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LVD, 9E755, Technical Reference revA

Changes from 9E754:

1. When BT1 goes into protection and BT2 is used, BT2 will be used continuously even when protection on BT1 is cleared. In this case, BT1 will be used until BT2 goes into protection.
2. Optional ~EN signal: When disconnected from ground and reconnected to ground, the power will be powered from BT1 if BT1's protection is cleared.

Functional block and control:

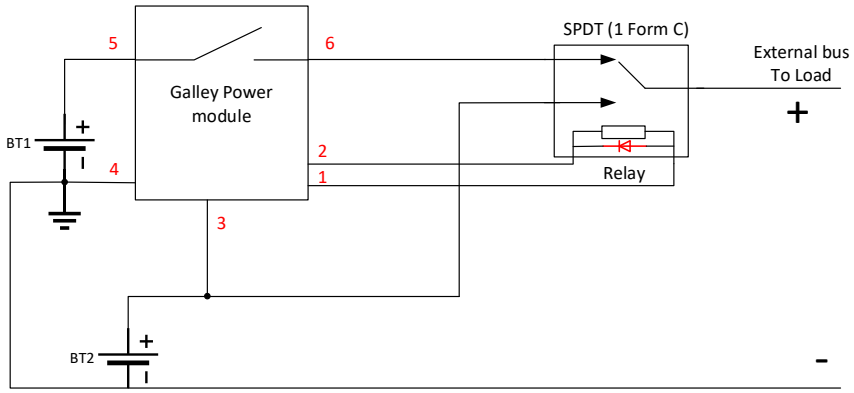


Fig. 1 Wiring diagram

Galley Power LVD module ("Module") monitors the voltages of both battery BT1 and battery BT2 and controls both (1)the relay and (2)the power from BT1 to Relay. The battery with higher voltage of BT1 and BT2 will power the Module.

Both BT1 and BT2 will be protected from under-voltage and over-voltage with following threshold values.

Under-voltage protection			
Disconnect voltage/low cut-off (V)	**Disconnect/low cut-off delay (Sec.)**	**Reconnect voltage(V)**	**Reconnect delay (Sec.)**
14.9	5	15.2	1.5
Over-voltage protection			
Overvoltage cut-off (V)	**Overvoltage cut-off delay (sec.)**	**Reconnect voltage(V)**	**Reconnect delay (Sec.)**
28V	2	27.5	2

Table 1. Protection threshold for BT1 and BT2

The operation state machine is

1. At power up, the Module will enable power from BT1 to external bus
    a. Relay drive is OFF: It will *not* drive the SPDT relay coil so to connect BT1 to the bus.
    b. The Module will connect Pin 5 and Pin 6 so BT1 will power external bus through the relay.

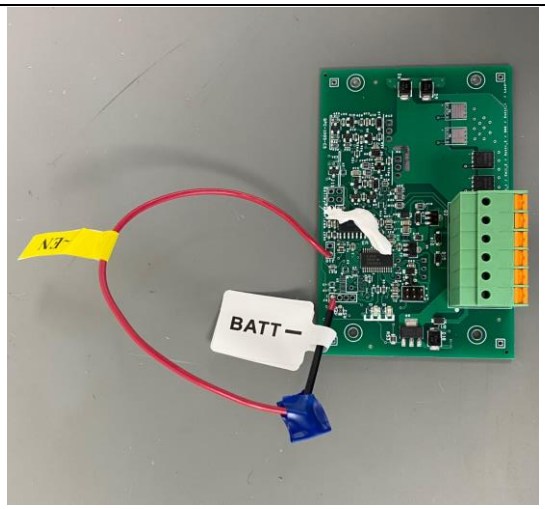
2. The Module will switch the power from BT1 to BT2 when BT1 voltage meets the protection condition in Table 1:
    a. Pin 1&2 will turn on the relay so that BT1 is disconnected and BT2, connected.
    b. The power from BT1 to the relay will be disconnected so no power flows to the relay.
    c. Depending on the relay selection, there will be additional power drain to BT2 to drive the relay coil.

3. When BT2 is used, BT2 will continue power the load even if the protection condition on BT1 is cleared.

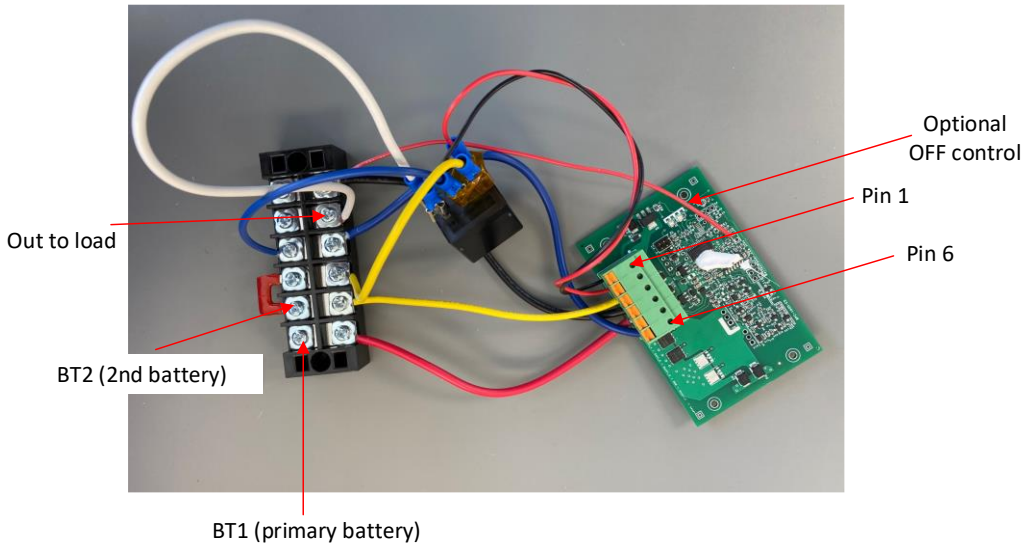
4. When BT2 voltage meets the protection condition in Table 1, the Module will disable the relay so to disconnect BT2. If BT1 is enabled, the power will switch back to BT1.

5. (Optional) The “Remote ~EN signal” RED wire is installed:
    a. When the wire is floating, the unit is forced off.
    b. When the wire is connected to ground, the unit is in normal operation mode.
    c. When the ~EN signal disable and reenable the module, BT1 will be used if BT1 is available.

Appendix for sample Round 2 for 9E755



Appendix for the Sample Round 1 for 9E754:



Please refer to Fig. 1 for the wiring diagram. The numbers marked in Fig. 1 are the pin numbers of the Green terminal block. In the sample:
Red wire, AWG 14: BT1, primary battery **input**, connected to Pin 5.
Blue wire, AWG 14: Connect to NC end of the relay. Connect to pin 6.

Black wire, AWG 14: GND, connect to pin 4. Connect to BT1 and BT2 ground.

Yellow wire, AWG 18: BT2, 2nd battery **input**. Connect to pin 3. Connect to NO end of the relay.
White wire, AWG 12: **Output**, Connect to relay common end.

Red wire, AWG 20: connect to pin 2. Connect to relay coil. If there is built-in diode in the coil, connect to the cathode side.
Black wire, AWG 20: connect to pin 1. Connect to relay coil. If there is built-in diode in the coil, connect to the anode side.