

Battery Ground Fault Detector **BGF Series**

- Handheld - 0,7 kg (1.5 lbs)
- Simple to use (1-click to test)
- Bluetooth communication with PC
- Max voltage measurement range ± 600 V DC
- Easy transfer of measured data to software
- Automatically measures, time stamps, and stores results
- Reliable detection and localization of cell-to-ground short-circuit



Description

BGF100 is a battery-operated handheld device designed for cell-to-ground short-circuit detection, which is a common potential issue in battery packs. This device can localize the fault and inform the user about the cell number on which the ground fault is detected or the percentage if the total number of cells within the string is unknown. The positive pole of the first cell within the battery string is considered a starting point of cell numbering.

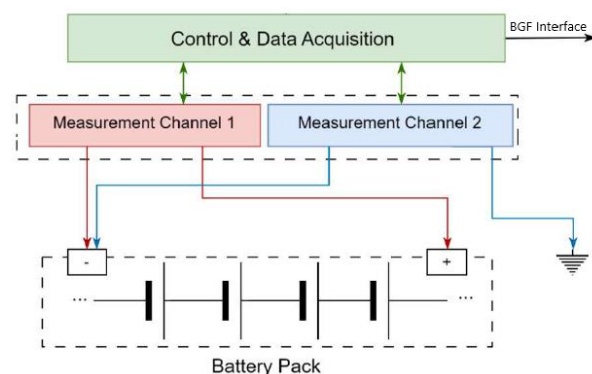
The energy capacity requirements in different applications dictate various designs where in many cases long strings of battery cells are required.

The ground faults can generate the problem that occurs during the discharging or charging process of batteries, and the high voltage levels of the multi-cell strings can contribute to dangerous situations for personnel or equipment that becomes a part of that system.

This device also records measured data in the internal memory. Measured data is displayed in numerical form on the 2.8-inch color display.

Downloading collected data to an external computer is available via Bluetooth communication.

As described in the measurement and data system structure below, using the two voltage channels and thanks to the algorithm, the device can easily detect and localize the cell with a ground fault within the battery string.

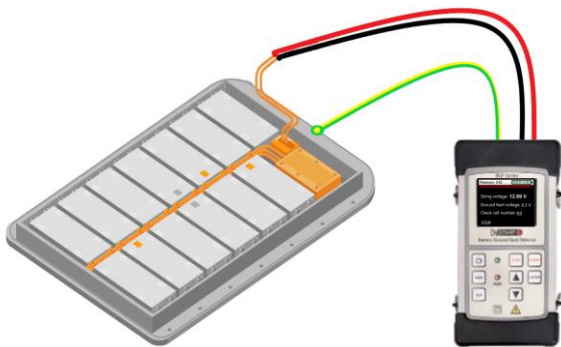


Features and applications

- Operates on batteries up to 600 V DC
- While the battery charges, the instrument can be used with AC power
- Alarms when the ground fault is detected
- The faulty cell is localized if the ground fault is detected and shown on display
- Insulation failure detection of batteries
- Detection of unacceptable contact of the battery's energized conductor with metal/chassis

Connecting BGF100 to a test object

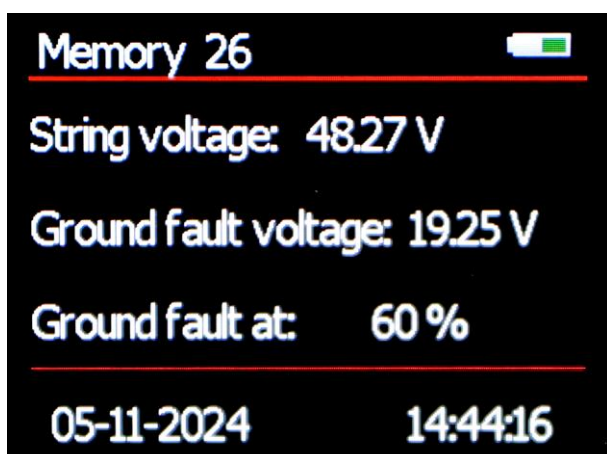
The BGF100 device uses only 3 cables. The red cable should be connected to the first positive (+) terminal, the black cable should be connected to the last negative (-) terminal, and the ground yellow-green cable to the metal/chassis that is not intended to carry current.



