# BVR Series

# Battery Voltage Recorder BVR22

- Handheld - 0,7 kg (1.5 lbs)
- Max voltage measurement range ± 600 V
- Automatically measures, time stamps and stores cell/string (float) voltages in less than 1 second
  - Cell and ambient temperature measurements
  - Current measurement using current clamps
- Bluetooth communication with external Density Meter
- Performs full battery discharge test simultaneously measuring string voltage and discharge current
- Easy transfer of measured data to DV-B Win software for further analysis

## Description

BVR22 is a rechargeable handheld device used to perform monthly battery inspections, measuring string voltage**,** single cell voltage**,** ambient temperature and electrolyte temperature using PT100 temperature indicator.

The BVR22 is also an efficient tool for capacity tests of large battery banks, where it serves as a supplement to DV Power Battery Load Unit (BLU) series of devices or any other load banks on the market used for a battery discharge.

BVR22 can be used to measure voltage and temperature parameters while the battery is either in online or offline mode. This device also record measured data in the internal memory. Measured data is displayed in the numerical form or in the form of histograms on the 2.8-inch color display.

Download of collected data to an external computer is available via USB and Bluetooth communication. Detailed analysis and trending of battery banks and an individual battery's state of health is provided by using the DV – B Win software application set

## Applications

The list of the instrument applications includes:

- Efficient supplement to BLU series of Battery Load Units during extensive battery discharge testing
- Monthly inspections of large battery banks
- Current measurement using current clamps
- Cell electrolyte temperature measurement
- Simultaneous string voltage and current measurement to analyze the discharge test process*

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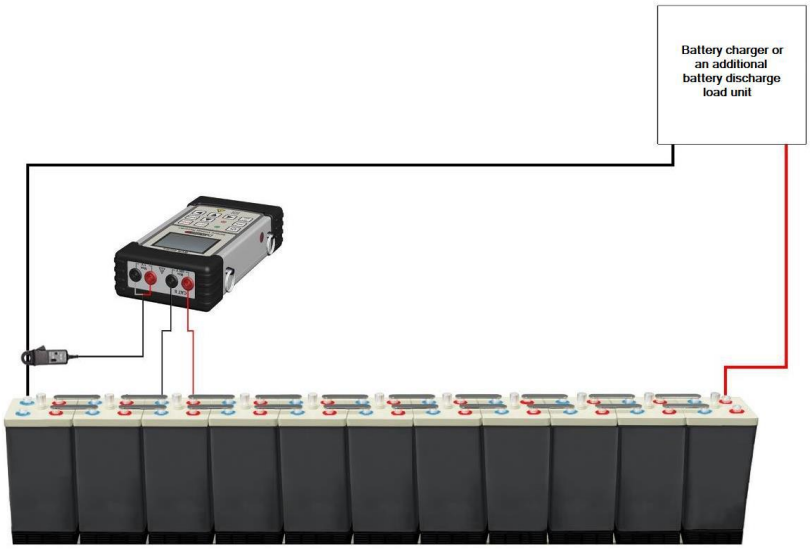
## Connecting BVR to battery




## DV-B Win Software

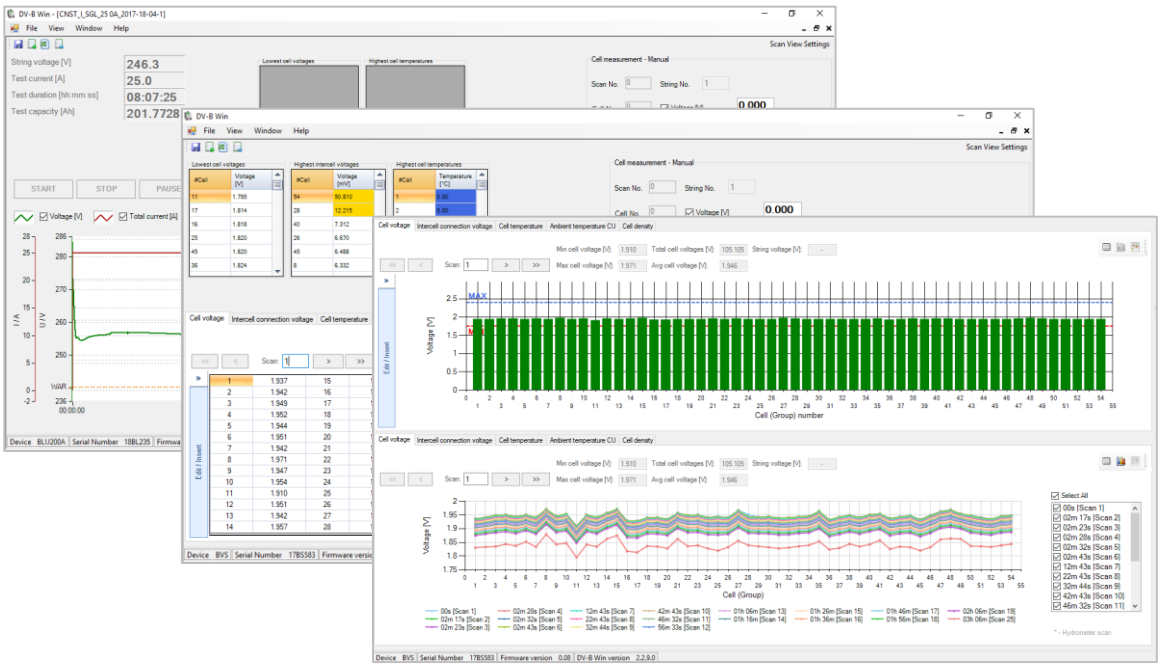
Using the DV-B Win software package all results can be presented in several forms. Single battery voltages can be shown in a table, scan graph, as well as a line view.

