

# **CAInSTRUMENTS**

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## **TMTCDLN2K CAT Data Link to NMEA 2000 Translator**

### **User Manual**



# Table of Contents

1. Introduction.....	3
2. Installation.....	3
3. Configuration.....	4
4. Translated Parameter List.....	5
5. Troubleshooting.....	5
5.1 CHECKING THE CDL BUS VOLTAGE.....	6
6. Supported PGNs.....	6
6.1 Received PGNs.....	6
6.2 Transmitted PGNs.....	6
7. Electrical Specifications and Certification.....	7
8. Contact and Technical Support.....	8

# Illustration Index

Illustration 1: Mounting dimensions.....	1
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## 1. Introduction

The TMTCDLN2K reads data directly from a CDL ECU and transmission and transmits the translated equivalent data on a NMEA 2000 network. The TMTCDLN2K a simple and easy-to-use solution for making data from older engines available to newer NMEA 2000 devices (such as MFDs).

The TMTCDLN2K supports a wide variety of engine and transmission information, which is listed in the Supported PGNs section.

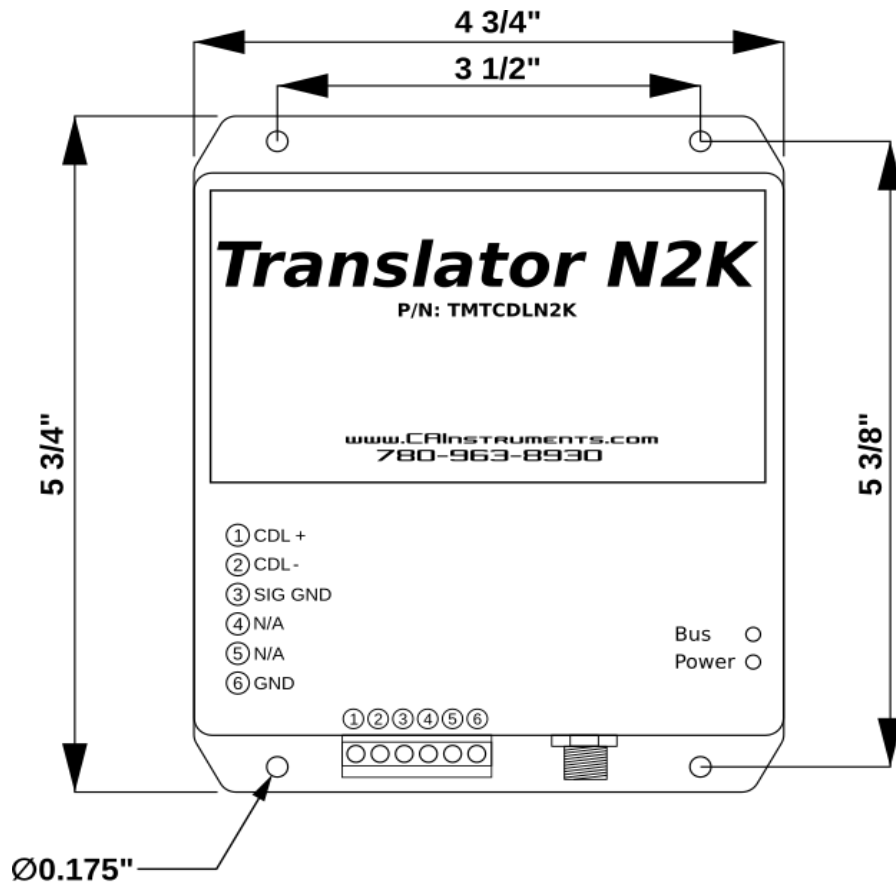
## 2. Installation

Physical mounting is accomplished using the 4 mounting holes found on the upper and lower flanges of the TMTCDLN2K.

Electrical installation is done by the following:

1. Terminal 6 (GND) should be connected to a common ground between the TMTCDLN2K and the CDL bus.
2. Connect terminal 1 to CDL+, and terminal 2 to CDL-.
3. If the CDL bus contains a signal GND wire, connect it to terminal 3.
4. Connect the device to the NMEA 2000 network via the micro-c connector and a NMEA 2000 drop cable.

**Note:** The TMTCDLN2K 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

Configuration of the TMTCDLN2K is done primarily via the built-in USB interface and the TMTCDLN2K Configuration Software. Configurable properties include:

- NMEA 2000 properties
  - System instance
  - Device instance
  - Output engine, transmission, battery, and fluid instances
  - Installation labels

The TMTCDLN2K's system instance, device instances, and installation labels are also configurable via the Command Group Function PGN (126208).

## 4. Translated Parameter List

The TMTCDLN2K 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 TMTCDLN2K has 2 diagnostic LEDs on its front face. They are labeled BUS and POWER. The POWER LED is lit when the TMTCDLN2K is powered. The BUS LED will pulse blue when the TMTCDLN2K is receiving CDL data, otherwise the LED will pulse green.

See the chart below for additional error/operating modes.

<b>LIGHTS</b>	<b>STATUS</b>	<b>ACTION</b>
BUS: <i>Off</i> POWER: <i>Off</i>	No power	-Check connection to the NMEA 2000 bus -Ensure the NMEA 2000 bus is powered
BUS: <i>Pulsing Green</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
BUS: <i>Flashing Yellow</i> POWER: <i>Solid red</i>	No NMEA 2000 network detected	-Check connection to the NMEA 2000 bus -Ensure other NMEA 2000 devices are powered and working -Ensure NMEA 2000 terminators are installed
BUS: <i>Pulsing blue</i> POWER: <i>Solid red</i>	Everything is OK; CDL data is being received	
BUS: <i>Pulsing purple</i> POWER: <i>Solid red</i>	Everything is OK; device is in N2K analyzer mode or CDL analyzer mode	

BUS: <i>Flashing yellow and red</i> POWER: <i>Solid red</i>	Device is in flash mode	-Cycle power to the TMTCDLN2K -If the TMTCDLN2K powers immediately into flash mode, contact CAI technical support.
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## 5.1 CHECKING THE CDL BUS VOLTAGE

Make sure the TMTCDLN2K 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. Supported PGNs

### 6.1 Received PGNs

59392	ISO Acknowledge
59904	ISO Request
60160	Connection Management
60416	Transport Protocol
60928	Address Claim
65240	Commanded Address
126208	Group Function

### 6.2 Transmitted PGNs

59904	ISO Request
59392	Acknowledgement
60160	Connection Management
60416	Transport Protocol
60928	ISO Address Claim

126208	Group Function
126996	Product Information
126998	Configuration Information
126464	PGN Tx/Rx List
126993	Heartbeat
127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127493	Transmission Parameters, Dynamic
127497	Trip Fuel Consumption, Engine
127498	Engine Parameters, Static
127505	Fluid Level
127508	Battery Status

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

<b>NMEA 2000 Certification</b>	Yes
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## 8. Contact and Technical Support

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