

InPower Decoder DEC-FD23-PB Owner's Manual Park Brake and Park Data Bus Decoder

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1.0 Introduction

InPower's DEC-FD23-PB 2023 Ford Super Duty Data Bus Decoder provides different decoded discrete signals based the Park and Park Brake Messages on the Data Bus. The DEC-FD23-FOB connects to the Chassis Data Bus for the Park and Park Brake messages at the Trailer Brake Controller Module connector. Power and Ground are connected via the OBDII connector. This Manual Covers the DEC-FD23-PB integration and use.

DEC-FD23-PB

The DEC-FD23-PB, decodes the messages on the Data Bus for the PARK BRAKE (GND and 12V True) and PARK conditions and provides them for use. These discrete outputs are controlled by an ENABLE (+12 True) signal which enables the PARK BRAKE outputs (Qty 2 - GND and 12V True) and PARK output (Qty 1 GND True). If this Enable signal goes to 0V, the Decoder will turn off the outputs (maintaining the status internally), and go to a low power mode to minimize draw on the battery. When ENABLE is reapplied, the outputs will turn on reflecting the current status.

If the truck PARK BRAKE or PARK status changes, this will wake up the truck and change the DECODER internal status of the PARK BRAKE and PARK. However this change in status will only be available on the Outputs if the ENABLE is True.

In a similar method, other messages can be decoded based on programming to activate the two outputs of this decoder. Please contact InPower Customer Service to see how we can meet your needs.

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2.0 Product Descriptions

The DEC-FD23-PB, system consists of the following components:

- DEC-FD23-PB Decoder Module
- Chassis Wiring Harness connects to Trailer Brake Controller Module Connector and OBDII connector, and provides Blunt Cut wires for control and Outputs.

3.0 Installation Procedures

3.1 Safety Precautions



WARNING



This decoder products have been designed and manufactured to meet the intended application requirements and specifications. Any modifications to the product or to the installation procedure can be dangerous and will void InPower's warranty.

- Read and understand the instructions in this manual and other manuals before starting the installation.
- Make sure that the vehicle battery power is disconnected during installation of the decoder connected systems. Reconnect the battery when the system installation is complete.
- Wear appropriate safety equipment, such as protective eyeglasses, face shield and clothing when installing equipment and handling the battery.
- Be careful when working near a battery. Make sure that the area is well ventilated and that there are no flames near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.

3.2 Getting Started

This manual provides instructions for installing the DEC-FD23-PB. It is important that you follow these instructions carefully and contact InPower if you need assistance or more information. Note that product technical documents are available on InPower's web site.



WARNING



This decoder system installation requires additional parts and materials that are not supplied with the decoder product. Identify all required parts before starting the installation and ensure that these items are the correct type and quality.

Inspect the decoder product and all other components for damage before starting the installation. Do not perform the installation if any problems exist.

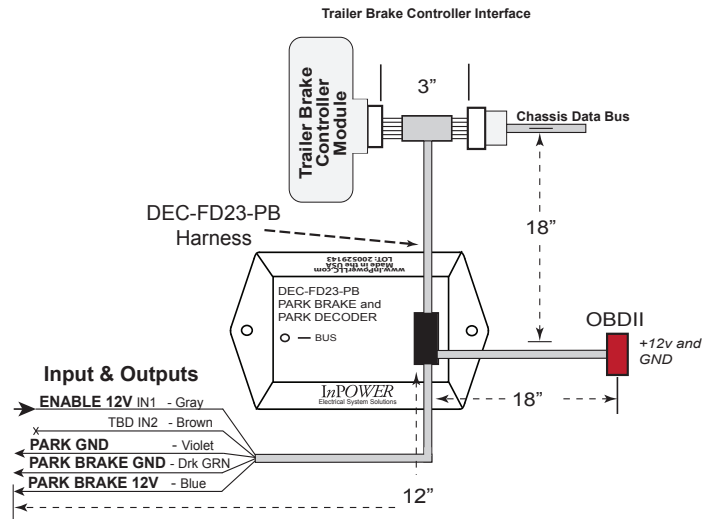
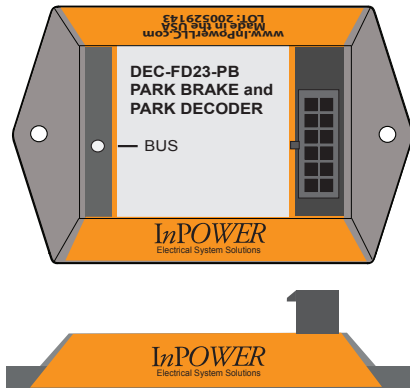
The recommended mounting location for the DEC-F23-PB Decoder module is in the center console below the shifter, due to the proximity of the wiring connections. **The unit must not be located in the engine compartment or any location that is not protected from the environment.**

