

# High Current/Circuit Breaker Test Sets

## 8,000 – 75,000 Amp Output



### Testing Applications

- Test virtually any low voltage, molded case, or metal clad direct acting AC circuit breaker by simulating overload and fault conditions
- Test current transformers and thermal or magnetic motor overload relays
- Configured in a series, can be used for substation maintenance, primary injection testing on high voltage circuit breakers and protective relays

### Models Available

- HC-8C
- HC-12C
- HC-20C
- HC-40C
- HC-75C

- Fully **automated** testing
- Precise, **repeatable current pulses** with minimal distortion
- Current **wave form** display
- **ISO17025 calibration** upon request



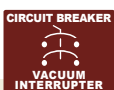
Model HC-8C



Model  
HC-20C



Model  
HC-75C



## Safety and Design Features

- Circuit breaker protection
- Control power switch with indicator and Output On indicator
- Interlock open indicator
- Emergency Off pushbutton
- Highly reliable SCR's combined with programmable phase angle firing system
- Continuously variable output over entire test range utilizing a motorized vernier and programmable tap selector allowing for both auto-jog and current-hold capabilities
- Sensing circuit selectable between current or contacts
- Digital AC voltmeter for monitoring input, output, and external voltage up to 600 VAC
- Currentmeter accuracy 0.8% of reading +0.3% of range
- Meters calibrated with standards certified by NIST
- Standard HCSS1 and HCSS2 stab sets supplied with optional stab sets available (for models HC12C, HC20C, HC40C and HC75C only)
- Operation/maintenance manual

## Computer-Control via WIN HC Software

User-friendly, menu-driven commands provide advanced database and report capabilities for test duplication and recall, report generation, and current wave shape display.

## Testing Modes

- Normal – the operator manually controls all functions of the test set.
- Jog-to-Hold – the test set jogs the output on at “Jog on Cycles” and off for “Jog off Secs” and raises the output until the “Hold Amps” is reached.
- Jog-to-Trip – the test set jogs the output on at “Jog on Cycles” and off for “Jog off Secs” until the circuit breaker under test trips.
- Current Hold – the output is held to within 1% of the “Hold Amps”.
- Memory – used for testing the sensitivity pickup of electronic controllers (when the stop button is pressed, the current level is recalled).

## Programmable Phase Angle Firing

This feature assures precisely repeatable current pulses with minimal distortion and DC offset. This is achieved by combining the use of highly reliable SCR's and computer-controlled firing system.

## Wave Form Display

This feature allows for viewing of the current wave form injected through the breaker. Detection of DC offset or contact bounce can be seen. With the use of the programmable phase angle firing circuit, DC offset may be corrected by varying the firing phase angle.



