2823
HIGH PRECISION TANδ/POWER FACTOR MEASURING INSTRUMENT

www.haefely-hipotronics.com
HIGH PRECISION MEASURING INSTRUMENT

Application
The High Precision tan δ / power factor measuring instrument is designed for measurement of very low dielectric losses of high-voltage apparatus.

Unique device - Tailor made for the industry
HAEFELY HIPOTRONICS, the pioneer in high voltage testing since 1904, has been continuously developing and improving this product line since the first manual measuring bridge Tettex type-2801 was introduced in 1963.

Tettex brand, a part of Haefely Hipotronics, is world-wide recognized for the accuracy and reliability of our measuring instruments. The new 2823 belongs to our new generation of measuring instruments, which includes a perfect combination of more than 50 years experience in this field together with state of the art technologies.

The use of optically decoupled connection allows complete galvanic isolation between control room and test field, and guarantees the personnel the highest safety level.
FEATURES

Compact, reliable and EMC hardened design, IP50.

Optically decoupled from computer.

Up to 15A input current with auto-range.

Extremely low input impedance

Industrial measuring and fiber optic connectors

Mains Powered

BENEFITS

The galvanic isolation fully ensures safety of the personnel. With the 2823, there is no electrical connection between the control room and the high voltage test room.

Simple connection to test objects without external shunts or hardware reconnections due to the high input current range.

Increased linearity and extended frequency measuring range up to 1 kHz.

Backwards compatible with older instruments and cabling, same connectors used for over 40 years.

Turn key solution from one supplier possible (including power supplies, standard capacitors, current comparators, test cells, certified calibration...).

Connect and forget, No battery pack or recharge needed.

APPLICATIONS

Routine and type test of:

- Power Cables & Accessories
- Shunt Reactors losses
- Capacitors
- Instrument Transformers
- Bushings & Isolators
- Metrology Institutes
- Research & Development
2823 SOFTWARE
EASY TO USE & PROVED

Intuitive graphical user interface allows for simple operation and minimal training of test personnel.

- Test planning, preparation, execution and first assessment can be handled with just a mouse click.
- The test time for setup can be reduced significantly with definable pop-up graphics.
**GALVANIC ISOLATION**

Fiber optic link between the 2823 and the control PC provides a complete galvanic isolation, with the following benefits:

- The length of the fibre optic cable does not impact the measurement ratio or the calibration.
- Fully ensures safety of personnel. With the 2823, there is no electrical connection between the control room and the high voltage test room.

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**Front-end digitizing**

With the 2823 front-end digitizer, the measuring current stays in the HV laboratory eliminating any potential danger in the control room.

**Conventional back-end**

With a back-end digitizer, current circulates to control room and back to ground.
### 2823 BASIC SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>2823</th>
<th>2823-REF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement Accuracy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissipation factor (tan δ)</td>
<td>± 0.1% RD ± 5 x 10^-6</td>
<td>± 0.1% RD ± 1 x 10^-5</td>
</tr>
<tr>
<td>Capacitance</td>
<td>± 0.1% RD ± 0.05 pF (1)</td>
<td>± 0.02% RD ± 0.01 pF (1)</td>
</tr>
<tr>
<td>Current</td>
<td>0.1% rdg ± 0.1 nA (1)</td>
<td>0.05% rdg ± 0.05 nA (2)</td>
</tr>
<tr>
<td>Current Range</td>
<td>10 μA .... 15 A (2)</td>
<td>10 μA .... 15 A (3)</td>
</tr>
</tbody>
</table>

1. Temperature range: 23°C ± 5°C 
2. Current can be extended up to 10,000A with current extenders 4762, 4761 and 4764 

Complete technical specifications in the 2823 Datasheet available at www.haefely-hipotronics.com