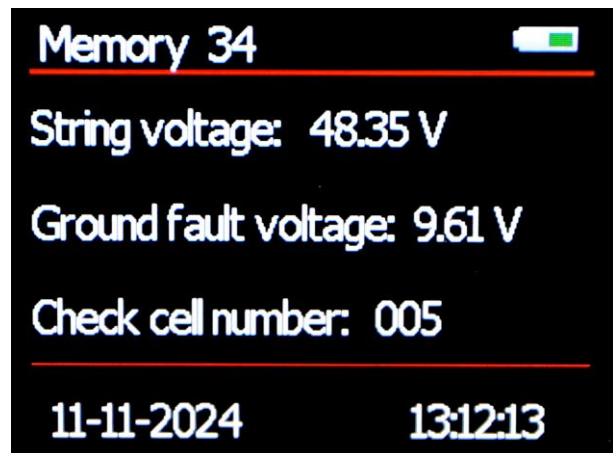
Short-Circuit Detection/Localization

Single battery cells are usually connected in series or parallel to form a battery module. A set of such modules forms a battery pack. Any contact of the module (positive or negative pole) from the battery pack with a grounded chassis or any other grounding point could be easily detected and localized.

• When the detection of the ground fault is imperative where the number of cells within the battery string is unknown the result is as below:



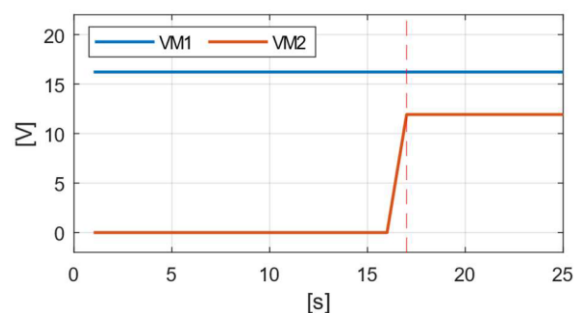
• In the case of the known number of cells in the battery pack:



The continuous monitoring using the BGF100 device is performed with a sampling time of 1 s. The device is constantly measuring the total voltage of the battery string (VM1) and the voltage between the minus terminal and chassis/ground (VM2). When the ground fault exists the $VM2 \neq 0$ and the device's algorithm will do the rest.

VM1 = voltage of the battery pack

VM2 = voltage between negative terminal and ground (chassis)



Software

The main features of the software are:

- Download the test results to a PC
- Saving the test results in different formats
- Test reports creation (fully customized)

Technical Data

Mains Power Supply

Battery

- Type 2900 mAh Li-Ion
2 Cells
- Nominal Voltage 7,4 V
- Charging time 6 hours

AC Adapter

- Input voltage 90 to 264 V AC, 50/60 Hz
- Output voltage 12 V DC
- Output current 1 A

Voltage measurement

- Cell/String voltage measurement range:
0 – 600 V DC
- Typical accuracy: $\pm (0,1\% \text{ rdg} + 0,1\% \text{ FS})$

Display

- Type: TFT LCD 2.8 in
- Viewing Area:
43,2 mm x 57,6 mm / 1.8 in x 2.3 in
- Resolution: 320 x 240 pixels

Communication

- Bluetooth: Device to PC connection

Memory

- Internal: 32 GB Micro SD Card with up to 10,000 records

Environment conditions

- Operating temperature:
-10 °C to +55 °C / 14 °F to +131 °F
- Storage temperature:
-40 °C to +70 °C / -40 °F to +158 °F
- Maximum relative humidity 95 % for temperatures up to 31 °C, decreasing linearly to 40 % relative humidity at 55 °C

Dimensions and Weight

- Dimensions (L x W x D) :
223 x 116 x 50 mm (8.77 x 4.56 x 2.1 in)
- Weight: 0,7 kg (1.5 lbs)

Low Voltage Directive

- Directive 2014/35/EU (CE conform)
- Applicable standards, for a class I instrument, pollution degree 2
- Installation category II: IEC EN 61010-1:2010
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Electromagnetic Compatibility

- Directive 2014/30/EU (CE conform)
- Applicable standard: EN 61326-1:2013

Warranty

- Three years + additional 1 (one) year upon registration on DV Power official website (www.dv-power.com).

All specifications herein are valid at ambient temperature of +25 °C and recommended accessories. Specifications are subject to change without notice.

Accessories



Sense cables 2 x 10 m with banana plugs



Dolphin clip (red)



Dolphin clip (black)



Grounding cable set 1 x 5 m with dolphin clip



Sense cables with test probe



Transport bag



Power supply adapter

Order Info:

Instrument	Article No
Battery Ground Fault Detector BGF100	BGF100-NN-00

Included accessories
DV-B Win software
Transport bag and carrying belts
Power supply adapter

Standard accessories	Article No
Sense cables 2 x 10 m with banana plugs + dolphin clip	S2-10-00BPDC
Grounding cable set 1 x 5 m with dolphin clip	GND1-05-BPDC

Optional accessories	Article No
Sense cables with test probes	S2-0122-BPTP
Sense cables 2 x 5 m with banana plugs + dolphin clip	S2-05-00BPDC

B-BGF100-100-EN

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Subject to change without notice.

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