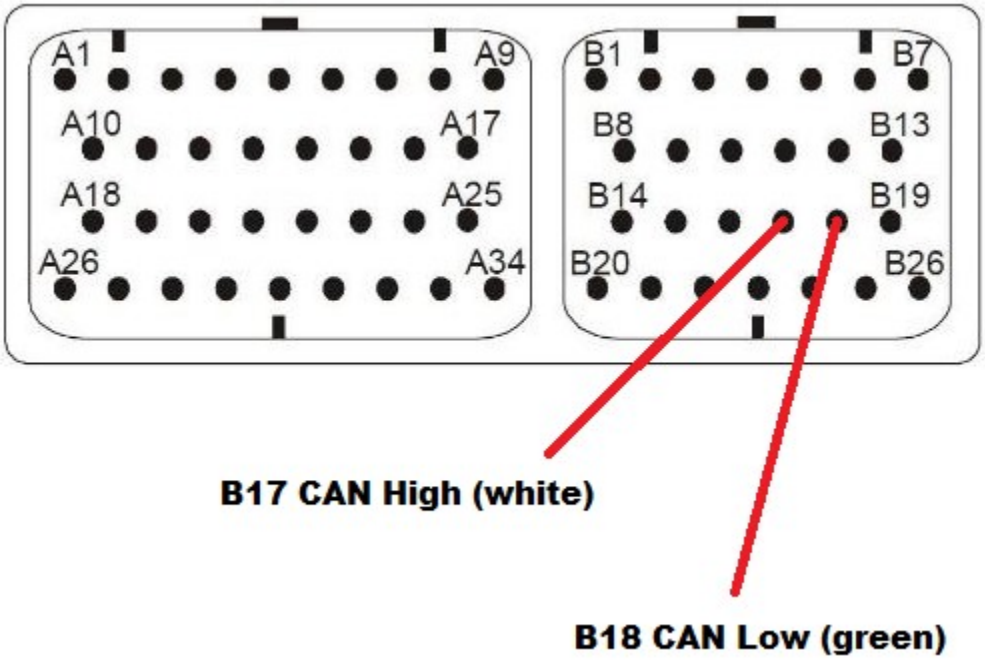
CAN Bus Gauge for MoTeC M1 Series ECUs
Installation Manual
Doc version 2.3

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.

Patent Pending

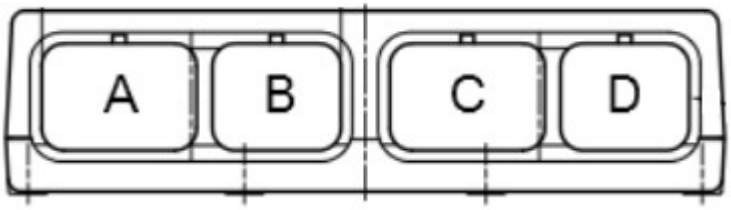
MoTeC M130 Connector Pin-out:

B17	CAN_HI	CAN Bus 1 High
B18	CAN_LO	CAN Bus 1 Low



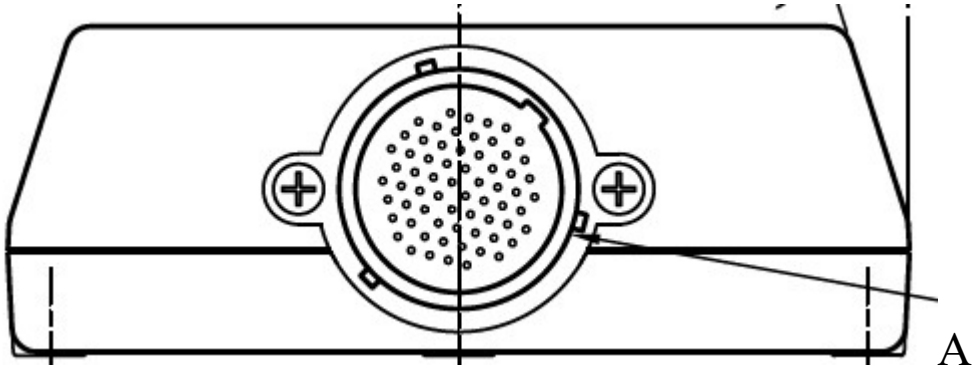
MoTeC M142 and M150 Pin-out:

