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BREAK-OUT BOX & PROTOCOL DETECTOR

P/N: ABOB11

Product Description

Protocol detector and break-out box for the DLC (Diagnostic Link Connector) with additional features! By connecting this tool, the technician can switch, cross, and parallel interface leads simultaneously to diagnose, analyze, test and monitor the whole testing process on a vehicle. It has LEDs that light up to display protocol detected, grounds, and voltage. It serves as DLC magnifier (makes DLC 5 times larger), DLC extender (place DLC where needed) and a "spy" (monitors the activity on each OBDII dedicated data line). It monitors voltage with a display and an alarm warning when the voltage falls below 12 Volts or goes higher than 15 volts. It can also be used as a data saver when connected to an external 12V battery while replacing the vehicle's battery.

How to Use:

1. General use:
 - a. Switch the ignition key to OFF position.
 - b. Connect the tool to the DLC on vehicle.
 - c. Turn ignition key back to ON position.
 - d. As soon as it powers up, the voltmeter will display the battery volts and automatically checks the power, grounds, DLC data wires and searches for voltage pulses.

2. Detecting Protocol in use:
 - a. Plug scan tool or interface to the tool.
 - b. Use the scan tool to view live data stream.
 - c. Check the flashing blue LEDs and match them with the protocols marked on the label of the tool.
 - d. Always turn ignition key to OFF position before removing the tool.

3. Act as Data Saver:
 - a. Connect the OBDII cable with battery clips to the tool.
 - b. Turn ignition key to OFF and connect the tool to the car DLC.
 - c. Attach the battery clip to an external battery (not the battery from the same car).
 - d. The tool will display the battery voltage and now it is ready for replacing the car battery.
 - e. After the job is done, remove the battery clips from the external battery and unplug the tool from the car.

Typical Applications:

- VW - To protect the scan tool / aftermarket radios on VWs
- BMW - Transmitter Programming on some models
- Honda - Set the ECM in SCS mode with scan tool connected
- Lexus - Help diagnose electronics systems (Sirius, GPS) on pin 6 and 14
- Bosch - Troubleshoot Bosch controllers that short to ground

Features:

- Constantly monitor battery voltage with volts display and warning beeps for Low (Below 12V) and High (Above 14.9V) – an important feature for ECU programming and coding operations.
- OBDII Breakout points with protocol and data signal detection shown by flashing color LEDs to indicate the functionality of the ECU when in operation with a scan tool.
- Data saver for ECU when connected to an external 12V battery while replacing the car battery.
- Handles up to 5 Amps DC input and output.
- Standard 4 mm female banana jack receptacles accept both standard and sheathed male banana plugs.
- Pin 16 socket is protected by a self- healing fuse rated at 5 amps.

LED Activity:

This tool's LEDs allow the technician to keep tabs on power and ground. It identifies the protocol used in the vehicle:

- **RED** LEDs (Pin 16) - automatically turn-on as soon as plugged into DLC. Red LEDs dim when: low battery voltage, wiring to DLC pin 16 is faulty, grounds circuits have resistance issues.
- **GREEN** LEDs (Pins 4 and 5) - automatically turn-on as soon as plugged into DLC. Ground LEDs (Pins 4 and 5) connected to battery voltage through pin 16. Therefore, a ground supply on pin 4 will not affect LED 5. A dim single green LED will indicate a circuit problem with the corresponding circuit.
- **BLUE** LEDs (Pins 2, 6, 7 and 10) should flash when serial data voltage pulses are present in the data line. Blue LEDs are assigned on pins 2, 6, 7 and 10 to indicate communication with scan tool or interface and for communication protocol identification. It will turn on, depending on vehicle model. For some vehicle models, none or multiple blue LEDs will turn on as soon as the tool is connected and the ignition is started. The brightness of the LEDs depends on the nature of the signal.
- **YELLOW** LEDs (Pins 1, 3, 8, 9, 11, 12, and 13) should flash when the vehicle manufacturer uses either one on the pins for specific functions.
- This Breakout Box can immediately identify the protocol used. Set-up the scan tool or interface to LIVE DATA. This will lead in a constant data stream between the scan tool and the vehicle, and then the flashing LEDs can be analyzed.

Pin Assignments

Pin # - SAE Designation

- 1 - Discretionary
- 2 - Bus + Line of SAE J1850 (PWM/VPW)
- 3 - Discretionary
- 4 - Chassis Ground
- 5 - Signal Ground
- 6 - CAN High of SAE J2284 (ISO 15765-4)
- 7 - K Line (ISO 9141-2 and ISO 14230-4)
- 8 - Discretionary
- 9 - Discretionary
- 10 - Bus-Line of SAE J1850
- 11 - Discretionary
- 12 - Discretionary
- 13 - Discretionary
- 14 - CAN Low of SAE J2284 (ISO 15765-4)
- 15 - L Line (ISO 9141-2 and ISO 14230-4)
- 16 - Unswitched Vehicle Battery Positive

IMPORTANT NOTES:

1. Pins listed as "Discretionary" indicate that the vehicle manufacturers may use them for specified purposes. Check with the manufacturer's specifications for these connections.
2. For voltage and current limits, refer to SAE J1962 (ISO 15031-3.3).
3. This tool must not draw more than 1.5 amps through the pin number 5 (signal ground).
4. Switched off, the vehicle battery positive has a maximum current capacity; pins 4 and 5 and cannot exceed 4.0 amps.
5. For extra safety, DO NOT connect this tool to the vehicle when performing an in-vehicle reflash of the PCM with the test tool or diagnostic device.
6. When activating some ABS and diagnostics wires to recover flash code, pin 4 or pin 5 can be used.
7. To power small DC loads with maximum 5 Amps, pin 16 can be used.
8. If red (power) and green (grounds) LEDs are dim or flickering when plugged connected with a scan tool via the DLC, it could indicate a problem with the vehicle's wiring, causing the voltage to drop.