### 2823 CONFIGURATION

#### STANDARD PACKAGE

- **2823**
  - Measuring Bridge 3490101
  - Measuring Bridge 3490102

- **2823-REF**
  - Including Software Basic Package in USB stick
  - Fiber Optic - Ethernet adaptor (Media Box)
  - Industrial Fiber Optic Cable, 20 m
  - Test Report and ground cable
  - Instruction Manual (Electronic, PDF)

#### OPTIONS

- **Cable sets including:**
  - 1 x Lemo-Lemo Orange marked C
  - 1 x Lemo-Lemo Blue marked - C
  - 1 x Lemo-Alligator
  - 1 x V-Cable

- **Available lengths:**
  - 4843321 10 m length 28XX/CAB10
  - 4843322 20 m length 28XX/CAB20
  - 4843323 40 m length 28XX/CAB40

- **Software**
  - 4843241 Office Software Package 28XX/SW

- **Extended Warranty**
  - 2 years 2823/WE2
  - 3 years 2823/WE3

#### Accessory

- Laptop
- PCI
- Standard scope of supply
- Option
- Rugged Fiber Optic

#### Media Box

- Software
- 2
- Media Box
- 3
ACCESSORIES

Measurement Cables

<table>
<thead>
<tr>
<th>Code</th>
<th>Length</th>
<th>Description</th>
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<tbody>
<tr>
<td>4841868</td>
<td>2 m</td>
<td>Lemo-Lemo/Blue/2</td>
</tr>
<tr>
<td>4840203</td>
<td>10 m</td>
<td>Lemo-Lemo/Blue/10</td>
</tr>
<tr>
<td>4841871</td>
<td>20 m</td>
<td>Lemo-Lemo/Blue/20</td>
</tr>
<tr>
<td>4844065</td>
<td>40 m</td>
<td>Lemo-Lemo/Blue/40</td>
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</tbody>
</table>

Shielded Measuring cable (orange marked), Lemo:

<table>
<thead>
<tr>
<th>Code</th>
<th>Length</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>4841872</td>
<td>2 m</td>
<td>Lemo-Lemo/Orange/2</td>
</tr>
<tr>
<td>4840206</td>
<td>10 m</td>
<td>Lemo-Lemo/Orange/10</td>
</tr>
<tr>
<td>4840041</td>
<td>20 m</td>
<td>Lemo-Lemo/Orange/20</td>
</tr>
<tr>
<td>4842541</td>
<td>40 m</td>
<td>Lemo-Lemo/Orange/40</td>
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Measurement cable adaptors

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>4841895</td>
<td>Lemo Banana</td>
</tr>
<tr>
<td>4840186</td>
<td>Lemo - small clamp</td>
</tr>
<tr>
<td>4840169</td>
<td>Lemo - large clamp</td>
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Accredited Calibration

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<th>Description</th>
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<tr>
<td>4844118</td>
<td>Accredited Calibration 2823</td>
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Computers

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<tr>
<th>Code</th>
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<tr>
<td>4840603</td>
<td>Laptop 15”</td>
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Nominal Capacitor (refers to)

<table>
<thead>
<tr>
<th>Code</th>
<th>Type</th>
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<tbody>
<tr>
<td>3490016</td>
<td>Type 4762 (up to 400 A)</td>
</tr>
<tr>
<td>3490015</td>
<td>Type 4761 (up to 2’000 A)</td>
</tr>
<tr>
<td>3490017</td>
<td>Type 4764 (up to 10’000 A)</td>
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</tbody>
</table>

Current Extenders (refers to)

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<tr>
<th>Code</th>
<th>Type</th>
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<tr>
<td>3490016</td>
<td>Type 3320 Air isolated (up to 2 kV)</td>
</tr>
<tr>
<td>3490015</td>
<td>Type 3370 SF6 isolated (up to 200 kV)</td>
</tr>
<tr>
<td>3490017</td>
<td>Type NK SF6 isolated (above 200 kV)</td>
</tr>
</tbody>
</table>