D17	CAN1_HI	CAN Bus 1 High
D18	CAN1_LO	CAN Bus 1 Low



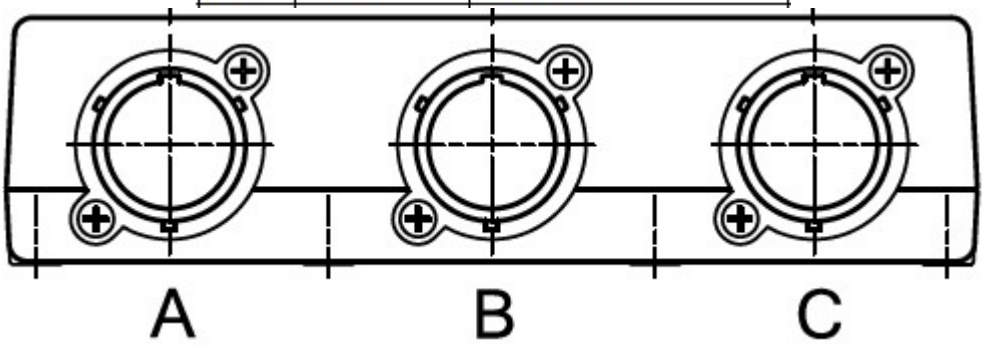
MoTeC M170 Pin-out:

A31	CAN_LO	CAN Bus 1 Low
A40	CAN_HI	CAN Bus 1 High



MoTeC M182 & M190 Pin-out:

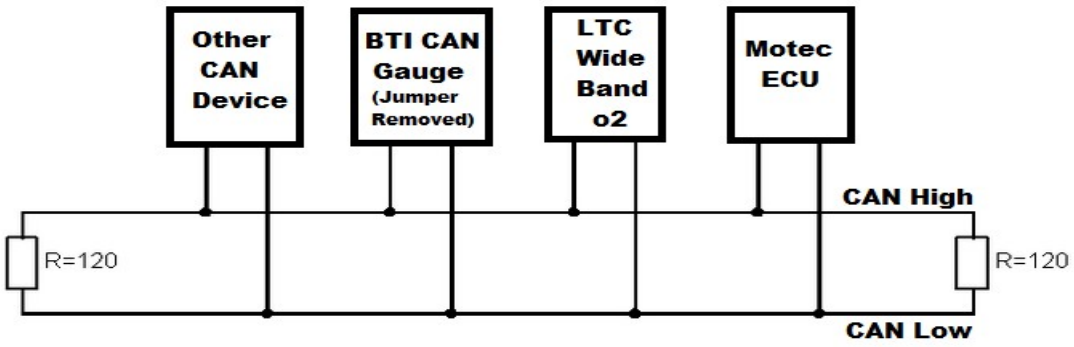
C24	CAN1_HI	CAN Bus 1 High
C31	CAN1_LO	CAN Bus 1 Low

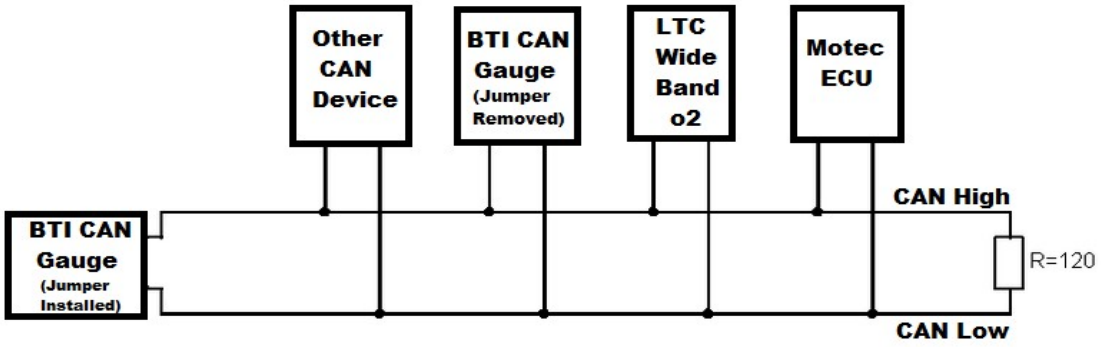


Making the connections:

The terminations to the Motec CAN bus are relatively simple as it only consists of two wires: CAN High and CAN Low. These connections can be soldered to the CAN bus or you may use the supplied 3M T-Tap connectors.

Note that the Termination Jumper located in the back of the BTI gauge should be removed if the gauge is not the last device in the CAN bus or there is already a termination resistor in your CAN bus.

