



# BTS/100

Battery load unit

## Testing Substation Batteries



Electrical power are normally equipped with batteries of different type and regular test according to international standard are requested in order to assure the stand by power for relays, circuit breakers and measuring equipment.

- HIGH POWER BATTERY CAPACITY TEST SYSTEM
- DISCHARGING CURRENT UP TO 300 A
- SUITABLE FOR ALL BATTERY TYPES



## Application

The most reliable method for the determination of battery capacity is to perform a discharging cycle periodically.

**BTS/100** allows to perform such test combining efficiency with portability.

**BTS** can test any type of battery with a discharging current up to 300 A.

Two **BTS 100** load unit types are available:

**BTS 100**: Stand alone unit, NOT suitable for connection with external load.

**BTS 100 PLUS**: Stand alone unit suitable for connection with external loads **ELU/100** (optional).

## BTS/100 Specification

### Maximum discharging current with BTS/100 plus

Stand alone unit

BATTERY NOMINAL VOLTAGE	MAX CURRENT DISCHARGED
240 V	50 A
220 V	50 A
140 V	100 A
110 V	100 A
48 V	100 A
24 V	100 A

### Maximum discharging current with BTS/100

Stand alone unit

BATTERY NOMINAL VOLTAGE	MAX CURRENT DISCHARGED
140 V	100 A
110 V	100 A
48 V	100 A
24 V	100 A

### Maximum discharging current with BTS/100 plus

With 1 external load ELU 100

BATTERY NOMINAL VOLTAGE	MAX CURRENT DISCHARGED
240 V	100 A
220 V	100 A
140 V	200 A
110 V	200 A
48 V	200 A
24 V	200 A

### Maximum discharging current with BTS/100 plus

With 2 external load ELU 100

BATTERY NOMINAL VOLTAGE	MAX CURRENT DISCHARGED
240 V	150 A
220 V	150 A
140 V	300 A
110 V	300 A
48 V	300 A
24 V	300 A

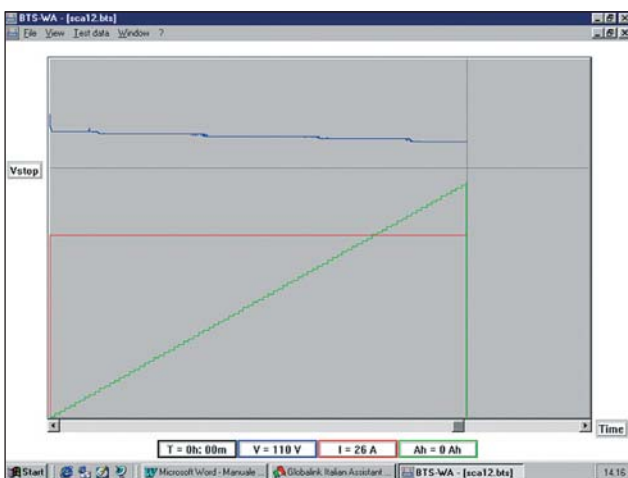
- The test set shows on the large back-lighted LCD display the following test parameters:
  - . Battery voltage;
  - . Minimum voltage threshold (adjustable), with automatic stop;
  - . Discharging current;
  - . Ah (ampere-hour) discharged;
  - . Test time duration with automatic stop at time out.
- Test parameters are entered via the functional push buttons and the LCD display on the front panel.
- The discharging current is set by means of push buttons, from 1 A to 300 A, with steps of 1 A.
- Measurement of the discharging current:
  - . Range: 0 - 100 A (300 A);
  - . Display: 0 - 100 A (0 - 300 A with external loads);
  - . Accuracy:  $\pm 1\%$  of the value,  $\pm 0.2\%$  of the range.
- Constant discharge current, independently from the discharge voltage. The unit regulates automatically the load during the entire test.
- Setting of the minimum voltage threshold, from 0 to 200 V with step of  $\pm 1$  V.
- 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.
- Measurement and display of the discharged ampere-hour.
- Setting of the maximum testing time: from 0 to 9h:59' with 1' steps.

- Automatic stop functions:
  - . Minimum voltage threshold;
  - . Time out (Max. 9h.59');
  - . Internal over-temperature.

- Serial interface: RS 232.

## Software BTSWA

The software BTSWA, that runs within Windows 3.1 or 95 and allows to control the BTS 100 with a Lap Top PC.



The Software BTS/WA performs the following features:

- . Set the BTS 100 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 manage the BTS alarms;
- . When the test is completed it is possible to save the results and to print it both in graphic and tabular form.

### External load ELU/100 (optional)

When higher load current is necessary, it is possible to use the BTS/100 PLUS in connection with 1 or 2 external loads ELU/100.

ELU/100 is a resistive extra loads that allows different configurations, in order to set the discharging current at different voltage levels.

BTS/100 PLUS allows the connection up to 2 external loads ELU/100.

### 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".

### Case

BTS 100 Aluminium case with covers and carrying handle for the transport.

ELU/100 External Load (Optional): Aluminium case with covers and carrying handle for the transport.

### Weight and dimensions

#### BTS/100 AND BTS/100 PLUS

Dimensions: 600x 340 x 530 mm;  
(with aluminum case).

Weight: 34 kg (with aluminum transport case).

#### ELU/100 (optional)

Dimensions: 600x 340 x 530 mm  
(with aluminum case).

Weight: 28 kg;

### Accessories supplied with the unit

Transit case with handles.

Power supply cable.

No. 2 x 5 m cables 25mm, terminated with crocodile clamps.

Software BTSWA.

Serial interface cable.

Operating Manual.

## Applicable Standards

### Electromagnetic compatibility

Directive no. 89/336/CEE dated May 3, 1989, modified by the directive 92/31/CEE dated May 5, 1992.

Applicable Standards:

EN 50081-2; EN 50082-2; EN 55011;  
EN 61000-3-3; EN 50082-2; ENV 50140; ENV 50141;  
ENV 50204; IEC 1000-4-2; IEC1000-4-4; IEC 1000-4-6; IEC 1000-4-8.

### Low voltage directive

Directive n. 73/23/CEE, modified by the directive 93/68/CEE.

Applicable standards, for a class I instrument, pollution degree 2,

Installation category II: CEI EN 61010-1.



In particular:

Operating temperature: 0 - 45°C;

storage: -25°C to 70°C.

Relative humidity: 10 - 80% without condensing.

#### Ordering information:

CODE	MODEL
10141	BTS/100 for battery: 24-48-110 VDC with software and test cable - Mains 230V $\pm$ 15%
20141	BTS/100 for battery: 24-48-110 VDC with software and test cable - Mains 115V $\pm$ 15%
10142	BTS/100-220 PLUS for battery: 24- 48-110-220 VDC suitable for external load with software and test cable - Mains 230V $\pm$ 15%
20142	BTS/100-220 PLUS for battery: 24- 48-110-220 VDC 115V suitable for external load with software and test cable - Mains 115V $\pm$ 15%
12142	ELU 100 EXTERNAL LOAD 100 A with test cable - Mains 230V $\pm$ 15%
22142	ELU 100 EXTERNAL LOAD 100 A - 115 V with test cable - Mains 115V $\pm$ 15%

