A **STEVO** Electric product

DC CURRENT GENERATOR

BALTO COMPACT 4.000A

4000 A

BALTO

STEVO Electric bvba

Internationally patented

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BALTO Compact 4.000A

In addition to the modular BALTO DC Current Generator 4.000A to 40.000A, we are now introducing a BALTO Compact 4.000A version. It has been developed specifically for testing DC High-Speed Circuit Breakers at Rolling Stock, Tramways and primary infrastructure. BALTO Compact 4.000A is also suitable for on-board maintenance in marine applications.
Special attention was given to the weight and size of this compact version which resulted in an ergonomic design and permits usage in small spaces.

General Information

The BALTO Compact 4.000A system is based on the BALTO DC Current Generator standard version scalable up to 40.000A. However, it is not expandable and limited to a test current of max. 4.000A

Construction

All the innovation of the standard BALTO DC Current Generation 4.000A up to 40.000A is also present in the BALTO Compact 4.000A version. The Compact BALTO System consists of the following modules:

- *Compact mechanical design*
- *Main Unit contains:*
  Control Unit – Operator Terminal
  Utilities:
  Power supply batteries boosted by ultra-caps and a charger
- *Power unit 4.000A*
- *High current cable set*

Each module is easily transportable.
The complete assembling of the BALTO test-set 4.000A is done rapidly, in an easy way and without the use of tools.

***Option**: testing of DC protections (secondary injection).*
The Main Unit can be extended with a Submodule ADP for testing the DC protections of DC switchgear located in the DC substations. In this way, the BALTO Compact 4.000 can perform primary as well as secondary injection tests.

***Note**: the Submodule ADP is available as an option.*

Innovations

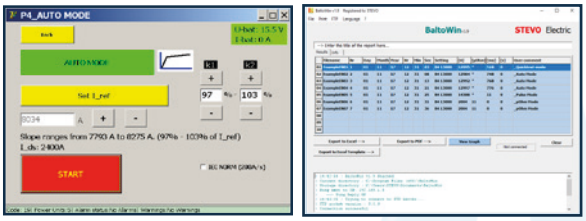
- *Ergonomic design*
- *Energy sources: batteries and ultra-caps*
- *Power units: DC/DC current converters- Internationally patented*
- *Current rising slope according to IEC norms*
- *Current rate of rise can be adjusted*

Communication

- *USB interface*
- *Ethernet RJ45 interface*

Options

- *BALTO Win: Software package for off-line processing of test results and Remote control*



Easy export of data and graphs into Excel and Pdf files.

- *Calibration tool: for self-calibration of the BALTO System*
- *Service cart*

Safety

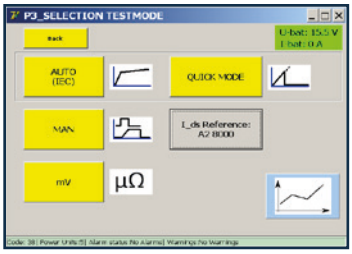
During the development of the BALTO system, special care was taken to the aspects of safety, health and the environment.
Automated monitoring of the system, including the temperature, is standard available.

BALTO System features

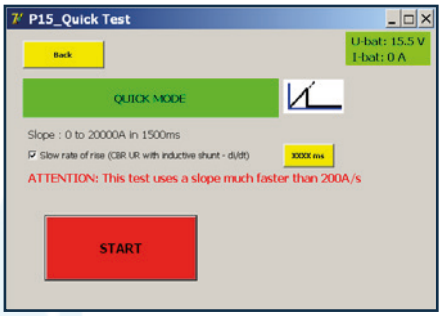
- *Auto diagnostic – Control and calibration of current measurement of the Power unit 4.000A*
- *Current increase supervision*
- *Check the settings and performance of the High-Speed DC Circuit Breaker*
- *Check functionality of the DC protection relay, e.g Delta I, di/dt, Imax etc.*
- *Accurate displaying of all test results and stored in memory for easy retrieval*

Test Modes

- *Automatic mode with quick-test*
- *Manual mode*
- *Voltage drop measurement*



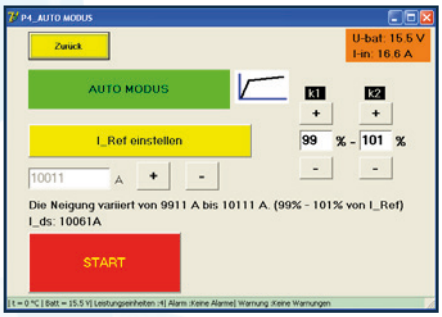
☞ *Selection of test modes*

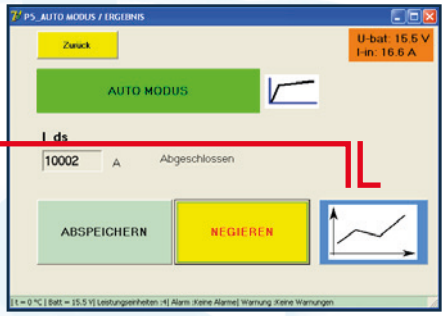


Quick test/ automatic mode

- *Quick test to determine the Ids level*
- *Automatic test with current increase slope according to IEC norms*

