

B T S 2 0 0

BATTERY TEST SYSTEM



www.isatest.com



Battery test system

Electrical power plants are normally equipped with batteries of different types and regular test according to international standard are requested in order to assure the standby power for relays, circuit breakers, measuring equipment and telephone exchanges.

- High power battery capacity test system
- Discharging current up to 1300A with external loads (up to 9)
- Graphical display showing test parameters, curves and results
- Internal memory
- Light and easy to carry, with handles and wheels
- Shunt or clamp metering of an additional current
- Suitable for all battery types

A P P L I C A T I O N

The most reliable method for the determination of battery capacity is to perform a discharging cycle periodically. BTS 200 MKII allows to perform such test combining efficiency with portability. It can test any type of battery with a discharging current up to 1300A with external loads.

Specification

Maximum discharging current with BTS 200 MKII

BATTERY NOMINAL VOLTAGE	MAX CURRENT DISCHARGED
240 V	70 A
220 V	70 A
140 V	130 A
110 V	130 A
48 V	130 A
24 V	130 A

- . It is possible to parallel up to 9 external loads ELU 200 MKII.
- . The test set shows on the large back-lighted LCD display the following parameters:
 - . Battery voltage;
 - . Minimum voltage threshold (adjustable), with automatic stop;
 - . Discharging current, power or profile;
 - . Ah (ampere-hour) discharged;
 - . Test time duration with automatic stop at time out;
 - . Test conditions are all displayed;
 - . Discharging curve is displayed;
 - . Test parameters are entered via the functional push button and the graphical display on the front panel.

Load patterns

- . Constant discharge current.
- . Constant power.
- . Current profile (up to 20 steps).
- . Power profile.
- . Manual control.

Measurement of the discharging current

- . Range: 0 - 130 A;
 - . Display: 0 - 130 A (0 - 1300 A with external loads);
 - . Accuracy: $\pm 1\%$ of the value, $\pm 0.2\%$ of the range.
- The discharging activity can be stopped and started again later from the same level.

External current measurements

Testing can be carried out without disconnecting the battery. Using the optional current clamp, BTS 200 MKII measures the total current while regulating it at a constant level. The external current measurement can be performed also by shunt connection.

External current measurement with clamp or shunt

1V - 100mV (100 mOhm - 0.1 mOhm) with 10A - 1000A.

Setting of the minimum voltage threshold

From 20V to 270V with step of: ± 1 V.

Maximum float voltage

Up to 270V.

Measurement of the battery voltage

- . Range: 0 - 300 V;
- . Display: 0 - 99.9 or 0 - 999 V; auto ranging;
- . Accuracy: $\pm 1\%$ of the range, $\pm 0.2\%$ of the range.

Setting of the maximum testing time

from 0 to 15 hours or infinite (without recording).

BTS 200 Battery test system

Internal memory

8 discharging sequences; non volatile internal memory.

Automatic stop functions

- . Minimum voltage threshold;
- . Maximum capacity;
- . Time out (Max. 9h.59');
- . System alarm

Interfaces

USB and CAN - BUS for external loads control.

SOFTWARE FOR BTS 200 MKII

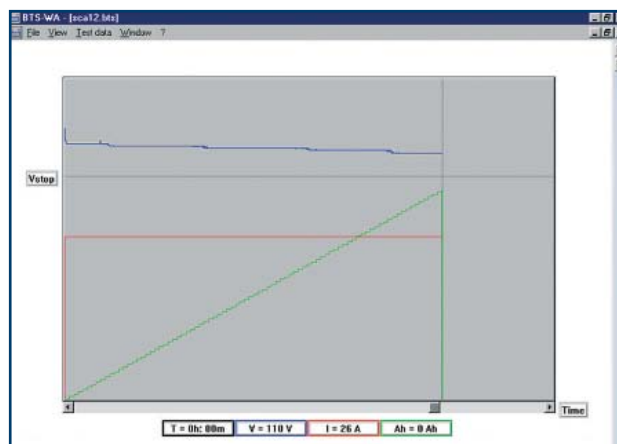
The software for BTS 200 MKII runs with Windows XP or 7 and allows to control the BTS 200 MKII with a Lap Top PC.

The software performs the following features:

- . Set the BTS 200 MKII testing parameters;
- . Display on the PC screen the following parameters in graphic and tabular form:
 - . Battery voltage;
 - . Current discharged;
 - . Ampere-hour discharged;
 - . Time - Test duration.
- . It manages the BTS alarms;

- . Possibility to define a discharge current profile with max. 20 steps;
- . When the test is completed, it is possible to save the results and to print it both in graphic and tabular form.

