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OBDII to J1587/J1708 Converter Installation and Troubleshooting Guide

80-J9325-1 Rev H

July 2017

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Introduction and Installation

Introduction

The OBDII to J1587/J1708 converter is a third-party hardware device that translates OBDII light-duty vehicle data to the J1587/J1708 format that is read by Omnitracs hardware. The OBDII converter allows you to obtain Performance Monitoring and Hours of Service data from light-duty vehicles.

The OBDII supports most 1996 model year or newer vehicles that comply with the SAE International's J1979 OBDII specification.

Vehicle data received from the OBDII converter includes:

- Vehicle speed
- Engine RPM
- Total distance (odometer)
- Total fuel (life-to-date)

For more detailed information regarding Performance Monitoring installations and troubleshooting, please refer to the applicable Omnitracs installation manual for the product you are installing in conjunction with the OBDII converter.

For additional support, call Omnitracs Customer Support at (800) 541-7490.

OBDII to J1587/J1708 Converter Kit

The OBDII Converter Kit includes the OBDII Converter, a Y cable, a host cable, and an installation kit. The converter kit may be purchased from B+B SmarWorx, the Omnitrac's third-party hardware vendor as the full kit or as separate parts.

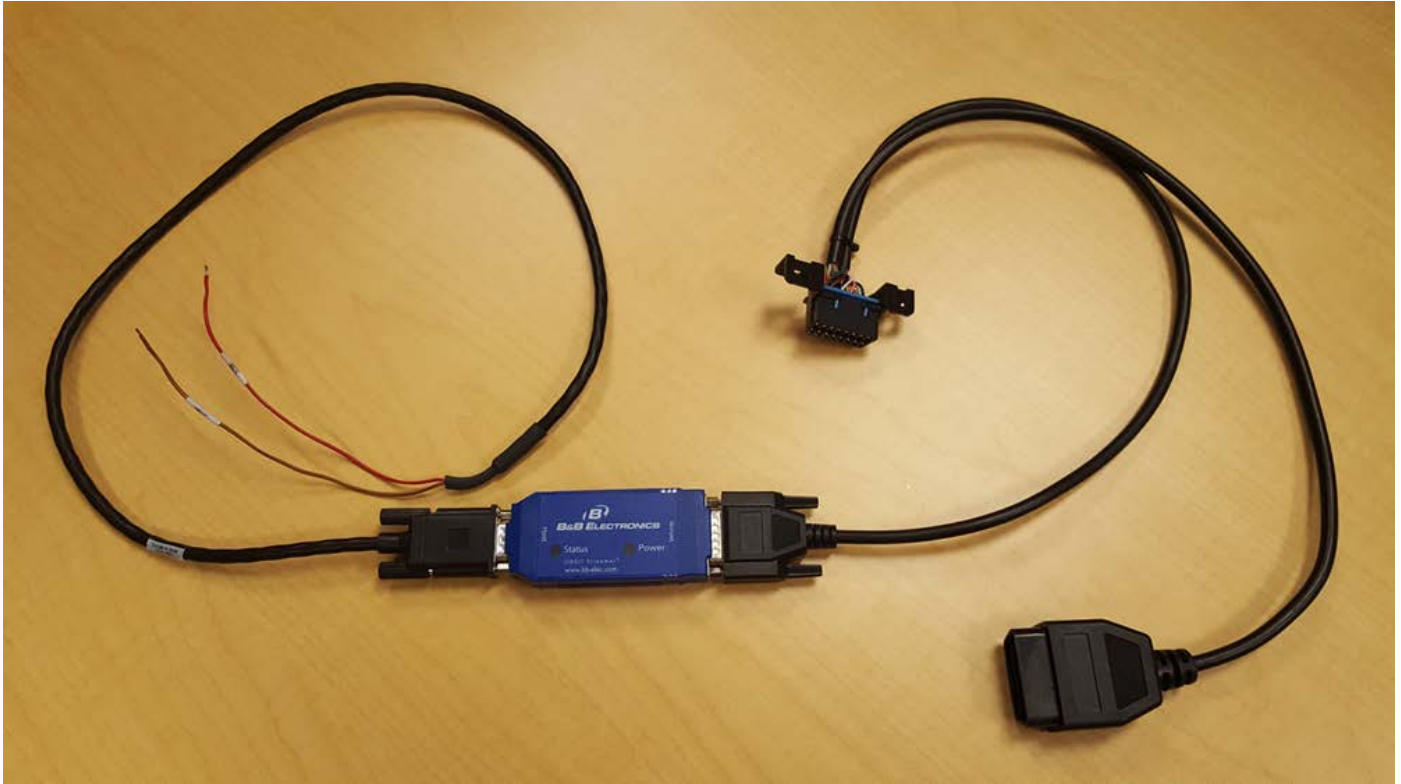


FIGURE 1. QCLDVDSV2-KIT – OBDII CONVERTER KIT

Requirements

Before you begin your installation, the following must be true.

