The CBPS-300 is a microprocessor-controlled, variable-voltage, DC power supply. It is designed to replace substation batteries during circuit-breaker testing. The CBPS-300 provides a ripple-free, DC power source to operate utility circuit breakers during contact-timing and other breaker-testing operations.

The CBPS-300 can operate the Open and Close coils of a circuit-breaker during testing under different selectable operating conditions such as full voltage mode or minimum voltage operations. The CBPS-300 can be substituted as an alternative power supply when substation battery power supplies become unsafe or unavailable when performing maintenance tests on circuit-breakers. Using the CBPS-300, minimum trip voltage tests per ANSI C37.09 or IEC 56 standards can be performed with minimum effort.

The unit’s built-in Initiate circuit can be used from the control panel to Open or Close breakers. Also, a separate DC power supply is available to drive the breaker’s mechanism charging motor. All of the CBPS-300’s supply outputs are current-overload protected. This feature protects the power supply and eliminates the need for conventional fuses or circuit-breaker protection circuitry.

The CBPS-300’s controls are organized in a logical array with intuitive control markings. Momentary-operational push-buttons labeled OPEN, CLOSE and MOTOR are used to operate the breaker’s respective coils and charging motor. A voltage control knob is used to set the DC output voltage. The unit features a back-lit LCD screen (16 characters by 2 lines) that is viewable in both bright sunlight and low-light levels.

The CBPS-300 also provides an external initiate input trigger that can be used in conjunction with Vanguard’s DigiTM R and CT-6500 S2/7000 S2/7500 S2/8000 circuit-breaker timers.

### Specifications

**Type**
Variable voltage DC power supply

**Physical Specifications**
- 16.8" W x 12.6" H x 12" D (42.6 cm x 32.0 cm x 26.9 cm); Weight: less than 40 lbs (18.1 kg)
- 120 or 240 Vac (factory pre-set), 50/60Hz
- Back-lit LCD Screen (16 characters by 2 lines); viewable in bright sunlight and low-light levels
- 0 – 300 VDC, ±1V

**DC Volt Meter Display**

<table>
<thead>
<tr>
<th>DC Outputs</th>
<th>Current</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Vdc</td>
<td>10A</td>
<td>Less than 6%</td>
</tr>
<tr>
<td>48 Vdc</td>
<td>10A</td>
<td>Less than 3%</td>
</tr>
<tr>
<td>120 Vdc</td>
<td>6A</td>
<td>Less than 2%</td>
</tr>
<tr>
<td>250 Vdc</td>
<td>3A</td>
<td>Less than 2%</td>
</tr>
</tbody>
</table>

**Coil DC Power Supply**

<table>
<thead>
<tr>
<th>No Load Voltage</th>
<th>Load Current</th>
<th>Load Interval</th>
<th>Full Load Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 Vdc</td>
<td>12A</td>
<td>60 S</td>
<td>40 Vdc</td>
</tr>
<tr>
<td>48 Vdc</td>
<td>18A</td>
<td>20 S</td>
<td>30 Vdc</td>
</tr>
<tr>
<td>120 Vdc</td>
<td>12A</td>
<td>60 S</td>
<td>90 Vdc</td>
</tr>
<tr>
<td>120 Vdc</td>
<td>18A</td>
<td>20 S</td>
<td>70 Vdc</td>
</tr>
<tr>
<td>240 Vdc</td>
<td>6A</td>
<td>60 S</td>
<td>200 Vdc</td>
</tr>
<tr>
<td>240 Vdc</td>
<td>9A</td>
<td>20 S</td>
<td>185 Vdc</td>
</tr>
</tbody>
</table>

**Initiate Circuit**
Built-in Open and Close solid-state initiate circuit.

**Charging Motor DC Power Supply**

<table>
<thead>
<tr>
<th>No Load Voltage</th>
<th>Load Current</th>
<th>Load Interval</th>
<th>Full Load Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 Vdc</td>
<td>12A</td>
<td>60 S</td>
<td>40 Vdc</td>
</tr>
<tr>
<td>48 Vdc</td>
<td>18A</td>
<td>20 S</td>
<td>30 Vdc</td>
</tr>
<tr>
<td>120 Vdc</td>
<td>12A</td>
<td>60 S</td>
<td>90 Vdc</td>
</tr>
<tr>
<td>120 Vdc</td>
<td>18A</td>
<td>20 S</td>
<td>70 Vdc</td>
</tr>
<tr>
<td>240 Vdc</td>
<td>6A</td>
<td>60 S</td>
<td>200 Vdc</td>
</tr>
<tr>
<td>240 Vdc</td>
<td>9A</td>
<td>20 S</td>
<td>185 Vdc</td>
</tr>
</tbody>
</table>

**Output Protection**
All DC outputs are over-current protected.

**Safety**
Designed to meet UL 61010A-1 and CAN/CSA C22.2 No. 1010.1-92 standards.

**Environment**
- Operating: -10° to 50° C (15°F to +122°F); Storage: -30° C to 70° C (-22°F to +158°F)
- 90% RH @ 40°C (104°F) non-condensing
- 2,000m (6,562 ft) to full safety specifications
- Three 10-foot cable sets, one power cord, one ground cable, one cable carrying duffel bag

**Warranty**
One year on parts and labor.

Note: The above specifications are valid at nominal voltage and ambient temperature of +25°C (+77°F). Specifications are subject to change without notice.
Substation Batteries During Circuit Breaker Testing

Substation Batteries During Circuit Breaker Testing

CBPS-300 DC Power Supply

External Control
Open Initiate
Close Initiate
Motor Control

Built-in Circuit Breaker
Back-lit LCD Screen (16 characters by 2 lines)
Display Selection
Voltage Control Knob

CBPS-300 Connections

Ordering Information
CBPS-300 Power Supply  Part No. CBPS-300
CBPS-300 Shipping Case  Part No. CBPS-300 Case

Vanguard Instruments Company
Reliability Through Instrumentation
RVFeb09
Vanguard Instruments Company, Inc.

Vanguard Instruments Co., (VIC), was founded in 1991. Currently, our 28,000 square-foot facility houses Administration, Design & Engineering, and Manufacturing operations. From its inception, VIC’s vision was, and is to develop and manufacture innovative test equipment for use in testing substation EHV circuit breakers and other electrical apparatus.

The first VIC product was a computerized circuit-breaker analyzer, which was a resounding success. It became the forerunner of an entire series of circuit-breaker test equipment. Since its beginning, VIC’s product line has expanded to include microcomputer-based, precision micro-ohmmeters, single and three-phase transformer winding turns-ratio testers, winding-resistance meters, transformer tap-changing controllers, megaohm resistance meters, and a variety of other electrical utility maintenance support products.

VIC’s performance-oriented products are well suited for the utility industry. They are rugged, reliable, accurate, user friendly, and most are computer controlled. Computer control, with innovative programming, provides many automated testing functions. VIC’s instruments eliminate tedious and time-consuming operations, while providing fast, complex, test-result calculations. Errors are reduced and the need to memorize long sequences of procedural steps is eliminated. Every VIC instrument is competitively priced and is covered by a liberal warranty.

Vanguard products are available from:

Vanguard Instruments Company, Inc.
1520 S. Hellman Ave. • Ontario, California 91761 USA • P 909-923-9390 • F 909-923-9391
www.vanguard-instruments.com