Operating Manual

Mobile Battery String Test Generator for battery installation and service

Contents

You have acquired the Battery String Tester BSTG-3700 mobile and we thank you for the trust shown towards us. To ensure optimum use of your device, we kindly ask you

- **to read this Operating Manual carefully**
- **to comply precisely with the operating instructions**

2. SAFETY INSTRUCTIONS

This device and its accessories conform to the safety standards IEC 61000-6-4 and IEC 61000-6-2 in measurement category IV, for voltages of up to 1,000 V in closed spaces, with a maximum contamination level of 2 and up to a sea level of maximum 2000m. Failure to comply with the safety instructions can result in risks through electric shock, fire or explosion, as well as in the destruction of the device and of the system.

2.1 2.1 General safety instructions

2.1.1 This device must be used exclusively by trained specialist personnel.

2.1.2 Use personal protection equipment if the circumstances require this.

2.1.3 The user or the responsible person must read the various safety instructions carefully and understand them properly.

2.1.4 If the device is used incorrectly and in a manner not described, the built-in protection can no longer be guaranteed and there is a possible risk to the user.

2.1.5 Position the device a sufficient distance from the battery chain, in order to prevent the device from falling over onto the battery chain.

2.1.6 Never use the device in an environment with a risk of explosion or in the vicinity of combustible gases.

2.1.7 To prevent a short circuit or a risk through electric shock, the devices must not be exposed to either rain or dampness.

2.1.8 Never use the device on networks with higher voltages than that stated.

2.1.9 Never use the device if it appears to be damaged, incomplete or poorly closed.

2.1.10 Check the perfect condition of the insulation of the measurement leads, the housing and the accessories before every use. Parts with even partially damaged insulation must be set apart for repair or disposal.

2.1.11 Use exclusively the accessories provided (connection leads and terminals etc....). The use of accessories with a lower rated voltage or measurement category reduces the permissible voltage or measurement category to the respective lowest value of the accessories used.

2.1.12 Always observe the ambient conditions stated (3.1). If the device has been stored for example **in a car boot at high temperatures**, operation of the device is only possible following a **cooling-down** phase.

2.1.13 **When using the function described under Number 5.1, the utmost caution must be exercised, as the battery terminals remain live during this function, even when disconnected.**

2.1.14 The inside of the device contains non-insulated parts and parts under high voltage that can result in a **life-threatening shock** if touched.

2.1.15 Do not use sharp cleaning materials. Also pay attention to ensuring that no liquid enters the interior of the device during cleaning.

2.1.16 Do not alter the device and do not replace any components with so-called “equivalents". Repairs and settings must only be carried out by authorised specialist personnel.

2.1.17 In the European Union the product must be sent to separate electrical waste disposal under the WEEE Directive 2012/19/EU, or returned to the manufacturer SETA GmbH, In Beecker Bissen 9, 41844 Wegberg. The product must not be disposed of as normal waste.

3.1 Ambient conditions

Ambient conditions	during operation	during storage
Temperature	- 20 °C to +55 °C	- 40 °C to +70 °C
Relative humidity:	≤ 80 % at +55 °C	≤ 80 % at up to +70 °C

3.2 Characteristics

Housing:	Solid polycarbonate housing Varnished UV-resistant
Crocodile clamps:	Contact material: Brass, nickel-plated Housing material: PP Tong openings: 30 mm CAT II 1000V 9.5mm mm CAT II 300V
Display:	LC display Blue background lighting
Dimensions:	300 x 230 x 110 mm (L x W x D) 385 x 294 x 110 mm (L x W x D) with carrying strap
Weight:	4.7 kg
Supply:	200 – 240 VAC / 0.9A 50/60 Hz
Output current	1500 Hz sine up to 21 A (RMS current) on up to 700 V

3.3 Fulfilment of standards

Electrical safety:	Fulfils the standards IEC 61010-1, IEC 61010-2-30 and IEC 61010-2-32:
Electromagnetic compatibility:	Fulfils standard EN 61000-6 Classification: Industrial sector

4. Basic operation

4.1 Commissioning

Commissioning is carried out **WITHOUT** connected battery connection leads.

4.1.1 Electrical connection

Plug the IEC cable provided into the side device socket.

4.1.2 Switching on and off

Switch the device on using the side rocker switch.

Do NOT switch the device off once the program has been started, see Section 4.2.3

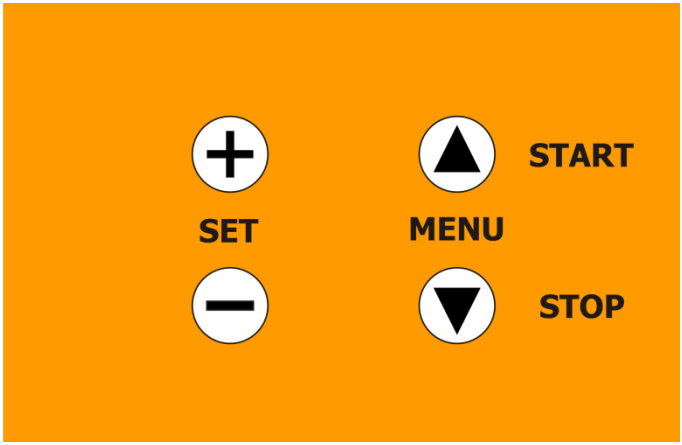
The device name, series number and firmware version are displayed

4.1.3 Calibration

After switching on, the device calibrates itself automatically.
This process takes approx. 30 seconds.