4.0 System Layout Diagram

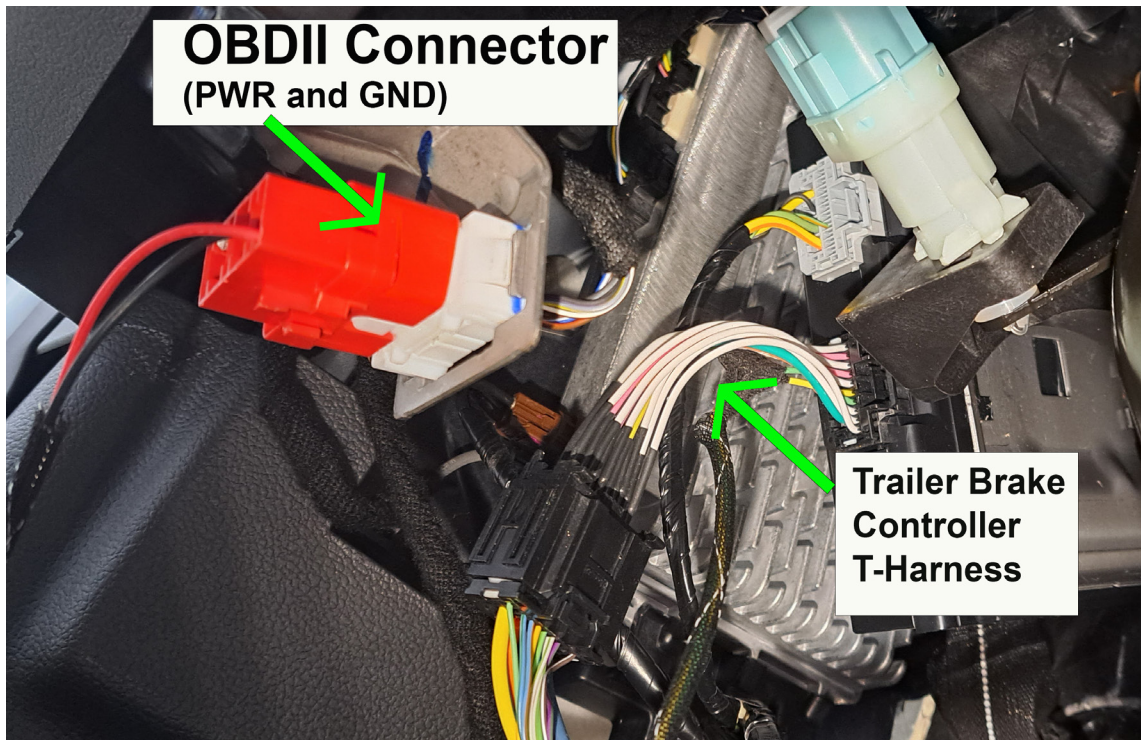
The following page shows the harness for this installation. Refer to Section 5. Wiring Instructions for details on how to wire the circuits.

Decoder Integration Diagram

**DEC-FD23-PB
PARK BRAKE and PARK Decoder**



OBDII Connection and Trailer Brake Controller T-Harness



5.0 Wiring Instructions

!!Make sure that the vehicle battery power is disconnected during installation of the Decode system. Reconnect the battery when the system installation is complete!!

This section details the connection to the vehicle for Data and Power to the decoder. Connections Shown in Section 4.0

1. Connect the OBDII connector to the OBDII Port in the vehicle this will provide both Power and Ground to the Decoder.
2. Connect the Trailer Brake Controller Module Decoder T-Harness, to collect the FOB Lock and Unlock messages from the chassis data bus.
3. Test to ensure that it has been wired correctly and that there are no loose connections.

6.0 Wiring Instructions Inputs and Outputs

Inputs

Enable - Blunt Cut Wire

This Enable signal (Gray wire) is a 12Vdc signal that when active, enables the PARK (Qty 1 GND True) and PARK BRAKE (Qty 2 - GND and 12V True) Outputs. If Enable signal is at GND, the Decoder will turn off the outputs (maintaining the status internally), and go to a low power mode to minimize draw on the battery. When ENABLE is reapplied, the outputs will turn on reflecting the current status.

If the truck PARK BRAKE or PARK status changes, this will wake up the truck and change the DECODER internal status of the PARK BRAKE and PARK. However this change in status will only be available on the Outputs if the ENABLE is True.

Output Interface Wiring - Blunt Cut Wires

Park Brake

This interface consists of 2 outputs, one which is Ground True (800mA Max Sink) (Dark Green GND) when the Park Brake is Engaged, and a second one that is 12V True (Blue 12V) when the Park Brake is engaged (800ma Max Source). Hook them up appropriately and make certain that they are not hooked to any inductive loads.

Park

This interface consists of 1 Output which is Ground True (800 mA Max Sink) when the transmission is in Park. (Violet Wire)

Installation Cleanup:

After installation and termination of all wires, reconnect the Battery.

