

Battery Load Unit BLU200

- Lightweight – only 14.5 kg (32lbs)
- Instrument max discharge power – up to 18 kW
- Voltage measurement range: 10-300 V DC
- Current measurement range using Current Clamp 0-1000 A DC
- Measurement resolution – current 0.1 A, voltage 0.1 V
- Discharge current step – up to 200A (with step 1A)
- Constant I/Constant P/Constant R/I,P,R Profile operation modes
- Parallel operation applied for higher discharge current
- Adjustable alarm and shutdown parameters for preventing excessive discharge
- Detailed test analysis using DV-Win software



Powerful and Portable Capacity Tester

Description

During the power outage many power engineering objects such as power plants, generator excitation systems, should be kept operating on batteries. Due to their crucial importance, batteries have become infallible part of all power facilities. In order to prolong their life - time and autonomous work, they need to be inspected regularly. It is known that the leading indicator of the battery health is its capacity. Battery capacity should be checked to prevent expensive downtime in the event of a power failure. The best way to test the capacity is to perform a discharge test.

The BLU200 is a Battery Load Unit for measuring battery capacity, based on a state-of-the-art technology, using the most advanced power electronics solutions with coolers and fans integrated into device. The BLU200 provides the discharge current as a true DC ripple-free current with the values up to 200 A, for 10 – 300 V battery system. Overview of the maximal currents for several battery voltage ranges with the minimum achievable cell voltage of 1,75V is shown in the table below.

Battery voltage	12 V		24 V		48 V		60 V		110/120 V		220/240 V	
Min-Max voltage (V)	10,5	14,1	21,0	28,2	42,0	56,4	52,5	70,5	96,3	141,0	192,5	282,0
Maximum current (A)	100		200		200		100		120		60	

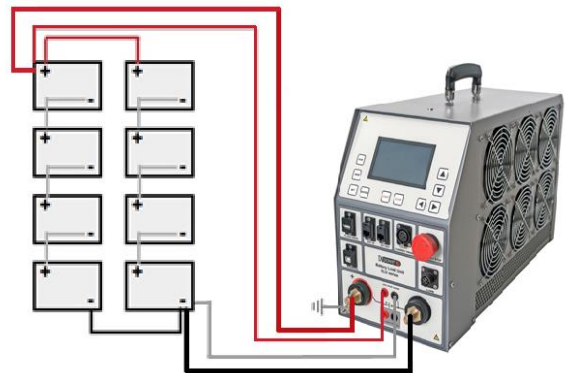
When the required discharge current or power is higher than what is available with one BLU200 device or resistance is lower, up to 10 devices can be connected in parallel. The discharging can be conducted according to constant current, constant power, constant resistance and selected load profile. Using the DC current clamps BLU200 can measure a load current or total battery current. This mode provides testing without disconnecting the battery from the load.

Single mode

Typical application is measuring the capacity and full voltage of the batteries that serve as a backup power supply in:

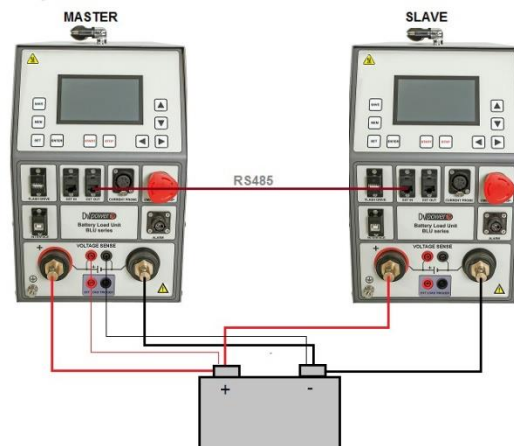
- Power plants
- Generator excitation systems
- Substations
- Protection and control systems

Using two sets of cables, the device can be connected to any battery test object. Connection to the battery is made by the current and voltage sense cables. After connecting the battery the current and the voltage alarm levels are set. After starting the discharge, BLU200 keeps the current, resistance, or power constant. When the voltage drops to a level close to final voltage BLU200 generates an alarm. All the readings taken at the end of the test are stored in the BLU200 memory. Using the DV-B Win software these readings can be transferred to a PC for storage, printout or additional analysis. If the PC is connected to BLU200 a test can be performed and controlled from a user's PC and the results can be provided directly on the PC.