4.2 Operation

4.2.1 Setting the current via the key panel



Use ⊕ and ⊖ to select the pre-setting (PRESET) of the desired output current from 1 A to 21 A. The figure is the sine RMS value

4.2.2 Connection of the battery connection leads

First connect the connection leads to the BSTG-3600 mobile and then to the battery. The connected terminal voltage of the battery will be shown on the display (terminals):

If the polarity is incorrect “NEG” will appear

Connect the connection leads with the correct polarity.
Incorrect polarity will not cause damage; nevertheless, it will not be possible to start the program as smooth running is not guaranteed.

4.2.3 Starting the program

The program can only be started if the battery is connected. This requires a terminal voltage of at least 12V.

The program is started with START.
An automatic start cycle begins for the safe coupling of the internal sine generator to the battery.

This can be ended at any time with STOP, an automatic stop cycle begins for the safe run-down of the DC link capacitors.

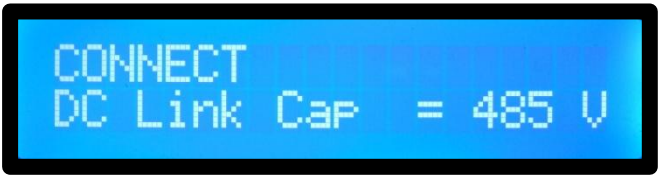
Do NOT switch off the device before the stop cycle has ended!

The start cycle is as follows

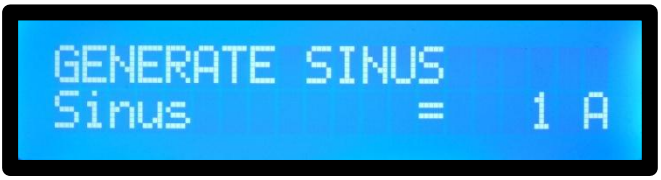
The coupling capacitors (DC Link Cap) are charged in a controlled manner, the charging voltage is displayed.

When the charging voltage has approximately reached the level of the battery voltage the charging will be ended (CHARGE READY).

The battery is now connected internally to the device's sine generator (CONNECT).



The generator will then be started (GENERATE SINE) and the sine current fed through the battery. The current will be displayed and will remain stable after a short adjustment period.



Note
For safety reasons, the feed will be ended immediately if the battery is disconnected. This safety switch-off can be deactivated, see Section 5.

Press 

to end the feed.

An automatic stop cycle begins for the safe decoupling of the internal sine generator and run-down of the DC Link capacitors.

The stop cycle is as follows.

The internal sine generator is switched off (STOP SINUS)

The battery is disconnected from the DC Link capacitors (DISCONNECT)

The DC Link capacitors are discharged in controlled manner, the residual voltage is displayed (DISCHARGE LINK CAP)

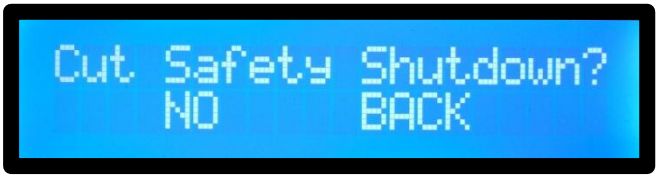
After roughly 2 seconds the device switches to the starting condition, the procedure can be started again.

5. Options

5.1 Deactivation of the safety switch-off

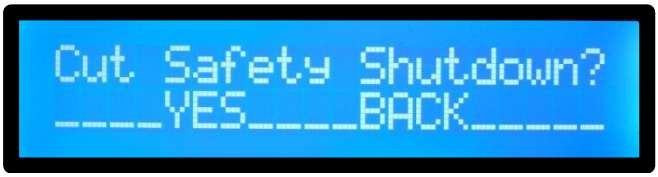
If the safety switch-off has been deactivated, the battery connection terminals remain live even when disconnected.

Keep STOP pressed for 5 seconds until the following notification appears:



Use ⊖ to select “NO”, the safety switch-off is activated.

Use ⊕ to select “YES”, **the safety switch-off is DEACTIVATED**:



Return with START. The deactivated safety switch-off is shown in the display using underscores.

6. Error notifications

6.1 Excess temperature

If the temperature within the housing is above 85° C the device must no longer be operated, as the proof voltage of the DC Link Caps is then reduced.

A corresponding warning will appear:

The device can only be used again when the temperature falls below 75°C.