

CAINSTRUMENTS

33 Boulder Blvd. Stony Plain, AB, T7Z 1V6, Canada

www.cainstruments.com

Ph: (780) 963-8930

TMTCDL39 CAT Data Link to SAE J1939 Translator

User Manual



Table of Contents

| | |
|---|---|
| 1. Introduction..... | 3 |
| 2. Installation..... | 3 |
| 3. Configuration..... | 4 |
| 4. Translated Parameter List..... | 4 |
| 5. Troubleshooting..... | 5 |
| 5.1 CHECKING THE CDL BUS VOLTAGE..... | 5 |
| 6. Electrical Specifications and Certification..... | 6 |
| 7. Contact and Technical Support..... | 6 |

Illustration Index

| | |
|--|---|
| Illustration 1: Mounting dimensions..... | 4 |
|--|---|

1. Introduction

The TMTCDL39 reads data directly from a CDL ECU and transmission and transmits the translated equivalent data on a SAE J1939 network. The TMTCDL39 a simple and easy-to-use solution for making data from older engines available to newer SAE J1939 devices.

2. Installation

Physical mounting is accomplished using the 4 mounting holes found on the upper and lower flanges of the TMTCDL39.

Electrical installation is done by the following:

1. Connect terminal 5 to CDL+, and terminal 6 to CDL-.
2. Connect terminal 1 to J1939-, and terminal 3 to J1939+.
3. If the J1939 has a shield wire, connect it to terminal 2.
4. Connect a good chassis ground to terminal 4, and ignition (switched) power through a 5 amp fuse to terminal 7.

Note: The TMTCDL39 is not waterproofed. If the unit is mounted vertically, ensure the terminal strip is facing downward to reduce the risk of water leaking into the device.

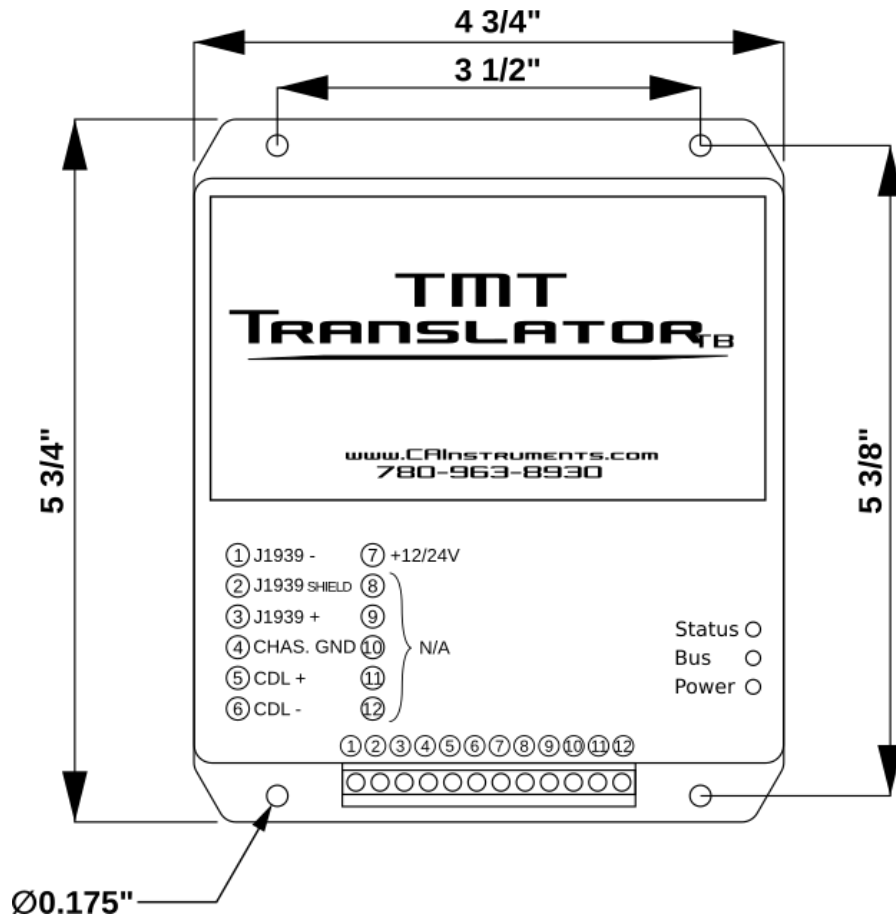


Illustration 1: Mounting dimensions

3. Configuration

The TMTCDL39 comes pre-programmed with support for several common CDL parameters. However, depending on the specific equipment connected, more information may be available that is not supported by the TMTCDL39.

To address this, the TMTCDL39 has a built-in USB port which can be used with the CAI ToolBox software to scan the connected equipment and obtain a list of available information. This information can be submitted to CAI to receive a customized configuration that adds support for all available parameters.

4. Translated Parameter List

The default TMTCDL39 translates the following parameters, if available:

- Engine RPM

- Engine boost pressure
- Engine oil pressure
- Engine coolant temperature
- Engine fuel level
- Total engine hours
- Percent engine load
- Battery potential

Additional parameters can be added so long as they are available on the the CDL. For more information, [contact us](#).

5. Troubleshooting

The TMTCDL39 has 3 diagnostic LEDs on its front face. They are labeled BUS and POWER. The POWER LED is lit when the TMTCDL39 is powered. The BUS LED will pulse blue when the TMTCDL39 is receiving CDL data, otherwise the LED will pulse green.

See the chart below for additional error/operating modes.

| LIGHTS | STATUS | ACTION |
|--|--|--|
| STATUS: <i>Off</i> BUS: <i>Off</i> POWER: <i>Off</i> | No power | -Apply power -Check power wiring and voltage levels |
| STATUS: <i>Pulsing green</i> BUS: <i>Off</i> POWER: <i>Solid red</i> | Not receiving CDL data | -Check the connections to the CDL bus -Check the CDL bus voltage (see below) -Ensure other devices on the bus are powered and working |
| STATUS: <i>Flashing Amber</i> | No SAE J1939 network detected | -Check connection to the SAE J1939 bus -Ensure other SAE J1939 devices are powered and working -Ensure SAE J1939 terminators are installed |
| STATUS: <i>Pulsing green</i> BUS: <i>Solid green</i> POWER: <i>Solid red</i> | Everything is OK; CDL data is being received | |

5.1 CHECKING THE CDL BUS VOLTAGE

Make sure the TMTCDL39 is powered and the vehicle ignition is on.

With a voltage meter set to DC, measure the voltages on the CDL+ and CDL- wires separately. Each wire must be measured relative to ground (terminal 6).

| WIRE | EXPECTED VOLTAGE |
|-------|------------------|
| CDL + | 3.5V – 4.5V |
| CDL - | 0.5V – 1.5V |

6. Electrical Specifications and Certification

| 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 (+12V/24V @ 12VDC) | - | 55 | 150 | mA |
| 4 | Operating Temperature | -40 | - | 80.0 | °C |
| 5 | Repetitive Reverse Polarity Voltage (Voltage at GND relative to +12V/24V) | - | - | 200 | V |
| 6 | Reverse Polarity Duration (GND @ +100V relative to +12V/24V) | - | - | ∞ | S |

7. Contact and Technical Support

Phone: +1 (780) 963-8930
Fax: +1 (780) 963-8230
Email (sales): sales@c-a-i.net
Email (support): support@c-a-i.net
Website: www.cainstruments.com
Address: Canadian Automotive Instruments Ltd.
 33 Boulder Blvd.
 Stony Plain, AB CANADA
 T7Z 1V6