BVR Series

Battery Voltage Recorders

- Handheld - from 0.5 to 0.7 kg (1.1 to 1.5 lbs) depending on the model
- 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
- IR 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

The BVR series of devices include three models: BVR11, BVR20 and BVR22. These are rechargeable handheld devices used to perform monthly battery inspections measuring string voltage (BVR11 and BVR22), single cell voltage, ambient temperature and cell temperature using PT100 temperature indicator (BVR20 and BVR22).

The BVR series of devices can be used to measure voltage and temperature parameters while the battery is either in online or offline mode. These devices also record measured data in the internal memory, with an ability of storing up to 1000 measurements. 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.

*IR communication with external Density Meter is provided with BVR20
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
- Ambient temperature measurement
- Current measurement using current clamps
- USB and Bluetooth communication with a user provided PC
- Simultaneous string voltage and current measurement to analyze a discharge test process *

Connecting BVR with 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 thresholds.

*Simultaneous string voltage and current measurement is provided with BVR22
**DV-B Win application functions** – string view, battery scan view and line voltage chart
Technical Data

Mains Power Supply

Battery
- Type: 1 Cell – 2600 mAh Li-Ion
- 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: 0.5 A

Measurement
- Inter-cell voltage measuring range: 0 – 1 V DC
- Cell voltage measuring range: 0 – 30 V DC
- String voltage measuring range: 0 – 600 V DC

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
  *Bluetooth available with BVR11 and BVR22

Memory
- Internal: 2 GB Micro SD Card

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

Environment conditions
- Temperature: -10 °C to +45 °C / 14 °F to +113 °F
- Maximum relative humidity 95 % for Temperatures up to 31 °C, decreasing Linearly to 40 % relative humidity at 55 °C

Dimensions and Weight

<table>
<thead>
<tr>
<th>Model</th>
<th>Range (L x W x D):</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVR11</td>
<td>223 mm x 98 mm x 46 mm</td>
<td>0,5 kg / 1.1 lbs</td>
</tr>
<tr>
<td>BVR20</td>
<td>253 mm x 116/89/96 mm x 46/36 mm, 10 in x 4.6/3.5/3.8 in x 1.8/1.4 in,</td>
<td>0,6 kg / 1.3 lbs</td>
</tr>
<tr>
<td>BVR22</td>
<td>223 x 116 x 53 mm</td>
<td>0,7 kg / 1.5 lbs</td>
</tr>
</tbody>
</table>

Warranty
- Three years
Low Voltage Directive:

- Applicable standards, for a class I instrument, pollution degree 2,
- Installation category II: IEC EN 61010-1

Electromagnetic Compatibility:

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

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

Accessories

<table>
<thead>
<tr>
<th>Voltage sense cables</th>
<th>Current clamp 30/300 A with internal battery supply and extension 5m</th>
<th>PT 100 temperature indikator</th>
</tr>
</thead>
</table>

Order Info:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Article No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Voltage Recorder BVR11</td>
<td>BVR11X-NN-00</td>
</tr>
<tr>
<td>Battery Voltage Recorder BVR20</td>
<td>BVR20X-NN-00</td>
</tr>
<tr>
<td>Battery Voltage Recorder BVR22</td>
<td>BVR22X-NN-00</td>
</tr>
</tbody>
</table>

Included accessories

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

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Article No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense cables</td>
<td>S2-0122-BPBP</td>
</tr>
<tr>
<td>PT100 temperature indicator <em>(for BVR20 and BVR22 model)</em></td>
<td>TI-000-PT100</td>
</tr>
<tr>
<td>Current clamp 30/300 A with internal battery supply and extension 5m</td>
<td>CACL-0300-08</td>
</tr>
<tr>
<td>Sense cables 2 x 3 m with banana plugs + dolphin clip</td>
<td>S2-03-00BPDC</td>
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</table>

Optional

<table>
<thead>
<tr>
<th>Article No</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFID tags 20 pcs <em>(for BVR20 and BVR22 model)</em></td>
</tr>
<tr>
<td>Bluetooth communication module <em>(for BVR11 and BVR22 model)</em></td>
</tr>
</tbody>
</table>
## BVR Series – models

### BVR11

**Measured parameters:**
- Voltage, ambient temperature, current measurement using current clamps

**Measurement range:**
- String Voltage: ± 500 V DC
- Cell Voltage: ± 30 V DC

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

### BVR20

**Parameters Measured:**
- Voltage, cell temperature, Electrolyte density measurement (communicating with external density meter), current measurement using current clamps.

**Measurement range:**
- Cell Voltage:
  - ± 2,35 V DC
  - ± 7 V DC
  - ± 30 V DC

**Data Transfer:**
- USB to PC

### BVR 22

**Parameters Measured:**
- String and cell voltage, cell (electrolyte)/ambient temperature, DC current measurement using current clamps.

  - Simultaneous string voltage and DC current measurement

**Measurement range:**
- ± 600 V DC

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

*The above cables are also available in several lengths and terminations. Please contact DV Power for more information*