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TMT7839$_{TB}$ Universal Translator
(J1708/J1587 to J1939)

User Manual

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1. Installation

Four mounting holes on the flanges of the TMT7839 are provided for mounting.

Make the following connections at the screw terminals of the TMT7839

- +12/24V power to terminal 7
- Chassis ground to terminal 4
- J1708/J1587+ wire to terminal 5
- J1708/J1587- wire to terminal 6
- J1939+ wire to terminal 3
- J1939- wire to terminal 2

The J1939 data bus *must* have proper terminating resistors installed. Ensure that the J1939 data bus has two 120 ohm resistors connected between J1939+ and J1939-. The resistors should be installed at each physical end of the bus.

Note: The TMT7839 is not waterproofed and must not be exposed to the elements.

Attention: *Once installed, we recommend using the built-in USB port to scan the J1939 and J1587/J1708 databuses. This will provide a reference list of all the information available from the other connected devices and engine as well as all the devices that are present. See the CAI ToolBox software manual for more information.*

2. Translated Parameter List (J1708/J1587 to J1939)

PID	Description
19	Extended Range Engine Oil Pressure*
44	Attention/Warning Indicator Lamp Status **
51	Percent Throttle Position
52	Engine Intercooler Temperature
69	Two Speed Axel Switch Status
70	Parking Break Switch Status
84	Road Speed
91	Percent Accelerator Pedal Position
92	Percent Engine Load
94	Fuel Delivery Pressure
96	Fuel Level
98	Engine Oil Level
99	Engine Oil Filter Differential Pressure

100	Engine Oil Pressure
101	Crankcase Pressure
102	Boost Pressure
103	Turbocharger #1 Speed
104	Turbo Oil Pressure
105	Intake Manifold Temperature
109	Coolant Pressure
110	Engine Coolant Temperature
111	Coolant Level
124	Transmission Oil Level
127	Transmission Oil Pressure
158	Battery Potential (Voltage) – Switched
166	Rated Engine Power
168	Battery Potential (Voltage)

172	Air Inlet Temperature
173	Exhaust Gas Temperature
174	Fuel Temperature
175	Engine Oil Temperature
176	Turbo Oil Temperature
177	Transmission Oil Temperature
182	Trip Fuel
183	Fuel Rate (Instantaneous)
184	Instantaneous Fuel Economy

185	Average Fuel Economy
186	Power Takeoff Speed
189	Rated Engine Speed
190	Engine Speed
194	Transmitter System Diagnostic Code and Occurrence Count Table ***
245	Total Vehicle Distance
247	Total Engine Hours
250	Total Fuel Used

* Both PID19 and PID100 are translated to SPN100. If Both PIDs are available simultaneously, PID19 will be used.

** If PID44 is not available, the TMT7839 will provide a self-generated value based on the presence of active trouble codes from the engine.

*** The TMT7839 makes use of both proprietary and standard trouble code definitions in order to fully support the translation of PID194. Please contact us for more information.