7.0 System Operation and Checkout

1. Once the harness is completely wired with the OBDII Connector and Trailer Brake Controller Module T-Harness both connected, mount the module and plug in the harness.
2. Test to ensure that it has been wired correctly and that there are no loose connections.

7.1 Decoder Checkout System Operation

The decoder system is active when the ENABLE (12V) line is true.

BUS LED Indicator (Located on the control module)

BUS  (Red) On when the unit is communicating with the Data Bus

Verify the operation of the LEDs (vehicle OFF) by:

1. With the truck asleep - BUS should blink once every 3 seconds.
2. Waking up the truck (Open a Door) BUS should be on continuously.
3. When ENABLE is at 12V, the decoded outputs for the PARK and PARK BRAKE will both be enabled. The state of these are actually updated when the bus is active, but only available with ENABLE.

8. System Troubleshooting

If there is a problem with system operation, there is a very high probability that either the module lost its ground or +12 volt power source. Most troubles are related to wiring problems, or switches either failing or becoming out of adjustment.

Troubleshooting Procedure:

Power:

1. Determine if the control module is powered (Bus LED flashes every 3 Seconds).
2. Ensure that the OBDII connector is properly connected to the OBDII Port and 12V and Ground are actually functional on the OBDII Port.

LED Indicator

The Decoder module contains seven diagnostic LED indicators as well as the Display to aid in system troubleshooting. These show the status of input and output signals of the control module.

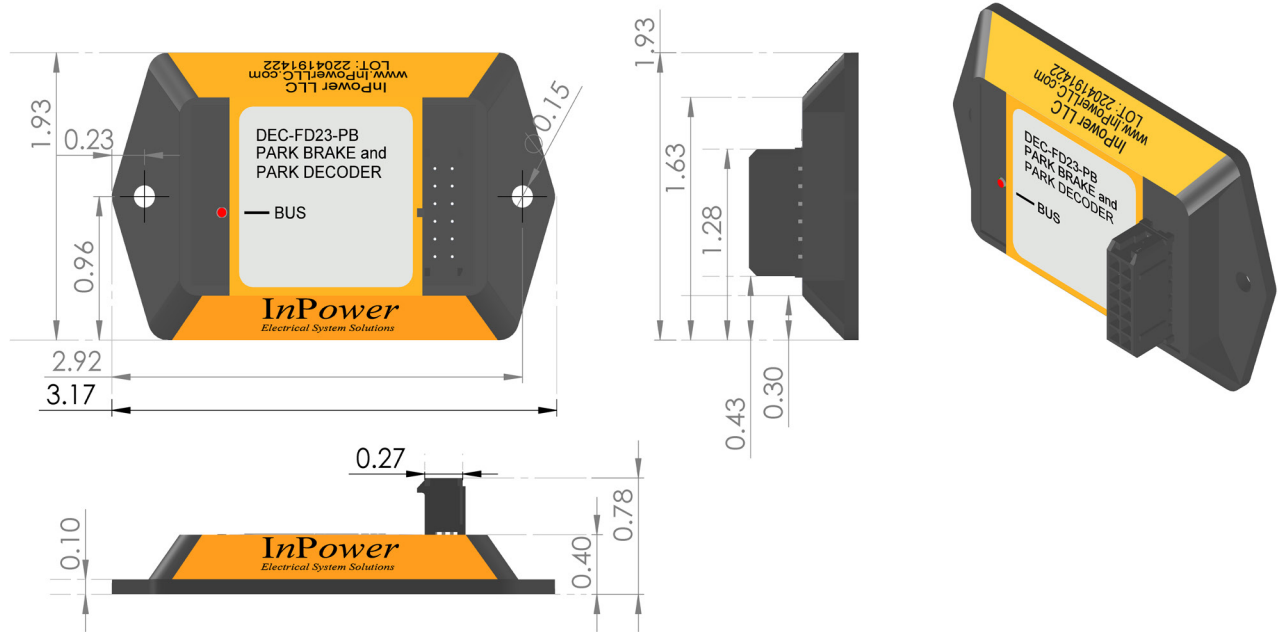
System Diagnostic LED Indicator (Located on the control module)

- BUS ■ (Red) On when the unit is communicating with the Data Bus -
If OFF, but standing by, Flashes at a 3 second rate.

Trouble Shooting:

1. Set the Park Brake, and then Release. Make certain the Park Brake Outputs reflects the change in State. The First Output is Ground True (800mA Max Sink) (Dark Green GND) and the second Output is 12V True (Blue 12V) when the Park Brake is engaged
2. Set the Shifter to Park, and then to Neutral. Make certain the Park Output reflects the change in State. The Output is Ground True (800 mA Max Sink) when the transmission is in Park. (Violet Wire)

9. Mechanical Drawing



Contact Information:

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