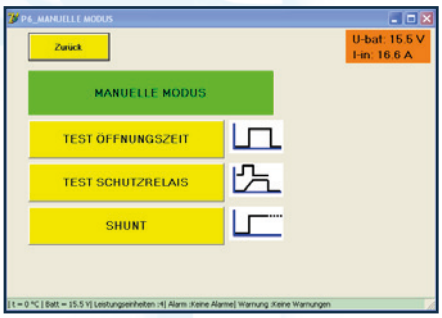
☞ *Graphical display of measurements results*





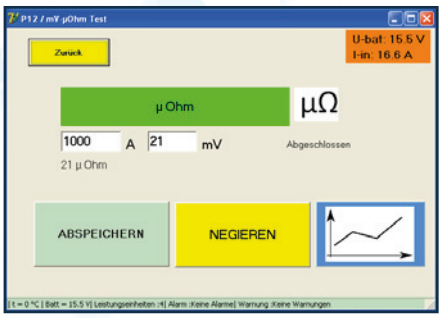
Manual Mode

- *Measure of the mechanical reaction time by tripping of the DC high speed circuit-breaker*
- *Testing of the DC protection relays*
- *Calibration of measuring circuits*
- *Measuring of reaction time: Manuel opening and Manuel closing in conjunction with BCD (Breaker Control Drive) and Submodule ADP for secondary injection.*



Voltage drop measure

- *Voltage drop measurement in accordance with the procedure prescribed by the manufacturers of High-Speed DC Circuit Breakers*



Applications

The BALTO System was developed for specific applications in the railway environment, including:

- *High-Speed DC Circuit Breakers for DC substations and their protection relays*
- *High-Speed DC Circuit Breakers used on the rolling stock: locomotives, train sets, subways, undergrounds and tramways.*
- *Electromagnetic contactors – Line breakers (control and main) in tramways and trolleybuses*
- *Electromagnetic contactors - Line breakers (control and main) with over current protection*
- *DC protections used in the DC switchgear or supplies of overhead lines, third rail, trolleys or others*

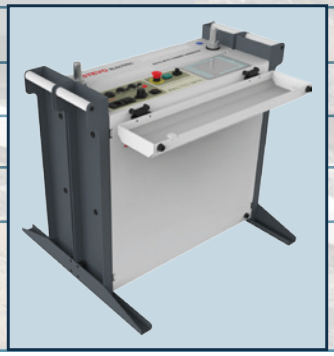
Moreover the BALTO System can be used for other applications where very high currents are required.

Hint: Replaces equivalent testing of DC high speed circuit breakers on submarines and ships.

DC CURRENT GENERATOR BALTO COMPACT 4.000A

TECHNICAL DATA

Power supply BALTO	*Auxiliary supply - mains 220VAC - 240VAC/50Hz and 110VAC -120VAC/60Hz*
Power supply voltage	*Batteries and Ultra-caps 12VDC – 15,7VDC*
Available ranges	*Power unit 4.000A*
Compact Design	*Offers the following features:* *Main unit* ☛ *Operator Terminal – Operation, Control, Supervision and DC protection* ☛ *Communication interfaces* ☛ *Auxiliary supplies* ☛ *Batteries and charger* ☛ *Ultra-caps* *Poids : 16,4Kg* *Dimension: 500 x 480 x 230mm*
Power unit	*Current converters DC/DC 4.000A* *Weight per power unit: 24,5Kg* *Dimensions: 700 x 430 x 160mm*
Output characteristics	*Output voltage: 3,6VDC - 4,71VDC* *Output current: 100A - 4.000A*
Measurement	*Measurement of the effective trip current level Ids* *Measurement of the mechanical reaction time by tripping* *Measurement of the voltage drop*
Environment	*Application area :* *This test equipment is destined for applications in substations, electrical areas and industrial environments.* *Security norms :* ☛ *According harmonised document EC directive 2006/42/EEC* ☛ *LVD : 2006/95/EC (LVD EN61010-1:2001)* ☛ *EMC: 2004/108/EEC (EC EN61326-1:2006)*
Connections	*Power supply cable :* ☛ *standard* *Output* ☛ *High current flex cables: 240mm² – 2m à 3m (standard 2m) set of two pieces* *Earth cable: 16 mm²*
Applications	*DC substations,* *Maintenance workshops for locomotives, train sets, subways, undergrounds, tramways and trolleybuses* *Submarines and navigation: all kinds of high speed DC circuit breakers*
Operating temperature	*0C° … +55C°*
Storage temperature	*-20C° … +35C°*
Humidity	*95% RH non condensing*
Protection	*IP22*



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