- Performance Monitoring and Hours of Service must be enabled on the Omnitrac's in-cab hardware.
- Omnitrac's hardware must have the minimum firmware needed to support both applications.
- Performance Monitoring and Hours of Service must be enabled at the host.

Installation Precautions

Before installation, be aware of all warnings and possible dangers.



WARNING

Mounting the equipment near the vehicle's airbags can injure a driver or passenger involved in a crash.

Airbag firing can cause the equipment to become a projectile leading to serious injury or death.

Mount the equipment in a location that will not be impacted by the firing of any forward or side Airbag.



WARNING

Improper cable installation can interfere with the vehicle pedals or steering.

Interfering with the pedals or steering can cause a crash, resulting in serious injury or death.

Mount the cables so that they can not interfere with the brake, accelerator, clutch, or steering wheel, **EVEN IF THE TIE WRAPS FAIL.**



DANGER

Using a test light to probe vehicle wiring can cause the AIRBAG TO FIRE.

Airbag firing while working near the vehicle dash or steering wheel can cause serious injury or death.

Never use a test light to probe wiring
USE VOLT-OHM METER ONLY

Hardware Installation Procedures

After the hardware installation location and connection points are defined, do the following:

1. Verify that the engine ignition switch is OFF.
2. For non-IVG units, hardwire for CONSTANT POWER, GROUND, and IGNITION.
This means if a Y power cable is provided with MCP50 or IVG, the Y portion must be cut off and the wires butt spliced appropriately.
3. Make the following connections:
 - a. Connect the OBDII converter's red (Data -) wire to the red (J1587/J1708 -) wire on the Omnitracs harness.
 - b. Connect the OBDII converter's brown (Data +) wire to the brown (J1587/J1708 +) wire on the Omnitracs harness.
4. Unmount the vehicle's existing OBDII diagnostic's connector.

5. Locate the OBDII Y cable coming from the OBDII converter.
6. Connect the OBDII male connector on the Y cable into the vehicle's existing female connector.
7. Mount the OBDII female connector on the Y cable in place of the vehicle's original connector to ensure that it is available for use by the OEM or other third-party service providers.
8. Secure OBDII converter box and excess cabling using tie-wraps.

System Verification and Troubleshooting

After you install the hardware, you must verify that the installation was successful before returning the vehicle to service.

System Verification

To perform a system verification for a standard installation, do the following.

1. Start engine.
2. If necessary, verify that the MCP or IVG is configured to use J1587/J1708 data. The IVG and MCP50 should auto-detect their configurations.
3. Verify that the MCP or IVG is receiving the following core data items:
 - Distance LTD
 - Engine RPM
 - Fuel LTD
 - Speed

Some vehicles need to move at least 5 miles (8 kilometers) for the Distance LTD value to populate.

4. Do one of the following:
 - IVG, MCP50, MCP110, or MCP200: Ensure that the RUN ALL Core Data Items test passes. See the applicable installation guide for more information: *Omnitracs Intelligent Vehicle Gateway (IVG) Installation and Troubleshooting Guide (80-JE026-1)*, *MCP50 Installation and Troubleshooting Guide (80-JB566-1)*, *MCP110 Installation Guide (80-JB400-1)*, or *MCP200 Installation Guide (80-J9968-1)*.
 - MCP100: Follow system verification in the *MCP100 Installation Guide (80-J4866-2)*
5. If the mobile unit is not receiving the expected data items, check the following:
 - Check the LED table to ensure the converter is installed and working properly.
 - Check the connections between the converter and the MCP or IVG.
 - Check the Supported Parameter List to ensure the vehicle is compatible with the converter.

The Omnitrac Performance Monitoring Odometer screen's values may differ from the vehicle's dash odometer reading. This is not an error condition. This difference may be because the odometer value display on the Performance Monitoring Odometer screen is pulled from a different source than what is

displayed on the dash or a component on the vehicle that stores the odometer value may have been replaced.

Some vehicles do not provide a life-to-date odometer reading on the data bus. These vehicles rely on the OBDII converter to generate a calculated odometer value. The calculated odometer begins at zero at time of installation and these vehicles must move at least 5 miles (8 kilometers) before a valid odometer value displays.

Reading the OBDII Streamer Box LEDs

The OBDII converter has two LEDs on the top of the unit to diagnose issues.

- Status – Green LED
- Power – Red LED



FIGURE 2 CLOSE UP OF THE QCLDVDSV2

Table 1 LED Troubleshooting Table for the QCLDVDSV2

Red LED (Power indicator)	Green LED (Activity indicator)	Description
On (lit solid)	On (lit solid)	Normal operation
Off (unlit)	Off (unlit)	The converter box is in a power on self-test. If neither LED lights within 30 seconds, check vehicle power to the OBDII converter.
Off (unlit)	On (lit solid)	Firmware update required
Off (unlit)	VSB - Very Slow Blinking 0.25 seconds lit, 2 seconds off	Device asleep
On (lit solid)	SB - Slow Blinking One blink/second	Detecting vehicle
Off (unlit)	FB - Fast Blinking Eight blinks/second	Database needs to be updated. Return the converter box for service.