BG3K - Wire by Wire Installation Explanation

Rev. A 07/12/2017
**24v Batteryguard 3000 Default Setting Schematic**

**Title:** Batteryguard 3000 Default Setting Schematic

**Reason for Issue Change:**

This Inhibit wire will prevent the BG 3000 from acting upon any manual or automatic disconnects.

This Aux Input wire will allow many relay functions to be selected and performed within the BG3000. There are 7 option modes that can be selected:

1. Positive ON
2. Negative ON
3. Positive OFF
4. Negative OFF

The default setting is configured for Positive ON. This wire is normally connected to a fused positive or negative connection. The fuse rating of this connection should not exceed 15A max.

24V BD Relay

This wire controls the polarity of the switching of Alarm 1 and Alarm 2. This wire should be connected to a fused positive or negative connection. The fuse rating of this should not exceed 15A max.

The default setting requires this to be connected to a fused Battery +ve signal. If Aux O/P is not used and the total current consumption of 5A the Aux OFF wire could be used and connected Red/White joined to Slate.

**24v Battery Disconnect Relay**

This wire gives a 10A output - polarity based on Alarm Common connection polarity. This feature can be programmed to ON or OFF after a time period upon low voltage threshold level being reached. The relay can be selected for:

1. Continuous ON
2. Flooding
3. 10s Pulse
4. 5s Pulse

This wire gives a positive output 2 minutes after the B+ < 24.1. The output will remain on for a period of 1 minute until Alarm 2 becomes active.

**Carling V Series Reset Switch**

**Intellitec Technical Services**

**Speciality Vehicle Electronics Division**

**Technical Helpline:** 0800

**Title:** Batteryguard 3000 Default Setting Schematic

**Filepath:** W/BMS/BG3000
Diagnostic LEDs

Red Diagnostic LED
Constant - This will indicate that the BG3K is in inhibit mode.
Flashing - This indicates that the Battery voltage is below the programmed threshold level set in the GUI

Yellow Diagnostic LED
This will indicate the status of ALARM 1 condition

Green Diagnostic LED
This will indicate the status of ALARM 2 condition

Red / Yellow / Green LED
Will blink 3 times after a successful disconnect has occurred

Yellow / Green LED
Will blink indefinitely after an unsuccessful disconnect has occurred
AUX B+ SELF PROTECT O/P

This wire gives a B+ Output for circuits that require to be kept live. The maximum current capacity is 5 Amps. This circuit is self protected and will automatically shutdown in the event of an overload, when the overload is removed it will self reset. The output will only be present on this pin if a B+ input is present on 10 way Pin C - B+ Input.

ALARM COMMON

This wire allows the installer the option for polarity of how Alarm 1 and Alarm 2 is switched. The maximum current capacity is 10A on this wire which can be split between Alarm 1 and Alarm 2.

Installation tip: *If the Alarm outputs are required to be positive and total current is < 5A and the Aux B+ output is not used. The Red / White can be joined and insulated to the Slate wire to give the Alarm Common a 5 Amp protected power source.*

BATTERY +VE : V SENSE

This wire is the main B+ power source that provides power and gives the voltage sensing for the ECU. This wire should be connected to a permanent B+ feed greater than 10A. This wire requires the installer to fuse.

Installation tip: *This wire should be as cut as short as possible to eliminate any volt drop in the cable. It should be connected as close as possible to the Battery B+ terminal to provide accurate voltage sensing.*
ALARM 2 OUTPUT

This wire gives an output up to 10A capability. This can be configured within BG3K GUI software for different functionality at certain timing criteria. This Alarm 2 output is operated via an internal relay to Alarm Common connection. The output can be set for continuous, flashing, one shot or can flash five times.

BATTERY -VE : V SENSE

This wire is the main negative power source that provides power and gives the voltage sensing for the ECU. This wire should be connected to a good vehicle negative connection or direct to Battery post negative.

Installation tip: This wire should be as cut as short as possible to eliminate any volt drop in the cable. It should be connected as close as possible to the Battery Neg terminal to provide accurate voltage sensing.

ALARM 1 OUTPUT

This wire gives an output up to 10A capability. This can be configured within BG3K GUI software for different functionality at certain timing criteria. This Alarm 1 output is operated via an internal relay to Alarm Common connection. The output can be set for continuous, flashing, one shot or can flash five times.
BD RELAY ‘S’ TERMINAL

This wire drives the BD Relay ‘S’ terminal at a positive potential for a short period of time to perform a disconnect. This wire is internally connected to negative when it is OFF. This negative provides the return current path for when BD Relay ‘I’ is energised to perform a reconnect.

Installation tip: Both Brown and White wires should be disconnected when performing a hardwired manual test on the BD relay.

BD RELAY ‘I’ TERMINAL

This wire drives the BD Relay ‘I’ terminal at a positive potential for a short period of time to perform a disconnect. This wire is internally connected to negative when it is OFF. This negative provides the return current path for when BD Relay ‘S’ is energised to perform a reconnect.

Installation tip: Both Brown and White wires should be disconnected when performing a hardwired manual test on the BD relay.

*10 Way Plug Pins J and H are not used for product installation. They are used for Rs232 communications for RX and TX when connected to Intellitec P/N Rs232 Programming Adaptor 00-00849-000
SWITCH RETURN NEG

This wire is the negative return from the BG3K switch. It should be open circuit when the switch is not being activated.

Pin A
Purple

SWITCH LED OUTPUT

This wire provides a pulsing 5V output from the BG3K ECU to the LED in the BG3K reset switch. The frequency of the pulse can be configured by changing the configuration within the GUI.

Pin B
Yellow

SWITCH COMMON NEGATIVE

This wire provides a common negative from the BG3K ECU to the switch. It provides a negative for the LED cathode and also a negative for one of the switch contacts. This negative is internally linked within the BG3K ECU from 10 way plug pin E.

Pin C
Black
**BD RELAY DISCONNECT FEEDBACK**

This wire is connected between the BG3K ECU and the BATT OUT terminal of the BD Relay. Its purpose is to monitor the BD Relay contacts to ensure an expected disconnect has actually occurred. This wire provides error detection and will record the number of successful and failed disconnects. The polarity of the BD Relay contact switching needs to match the GUI setting within the BG3K software.

**BATTERYGUARD INHIBIT**

This wire provides the inhibit function within the BG3K. This inhibit can be connected to either positive or negative polarity. Within the BG3K GUI settings the inhibit can be set for when positive is on, positive is OFF, negative is ON or negative is OFF.

**AUXILLARY INPUT**

This wire provides a number of useful options that the wire can perform. Its polarity can be selected for either positive or negative. It can operate Alarm 1, operate Alarm 2, perform a disconnect, mute the audible buzzer, force the BG3K into thinking it is below threshold setting regardless of actual battery voltage. It can also be configured to act as a programmable split charging system. (Default positive polarity)