To perform detailed comparisons and analysis of measured data, a user defined limits for battery, and string voltage as well as temperature, are displayed in the scan graph view along with measured results.

A test report of collected data can be generated and user customized for a comprehensive battery state of health assessment.

Numerical and graphical results may be exported from DV-B Win in selectable formats such as Excel spreadsheet, PDF, Word or Rich Text Format. Additionally, importing other types of data formats (.jpeg, .png, .doc) into standardized DV-B Win report is provided as well.

DV-B Win software provides an alarm notification when detecting cells with voltage levels lower or higher than defined threshold



*DV-B Win application functions – string view, battery scan view and line voltage chart*



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## Technical Data

### Mains Power Supply

### Battery

- Type 2900 mAh Li-Ion
  BVR22: 2 Cells
- Voltage 3,7 V
- Charge 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

- Inter- cell voltage measurement range:
  0 – 1 V DC
- Cell/String voltage measurement range:
  0 – 600 V DC

| Model | Range | Resolution |
|---|---|---|
| BVR22 | ±100 mV | 0, 01 mV |
| | ±1000 mV | 0,1 mV |
| | ± 10 V DC | 1 mV |
| | ± 100 V DC | 10 mV |
| | ± 600 V DC | 100 mV |

- Typical accuracy: ± (0,1% rdg + 0,1% FS)

### Temperature measurement

- **Cell (Electrolyte) temperature** measurement with Pt100 temperature probe
- **Ambient temperature** measurement with an internal sensor integrated in BVR

| Parameter | Range |
|---|---|
| **Ambient temperature** | -10 °C to +55 °C / 14 °F to +131 °F |
| **Cell / Electrolyte temperature** | -10 °C to +60 °C / 14 °F to +140 °F |

- Typical accuracy: ± 1°C

### 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

- USB and Bluetooth: Device to PC connection

### Memory

- Internal: 8 GB Micro SD Card

### Real time clock

- Precision: ±5 seconds per month
- Calendar: 100 year with leap year detection

### 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

| Model | Dimensions (L x W x D) | Weight |
|---|---|---|
| BVR22 | 223 x 116 x 53 mm<br>8.77 in x 4.56 in x 2.1 in | 0,7 kg /<br>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



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## 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 with test probe**

**Current clamp 30/300 A with internal battery supply and extension 5 m**

**PT 100 temperature indicator with PTFE protection**

## Order Info:

| Instrument | Article No |
|---|---|
| Battery Voltage Recorder BVR22 | BVR22X-NN-00 |

| Included accessories |
|---|
| DV-B Win software including mini USB cable |
| Transport bag and carrying belts |
| Power supply adapter |

| Standard accessories | Article No |
|---|---|
| Sense cables with test probes | S2-0122-BPBP |
| PT100 temperature indicator with PTFE protection | TI-001-PT100 |
| Current clamps 30/300 A with internal battery supply and extension 5 m | CACL-0300-08 |

| Optional accessories | Article No |
|---|---|
| Sense cables with angled pins | S2-0122-APBP |
| Sense cables 2 x 5 m with banana plugs + dolphin clip | S2-05-00BPDC |
| RFID tags 20 pcs | RFIDB-020-00 |

## BVR22

**Parameters Measured:**
String and cell voltage, cell (electrolyte)/ambient temperature, DC current measurement using current clamps.
Simultaneous string voltage and DC current measurement
Bluetooth communication with external Density Meter

**Measurement range:**
String / Cell Voltage: ± 600 V DC
Current / Intercell voltage: ± 1 V DC

**Data Transfer:** Bluetooth and USB to PC

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