| MODEL   | HC8C  | HC12C  | HC20C   | HC40C   | HC75C                                      |                 |               |                 |               |
|---|---|--|---|---|--|-----------------|---------------|-----------------|---------------|
| <b>INPUT</b><br>(50 Hz or 60 Hz must be specified)      | 220-240 V, 100 A, 50/60 Hz<br>480 V, 50 A, 60 Hz<br>400 V, 50 A, 60 Hz  | 240 V, 60 A, 60 Hz<br>480 V, 30 A, 60 Hz<br>400 V, 30 A, 50 Hz | 240 V, 150 A, 60 Hz<br>480 V, 75 A, 60 Hz<br>400 V, 75 A, 50 Hz | 240 V, 320 A, 60 Hz<br>480 V, 160 A, 60 Hz<br>400 V, 160 A, 50 Hz | 480 V, 400 A, 60 Hz<br>400 V, 400 A, 50 Hz |                 |               |                 |               |
|   | Input currents based on 30 minute output ratings. Other input voltages are available, for example; 380 V, 50 Hz or 600 V, 60 Hz |  |   |   |  |                 |               |                 |               |
| <b>NUMBER of TAPS</b>                                   | 3   | 3  | 4   | 6   | 8  |                 |               |                 |               |
| <b>OUTPUT VOLTAGE</b>                                   | <b>OPEN CIRCUIT VOLTAGES</b>  |  |   |   |  |                 |               |                 |               |
|   | 8 / 16 / 32 V @ 240/480 V, 60 Hz  | <b>Parallel</b>  | <b>Series</b>   | <b>Parallel</b>   | <b>Series</b>                              | <b>Parallel</b> | <b>Series</b> | <b>Parallel</b> | <b>Series</b> |
|   | 7.7 / 15.3 / 30.7 V @ 230 V, 50 Hz  | 6.25 V, 50 Hz  | 12.5 V, 50 Hz   | 8.3 V, 50 Hz  | 16.6 V, 50 Hz                              | 10 V, 50 Hz     | 20 V, 50 Hz   | 13.3 V, 50 Hz   | 26.6 V, 50 Hz |
|   | 6.7 / 13.3 / 26.7 V @ 400 V, 50 Hz  | 7.5 V, 60 Hz   | 15 V, 60 Hz   | 10 V, 60 Hz   | 20 V, 60 Hz                                | 12 V, 60 Hz     | 24 V, 60 Hz   | 16 V, 60 Hz     | 32 V, 60 Hz   |
| <b>OUTPUT CURRENT</b>                                   |   | <b>Parallel</b>  | <b>Series</b>   | <b>Parallel</b>   | <b>Series</b>                              | <b>Parallel</b> | <b>Series</b> | <b>Parallel</b> | <b>Series</b> |
| Continuous Duty   | 2000 / 1000 / 500 A   | 1200 A   | 600 A   | 2000 A  | 1000 A                                     | 4000 A          | 2000 A        | 7500 A          | 3750 A        |
| 30 min ON / 30 min OFF                                  | 2800 / 1400 / 700 A   | 1700 A   | 850 A   | 3000 A  | 1500 A                                     | 6000 A          | 3000 A        | 10,000 A        | 5000 A        |
| 1 min ON / 10 min OFF                                   | 4000 / 2000 / 1000 A  | 2500 A   | 1250 A  | 4500 A  | 2250 A                                     | 9000 A          | 4500 A        | 15,000 A        | 7500 A        |
| 1 sec ON / 2 min OFF                                    | 8000 / 4000 / 2000 A  | 12,000 A   | 6000 A  | 20,000 A  | 10,000 A                                   | 40,000 A        | 20,000 A      | 75,000 A        | 37,500 A      |
| <b>DIMENSIONS / WEIGHT (approx)</b><br><b>Regulator</b> |   |  |   |   |  |                 |               |                 |               |
| Length  | 21" (533 mm)  | 27 3/8" (695 mm)   | 29 3/8" (746 mm)  | Regulator & Transformer are enclosed in 1 cabinet                 |  |                 |               |                 |               |
| Width   | 28 1/8" (714 mm)  | 25 3/4" (654 mm)   | 25 3/4" (654 mm)  |   |  |                 |               |                 |               |
| Height  | 48 1/2" (1232 mm)   | 17 7/8" (454 mm)   | 19 3/8" (492 mm)  |   |  |                 |               |                 |               |
| Weight  | 325 lbs. (147 kgs)  | 165 lbs (75 kgs)   | 200 lbs (91 kgs)  |   |  |                 |               |                 |               |
| <b>Transformer</b>                                      |   |  |   |   |  |                 |               |                 |               |
| Length  | 20" (508 mm)  | 28 1/4" (718 mm)   | 30 1/4" (768 mm)  | Regulator & Transformer are enclosed in 1 cabinet                 |  |                 |               |                 |               |
| Width   | 28 1/8" (714 mm)  | 26 5/8" (676 mm)   | 26 5/8" (676 mm)  |   |  |                 |               |                 |               |
| Height  | 48 1/2" (1232 mm)   | 27" (686 mm)   | 27" (686 mm)  |   |  |                 |               |                 |               |
| Weight  | 375 lbs. (170 kgs)  | 300 lbs. (196 kgs)   | 350 lbs. (159 kgs)  |   |  |                 |               |                 |               |
| <b>Total Unit (Regulator and Transformer)</b>           | Regulator & Transformer are 2 stand-alone cabinets  |  |   |   |  |                 |               |                 |               |
| Length  |   | 28 1/4" (718 mm)   | 30 1/4" (768 mm)  | 45" (1143 mm)   | 45" (1143 mm)                              |                 |               |                 |               |
| Width   |   | 26 5/8" (676 mm)   | 26 5/8" (676 mm)  | 27" (686 mm)  | 27" (686 mm)                               |                 |               |                 |               |
| Height  |   | 44 1/4" (1124 mm)  | 45 1/4" (1149 mm)   | 46" (1168 mm)   | 46" (1168 mm)                              |                 |               |                 |               |
| Weight  | 465 lbs. (211 kgs)  | 550 lbs. (249 kgs)   | 1125 lbs. (512 kgs)   | 1300 lbs. (590 kgs)   |  |                 |               |                 |               |
| <b>SHIPPING SIZE</b>                                    |   |  |   |   |  |                 |               |                 |               |
| Length  | 51" (1295 mm)   | 41" (1041 mm)  | 41" (1041 mm)   | 59" (1499 mm)   | 59" (1499 mm)                              |                 |               |                 |               |
| Width   | 36" (914 mm)  | 33" (838 mm)   | 33" (838 mm)  | 36" (914 mm)  | 36" (914 mm)                               |                 |               |                 |               |
| Height  | 57" (1448 mm)   | 68" (1727 mm)  | 68" (1727 mm)   | 70" (1778 mm)   | 70" (1778 mm)                              |                 |               |                 |               |
| Weight  | 1030 lbs. (467 kgs)   | 780 lbs (354 kgs)  | 840 lbs (381 kgs)   | 1400 lbs (635 kgs)  | 1620 lbs (735 kgs)                         |                 |               |                 |               |
| <b>CABLES INCLUDED</b>                                  |   |  |   |   |  |                 |               |                 |               |
| Output Leads 4/0 (107 m m <sup>2</sup> )                | 5' (1.5 m) (8)  | 5' (1.5 m) (8)   | 5' (1.5 m) (8)  | n/a   | n/a  |                 |               |                 |               |
| Continuity Sense/ Auxiliary Contact Leads               | 5' (1.5 m) (2)  | 5' (1.5 m) (2)   | 5' (1.5 m) (2)  | 5' (1.5 m) (2)  | 5' (1.5 m) (2)                             |                 |               |                 |               |