3. Product Dimensions

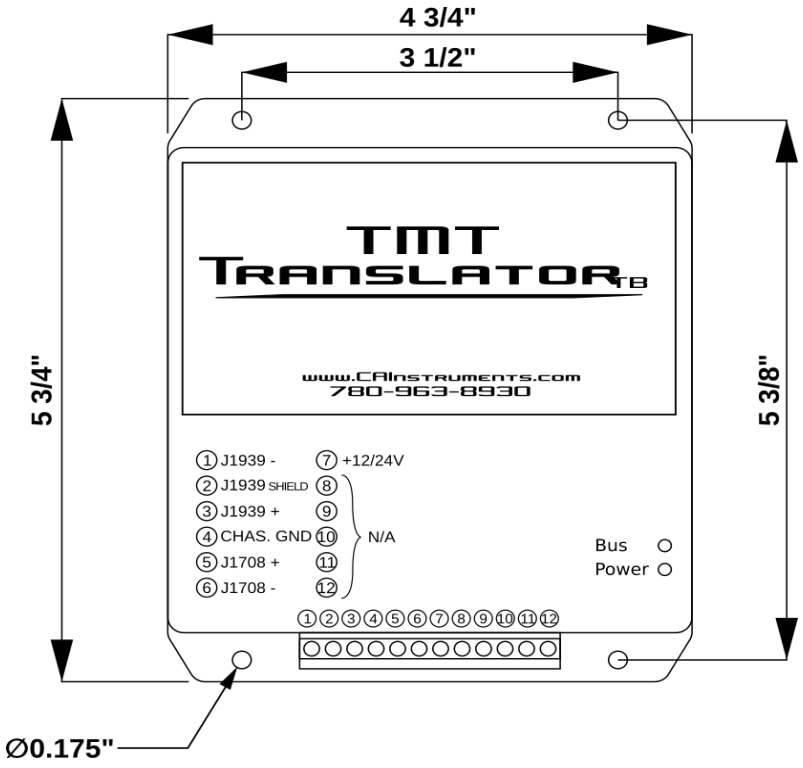

Illustration 1: Mounting dimensions

4. Troubleshooting

4.1 Scanning the J1939 and J1587/J1708 Databuses

Start any troubleshooting by performing scans of the J1939 and J1587/J1708 databuses using the TMT7839's built-in USB and the CAI ToolBox software. This will often reveal useful information for determining problem causes and will speed up the troubleshooting process. For more information, refer to the CAI ToolBox user manual.

4.2 LED Status Indicators

The TMT7839 has 2 diagnostic LEDs on its front face, labeled BUS and POWER. The POWER LED is lit when the power is supplied. The BUS LED will pulse blue when the TMT7839 is receiving J1587/J1708 data, otherwise the LED will pulse green or flash if there's an error.

See the chart below for a full list of error/operating modes.

LIGHTS	STATUS	ACTION
BUS: *Off* POWER: *Off*	No power	-Check the connections to 12/24V power and chassis gnd -Check that any connected fuses are not blown
BUS: *Pulsing Green* POWER: *Solid Red*	Not receiving J1587/J1708 data	-Check the connections to the J1587/J1708 bus -Check the J1587/J1708 databus voltage -Ensure other devices on the bus are powered and working
BUS: *Flashing Yellow* POWER: *Solid red*	No J1939 databus detected	-Check connections to the J1939 databus -Check the J1939 databus voltage -Ensure other J1939 databus devices are powered and working -Ensure the J1939 databus has proper terminating resistors installed
BUS: *Pulsing blue* POWER: *Solid red*	Everything is OK; J1587/J1708 data is being received	
BUS: *Pulsing purple* POWER: *Solid red*	Everything is OK; device is in J1939 analyzer mode or J1587/J1708 analyzer mode	
BUS: *Flashing yellow/red* POWER: *Solid red*	Device is in flash mode	-Cycle power to the TMT7839 -If the TMT7839 powers immediately into flash mode, contact CAI technical support.

4.3 Checking the J1587/J1708 and J1939 Databus Voltages

Make sure the TMT7839 is powered and the vehicle ignition is on. With a voltage meter set to DC, measure the voltages on the J1587/J1708+, J1587/J1708-, J1939+, and J1939- wires separately. Each wire must be measured relative to ground.

WIRE	EXPECTED VOLTAGE
J1587/J1708 +	3.5V – 4.5V
J1587/J1708 -	0.5V – 1.5V

WIRE	EXPECTED VOLTAGE
J1939 +	2.5 – 3.5V
J1939 -	1.3V – 2.3V

5. Electrical Specifications

Num	Rating	Min	Typical	Max	Unit
1	Operating Voltage	9.0	12.0	30.0	V
2	Transient Voltage (Max 3 positive transients, 60 seconds intervals)	-	-	80.0	V
3	Power Consumption (12VDC Supply)	-	60	150	mA
4	Operating Temperature	-40	-	80.0	°C
5	Repetitive Reverse Polarity Voltage (Voltage at GROUND relative to +12/24V)	-	-	200	V
6	Reverse Polarity Duration (GROUND @ +100V relative to +12/24V)	-	-	∞	s

6. Contact and Technical Support

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