



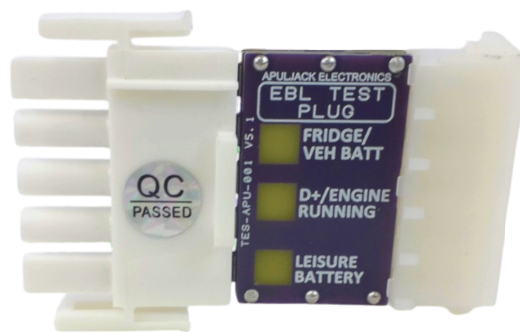
APULJACK ELECTRONICS LTD

DESIGN AND REPAIR SPECIALISTS

Apuljack EBL Test Plug

User Instructions

Product Code: TES-APU-001-NE



1. Overview

The Apuljack Electronics EBL Test Plug provides diagnostic information for most models of EBL. There are a number of common faults with these systems that are NOT as a result of the EBL being faulty. The EBL Test Plug allows users to diagnose and fix most of these issues.

2. Fitting

The test plug uses the same 5 pin connector as the existing connector that is plugged onto Block 2. The Block 2 connector should look like this;



To fit the test plug, remove the existing loom connector by squeezing the tabs on the side of it. In place of the connector removed, fit the test plug onto the EBL. Now plug the loom connector into the back of the test plug.

Once plugged in, you should immediately see the RED and GREEN lights illuminated indicating that both battery 12V CONTROL feeds are present. When you start the engine, you should also see the BLUE D+ light illuminate showing that the EBL is receiving the 'Engine Run' signal.

3. Diagnostics

Please note that the connector and pin numbers given below are applicable for most EBL units but they can differ on some models. Please check the relevant data sheet to be sure that your unit has the same connections.

EBL Appliance Power:

The EBL internal circuits are split into two sections. The power circuits provide 12V to the appliances and the control circuits run the internal electronics and control the power circuits. The power circuits for appliances are fed from the large Leisure Battery cable in the back of the EBL connected to the 'chock block'. Even if the power circuits have a 12V feed, without the control electronics, they will never switch power to the appliances. The LEISURE BATTERY light (GREEN) indicates that the control circuits have power.

EBL vehicle battery:

The EBL vehicle battery circuits are split into 4 functions:-

1) Split Charge

The power circuit for the Split charge function is achieved using the large battery cables in the back of the EBL connected to the 'Chock Blocks'. The control circuits to activate the split charge is the D+ signal on Block 2 pin 3.

2) Mains Charger Trickle Charge

With Electric Hook Up (EHU) connected and when the charger is functioning, the vehicle battery is trickle charged via Block 2 pin 1.

3) 12V Fridge power feed

To run the fridge on 12V whilst driving, the power comes in on the FRIDGE/VEH BATT feed on Block 2 pin 1

4) Control panel Vehicle battery voltage

The control panel shows the voltage of the battery by reading the control input for the vehicle battery on Block 2 pin 1

The FRIDGE/VEH BATT light (RED) indicates that the control circuits on Block 2 pin 1 have power.

D+/Engine Running:

In an EBL, the D+ signal comes from the vehicle electronics and indicates that the engine is running. D+ is used in the EBL to activate the split charge and the fridge 12V power circuits. The D+/ENGINE RUNNING light (blue) indicates that the vehicle is telling the EBL that the engine is running.

Quick Fault Finding Table

<u>Fault</u>	<u>Test Plug Indication</u>	<u>Resolution</u>
<ol style="list-style-type: none"> 1. No power to control panel 2. Unable to switch on panel 3. No power to appliances 4. Control panel only shows Vehicle battery voltage 5. Unable to switch the 12V appliance power on or off 	GREEN LEISURE BATTERY light NOT illuminated	12V power is missing from Block 2 pin 5 CAUSES:- 2A fuse by Leisure battery is blown Corrosion of fuse holder or wiring above Broken or damaged DP01 or DP02 (if fitted)
	GREEN LEISURE BATTERY light IS illuminated	EBL control circuits are damaged. Send the unit to Apuljack Electronics for repair
<ol style="list-style-type: none"> 1. No vehicle battery voltage shown on control Panel 2. Fridge does not work on 12V whilst driving 3. Vehicle battery does not trickle charge from the mains charger/EHU 	RED FRIDGE/VEH BATT light NOT illuminated	12V power is missing from Block 2 pin 1. CAUSES:- 20A fuse blown by vehicle battery Corrosion of fuse holder or wiring above Broken or damaged DP01 or DP02 (if fitted)
	RED FRIDGE/VEH BATT light IS illuminated	EBL control circuits are damaged. Send the unit to Apuljack Electronics for repair
<ol style="list-style-type: none"> 1. Fridge not working on 12V/when driving 2. Split charge not working when driving 	D+ ENGINE RUNNING light NOT illuminated when engine running	12V power is missing from Block 2 pin 3 Check the 2A fuse close to the vehicle battery Corrosion of fuse holder or wiring above Broken or damaged DP01 or DP02 (if fitted)
	D+ ENGINE RUNNING light IS illuminated when engine running	EBL control circuits are damaged. Send the unit to Apuljack Electronics for repair