**Output Stabs for connection to the circuit breaker under test  
(for models HC12C, HC20C, HC40C, HC75C only)**



**HCSS1**



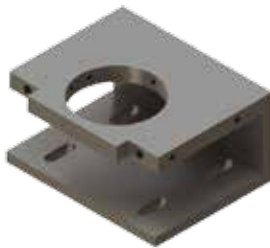
**HCSS2**



**HCSS3**



**HCSS4**



**HCSS5**



**HCSS6**



**HCSS7**



**HCSS8**

|                 | <b>Model #</b> | <b>Connection to Circuit Breaker</b>               |
|-----------------|----------------|--|
| <b>INCLUDED</b> | HCSS1          | .5" (12.7 mm) thick blade                          |
|                 | HCSS2          | .75" (19.05 mm) thick blade                        |
| <b>OPTIONAL</b> | HCSS3          | 3.15" (80 mm) clamp diameter                       |
|                 | HCSS4          | 3.5" (88.9 mm) diameter                            |
|                 | HCSS5          | 3.15" (80 mm) clamp diameter                       |
|                 | HCSS6          | 2.25" (57.15 mm) diameter                          |
|                 | HCSS7          | .5" (12.7 mm) thick blade<br>10.5" (266.7 mm) long |
|                 | HCSS8          | 2" (50.8 mm) diameter                              |

**Options**

- Multiple-tap input Auto Transformer for 208, 240, 480, 575 operation – 480 V or 575 V units
- Stab Plate Adapter for Series Output Connection
- External Printer
- Heavy-duty, coated-canvas, Protective Dust Cover (included with models HC12C and HC20C)
- DC circuit breaker testing systems available
- ISO17025 calibration



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