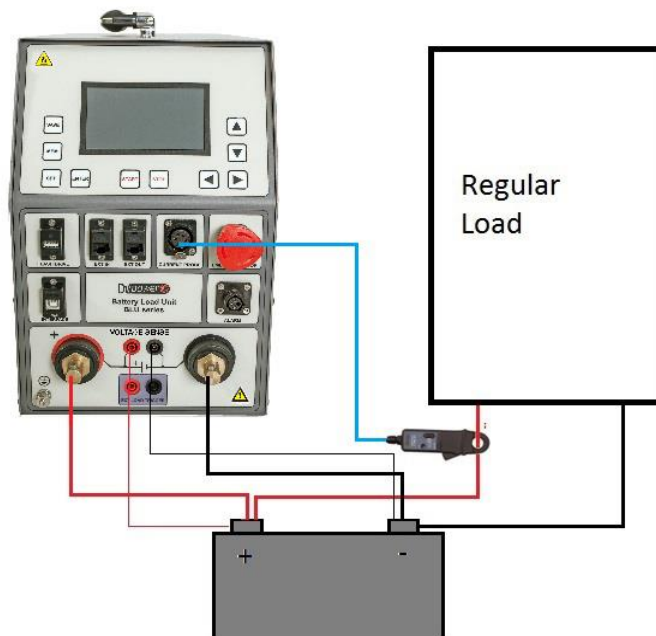
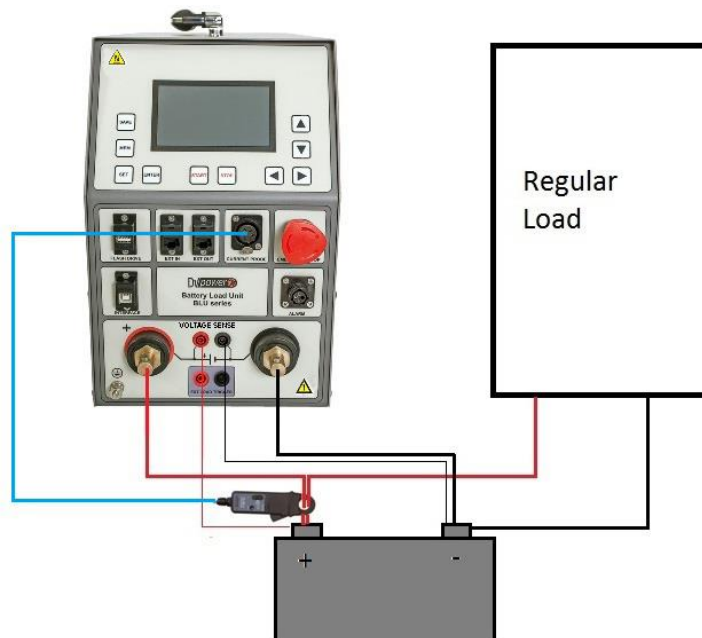
Parallel discharge test mode

In case the required discharge current or power exceeds the capacities of a single BLU200 device,, several (up to ten) devices can be connected in parallel. Connection between BLU200 devices is established using Ethernet ports and RS485 communication. The communication is based on a MASTER-SLAVE principle with one devices being always MASTER and all the others are SLAVE units. The following figure presents a connection of two BLU200 devices for a parallel discharge test mode.



Current Probe mode

In case the battery has to remain connected to the load, the test needs to be carried out using the Current Probe MODE. In this mode the measurement will be based either on the total battery current or a load current being measured by the DC current clamp. The current clamp positions for both modes are illustrated in the figures below.