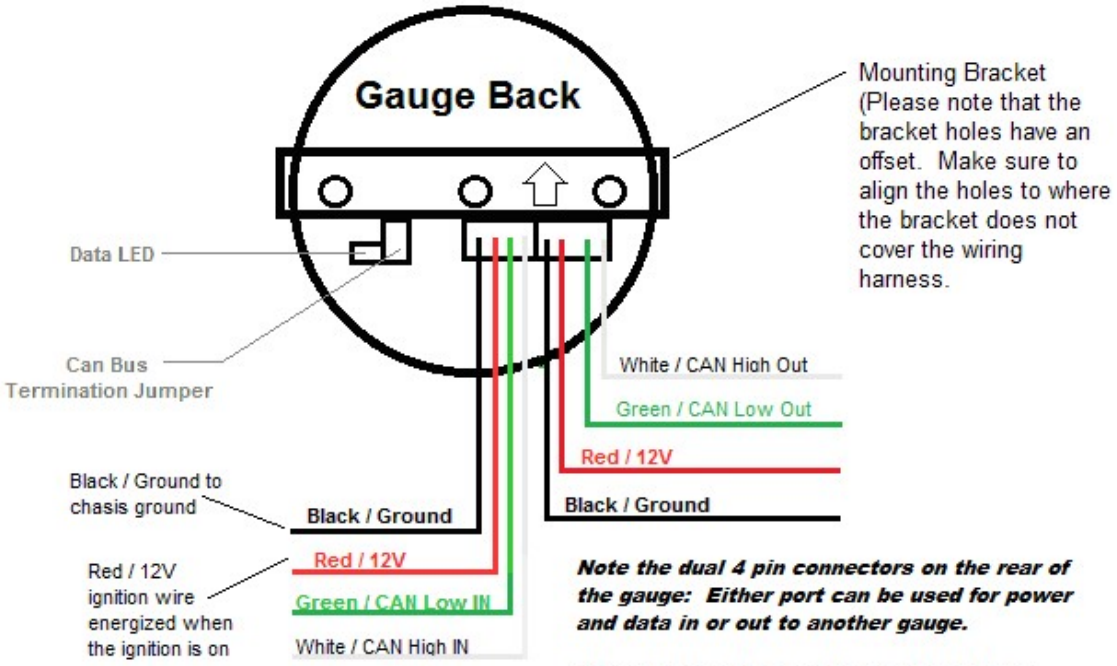




Data LED: This indicator will flash when ever the gauge is energized and CAN communications are present. Use this to confirm communications.

CAN Bus Termination Jumper: Remove this jumper if the gauge is not the last device on the CAN Bus. If there are multiple gauges, the last gauge should be the only gauge with the jumper installed.
Leave the jumper installed if the gauge is a stand alone installation and there is nothing else on the CAN Bus.

Gauges can be chained together with optional expansion cables available from BTI Gauges.



Note the dual 4 pin connectors on the rear of the gauge: Either port can be used for power and data in or out to another gauge.

(Expansion cables can be purchased from www.btigauges.com or your BTI dealer)

Only the last gauge in a multi-gauge configuration should have the termination jumper installed.

M1 CAN bus options:
This gauge is designed to read the O2 sensor data from an LTC wideband controller. The gauge will look for sensor #1 data on 0x460 and sensor #2 data on 0x461 which should be default values. In the event that you do not have an LTC, some of the more popular packages will output the analog O2 sensor data on the first byte of 0x651. The gauge will look for O2 sensor #1 data there if no LTC modules are detected.

This gauge is also equipped to look for up to 8 additional temperature sensors if a TC8 module is present. The CAN address for the TC8 must be set to 0xF0 and "Standard Mode {Temp C}" must be selected.

Baud Rate Configuration: Press and hold the right button after energizing the gauge until the Baud Rate selection screen appears. Use the right and left button to select 125 Kb/s, 250 Kb/s, 500 Kb/s, and 1Mb/s. Press Accept once the desired baud rate is selected. Note that the CAN receive baud rate is set to 1Mbps.

Warnings: Press and hold the right button after energizing the gauge. After accepting the Baud Rate setting, you will be prompted to enable or disable the warnings that will display on the gauge when they are generated by the ECU. Pressing "Accept" will save this setting and exit the configuration setup.

Operation:
Upon powering up a properly terminated gauge, the Gauge will display the interface and version number,
The gauge will then display a splash screen if one is programmed.
Following the splash screen, the gauge will display the first screen. (This screen usually has a parameter assigned from testing the gauge after manufacturing)
The remaining 11 screens will display the following message:
"No parameter selected for screen # 1-12"
Use the Left or Right buttons to scroll through the 12 screens.
Use the center button to enter the screen configuration.
Once in the screen configuration, use the Left or Right buttons to scroll to the desired parameter or compound parameters that you wish to assign to the selected screen number.
After the desired parameter or parameters have been selected, use the Center button to complete the screen assignment.
When the gauge is powered off, the last screen that was used for more than 60 seconds will be the next screen displayed when power is reapplied to the gauge.

Shift Light Configuration:
Press and hold the left button after energizing the gauge until the shift light configuration screen appears. The menu will prompt you to enter an RPM number for each gear (1-5). Use the left and right button to increment or decrement the RPM value. Use the center button to save the value for each gear. The shift light will flash once the setup is complete.

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 should be sent to: sales@btigauges.com.