Software and firmware can be downloaded and updated directly from www.isatest.com web site.



EXTERNAL LOAD ELU 200 MKII (OPTIONAL)

When higher load current is necessary, it is possible to use the BTS 200 MKII in connection with external load ELU 200 MKII. ELU 200 MKII is an active programmable burden as BTS 200 MKII. BTS 200 MKII allows the connection up to 9 external loads ELU 200 MKII.

Interfaces to PC

Available interface: USB.

Protections

- . Fuse on the power supply.
- . Thermal protection. It stops the current discharge of the batteries and displays the message "STOP OVER-TEMPERATURE" on the LCD display.
- . Protection against the wrong battery polarity, with message on the display "WRONG POLARITY".

BTS 200 MKII: DISCHARGING EXAMPLES

NOMINAL BATTERY VOLTAGE V	NOMINAL CAPACITY Ah	CONSTANT CURRENT A	CONSTANT POWER kW	TEST DURATION h	DISCHARGING CAPACITY Ah	END OF TEST VOLTAGE V
24	500	50	1	10	500	20
48	500	50	2	10	500	40
110	500	50	4.7	10	500	94
120	500	50	5.1	10	500	102
220	500	50	9.4	10	500	188
240	500	50	10.2	10	500	204



Maximum discharging current with BTS 200 MKII with external loads ELU 200 MKII

BATTERY VOLTAGE	MAXIMUM DISCHARGING CURRENTS OF BTS 200 MKII WITH ELU 200 MKII EXTERNAL LOADS								
NUMBER OF ELU 200 MKII	1	2	3	4	5	6	7	8	9
24 V DC	260 A	390 A	520 A	650 A	780 A	910 A	1040 A	1170 A	1300 A
48 V DC	260 A	390 A	520 A	650 A	780 A	910 A	1040 A	1170 A	1300 A
110 V DC	260 A	390 A	520 A	650 A	780 A	910 A	1040 A	1170 A	1300 A
120 V DC	260 A	390 A	520 A	650 A	780 A	910 A	1040 A	1170 A	1300 A
220 V DC	140 A	210 A	280 A	350 A	420 A	490 A	560 A	630 A	700 A
240 V DC	140 A	210 A	280 A	350 A	420 A	490 A	530 A	630 A	700 A

Optional transit case

Aluminium case for BTS 200 MKII or ELU 200 MKII with carrying handle and wheels.

Dimensions: 330x820x610mm. Weight: 14 kg.

Power supply: three options

. 100 V - 240 V AC, 50 / 60 Hz.

. 100 V - 270 V DC.

From the battery under test

110 V - 240 V DC.

Weight and dimensions

BTS 200 MKII with handles and wheels

Dimensions: 283 x 700 x 420 mm;

Weight: 32 kg (without the optional case).

ELU 200 MKII (optional)

Dimensions: 283 x 700 x 420 mm;

Weight: 30 kg (without the optional case).

Accessories supplied with the unit

Power supply cable and earth cable.

No. 2 battery cables, terminated with crocodile clamps.

Software for BTS 200 MKII.

USB interface cable.

Operating Manual.

Optional current clamp

Ranges: 40 A DC (10 mV/A) and 400 A DC (1 mV/A).

Accuracy: 1.5% up to 40 A; 2% up to 400 A.

Maximum conductor diameter: 30 mm.



Testing cables and current clamp

APPLICABLE STANDARDS

Electromagnetic compatibility

Directive no. 2004/108/EC.

Applicable Standard : EN61326-1 + A1 + A2.

Low voltage directive

Directive n. 2006/95/EC.

Applicable standards, for a class I instrument, pollution degree

2, Installation category II: CEI EN 61010-1. In particular:

- Operating temperature: 0 - 40°C; storage: -25°C to 70°C.

- Relative humidity : 5 - 95%, not condensing.

ORDERING INFORMATION

CODE	MODULE
20167	BTS 200 MKII for battery: 24 - 48 -110 - 220 V DC suitable for external load, with software and testing cables
21167	ELU 200 MKII EXTERNAL LOAD 130A with testing cable

Options for BTS 200 MKII and ELU 200 MKII

CODE	MODULE
12167	Current clamp for BTS 200 MKII
28167	Transport case for BTS 200 MKII
28167	Transport case for ELU 200 MKII