Features and benefits

1. 4.3 color touch screen display
2. Keyboard – used for controlling and operating the instrument.
3. Flash drive - used for transferring BLU200 memory data into an external memory stick
4. External input (EXT IN) and external output (EXT OUT)
5. Current probe –measuring load current using the external current clamp.
6. Emergency STOP button – used when unexpected or unwanted action occurs.
7. Interface – used to connect an external computer if required.
8. Alarm output – used for triggering external alarm buzzer.
9. Current and Voltage sense terminals – used for connecting the current test cables and voltage sense test cables.
10. External Load trigger used for triggering external load
11. Protective Earth Connector



DV B-Win Software

Using the DV-B Win software a test can be performed and observed from a user's PC, and the results can be saved directly on the PC. Communication between the BLU200 and the PC is normally achieved through USB cable. Ethernet is an optional interface. Using DV-B Win the results can be arranged and printed for a report in a selectable format as an Excel spreadsheet, PDF, Word or ASCII format. Also, the possibility of importing other types of data format (jpg, png, doc) into standardized DV-B Win report is provided, as well as exporting the numerical and graphical results from DV B-Win into customizable report. Additionally, the software provides a possibility of setting extra parameters (cell, capacity, time) for alarming and ending the test.

Accessories

Included

- DV-Win PC software
- Ground cable
- Transport case
- USB cable
- Flash drive

Recommended

- Cable bag
- Current cables 2 x 3 m 35 mm² with alligator clamps (A4) isolated
- Sense cables 2 x 3 m with banana plugs + dolphin clip

Optional

- Current cables 2 x 5 m 35 mm² with alligator clamps (A4) isolated
- Current cables 2 x 10 m 35 mm² with alligator clamps (A4) isolated
- Current cables 2 x 15 m 35 mm² with alligator clamps (A4) isolated
- Sense cables 2 x 5 m with banana plugs + dolphin clip
- Sense cables 2 x 10 m with banana plugs + dolphin clip
- Sense cables 2 x 15 m with banana plugs + dolphin clip
- Extension cables 2 x 5 m 35 mm²
- Extension cables 2 x 10 m 35 mm²
- Extension cables 2 x 15 m 35 mm²
- Current clamp
- Cable for external alarm
- Cable for parallel operation



Voltage sense cables



Current cables



Extension cable



Transport case

Technical Data

1 - Mains Power Supply

- Connection	according to IEC/EN60320-1; C320
- Voltage	90 V – 264 V AC, 50 / 60 Hz, single-phase
- Power consumption	200 VA
- Fuse	2 A / 250 V, type F

2 - Output data

- Test current	up to 200 A DC	
	Measuring range:	Resolution:
- Voltage	10-300 V DC	0.1 V
- Internal current	0-220 A DC	0.1 A
- Current with Current Clamp ¹	0-1000 A DC	0.1 A
- Typical accuracy	Current: $\pm 0,5$ % of reading ± 0.2 A	
Voltage: $\pm 0,5$ % of reading ± 1 V		

3 - 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
- Pollution degree 2

4 - Dimensions and Weight

- Dimensions	560 mm x 217 mm x 355 mm 22 in x 9 in x 14 in (D x W x H) without handle
- Weight	14.5 kg / 32lbs

5 - Warranty	three years
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6 - Safety Standards

- European standards	EN 61010-1 LVD 2006/95/EC
- International standards	IEC 61010-1 UL 61010-1 CAN/CSA-C22.2 No. 61010-1, 2 nd edition, including Amendment 1

7 - Electromagnetic Compatibility (EMC)

- CE conformity	EMC standard 89/336/EEC EMC directive 2004/108/EC
- Emission	EN 61326-1
- Interference Immunity	EN 61326-1

All specifications herein are valid at ambient temperature of + 25 °C/77° F and recommended accessories. Specifications are subject to change without notice.