

# 440 SERIES



VERSATILE 4-IN-1  
FUNCTIONALITY

INTUITIVE USER INTERFACE

40A GROUND BOND  
CAPABILITY





20 PROGRAMMABLE  
MEMORIES

EASILY AUTOMATE FOR  
DATA COLLECTION

REMOTE SAFETY INTERLOCK

EASILY SAFEGUARD YOUR  
WORKSTATION WITH PPE  
ACCESSORIES

The **440 Series** provides advanced 4-in-1 test capability in a convenient one-box solution. This new series performs AC Hipot (448 - 500 VA), DC Hipot, Insulation Resistance and 40A AC Ground Bond tests while taking up minimal production line space. The **440 Series** is simple and easy-to-use; reducing setup time and increasing production line throughput for your application. With multiple memories and an optional USB port for remote BUS communication so you can quickly perform tests on a variety of DUTs from the front panel or with a PC.

|     | <br>AC Hipot | <br>DC Hipot | <br>Insulation Resistance | <br>40A<br>Ground Bond |
|-----|---|---|--|---|
| 446 | •   | •   | •  | •   |
| 448 | <b>500VA</b>  | •   | •  | •   |

## RELEVANT APPLICATIONS

|                        |                        |
|------------------------|------------------------|
| APPLIANCE              | CONTRACT MANUFACTURING |
| INDUSTRIAL EQUIPMENT   | LABORATORY EQUIPMENT   |
| INFORMATION TECHNOLOGY |                        |

## WHAT'S IN THE BOX

|             |                                      |
|-------------|--------------------------------------|
| 33189       | Power Cord (10A) 6ft - *446 Model    |
| 38071       | Power Cord (15A) 6ft - *448 Model    |
| 99-10783-01 | Fuse 10A Slow Blow 20mm - *446 Model |
| 99-10168-01 | Fuse 15A Fast Blow 30mm - *448 Model |
| 38075       | Interlock Connector Male             |
| 40428       | Ground Bond Test Lead                |
| 40429       | Ground Bond Return Lead              |
| 04040A-08   | High Voltage Test Lead 6ft           |
| 99-10797-01 | USB A-B 1.8M Cable                   |

All testers come with the accessories you need to run a test right out of the box.

## OPTIONS

| Description  | 446 | 448 |
|--------------|-----|-----|
| Rear Outputs | •   | •   |
| USB Port     | •   | •   |



SCI 448 Model

## SERIES FEATURES



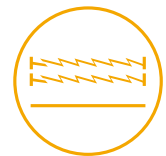
Test Setup Memories



Frequency Selection



Ramp



Dwell



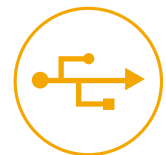
Low Current Sense



Safety Agency Listed



PLC Remote



USB (optional)



On the Go Portability



Intuitive User Interface

# 440 SERIES SPECIFICATIONS

## INPUT (446 and 448)

|                  |  |                        |
|------------------|--|------------------------|
| <b>Voltage</b>   | 100 - 120Vac / 200 - 240Vac $\pm$ 10% Auto Range |                        |
| <b>Frequency</b> | 50/60Hz $\pm$ 5%                                 |                        |
| <b>Fuse</b>      | 446  | 10A / 250Vac Slow-Blow |
|                  | 448  | 15A / 250Vac Fast-Blow |

## DIELECTRIC WITHSTAND TEST MODE

|  |   |   |
|--|---|---|
| <b>Output Rating</b>                   | 446   | 5 KV @ 20 mA AC<br>6 KV @ 5 mA DC   |
|  | 448   | 5 KV @ 99.99 mA AC<br>6 KV @ 10 mA DC   |
| <b>Voltage Setting/Display</b>         | Range   | 0 - 5.00 KV AC<br>0 - 6.00 KV DC  |
|  | Resolution  | 0.01  |
|  | Accuracy  | $\pm$ (2% of setting + 5V)  |
| <b>Current Display</b>                 | 446   | Range: 0 - 20.00 mA AC, 0 - 5.00 mA DC<br>Resolution: 0.01 mA<br>Accuracy: $\pm$ (2% of reading + 0.02 mA)                  |
|  | 448   | Range: 0 - 99.99 mA AC, 0 - 10.00 mA DC<br>Resolution: 0.01 mA<br>Accuracy: $\pm$ (2% of reading + 0.06 mA)                 |
| <b>Hi-Limit<br/>Lo-Limit</b>           | 446 AC  | Range: Lo-Limit 0 - 20.00 mA, Hi-Limit 0.10 - 20.00 mA<br>Resolution: 0.01 mA<br>Accuracy: $\pm$ (2% of setting + 2 counts) |
|  | 446 DC  | Range: Lo-Limit 0 - 5.00 mA, Hi-Limit 0.02 - 5.00 mA<br>Resolution: 0.01 mA<br>Accuracy: $\pm$ (2% of setting + 2 counts)   |
|  | 448 AC  | Range: Lo-limit 0 - 99.99 mA, Hi-Limit 0.10 - 99.99 mA<br>Resolution: 0.01 mA<br>Accuracy: $\pm$ (2% of reading + 6 counts) |
|  | 448 DC  | Range: Lo-Limit 0 - 10.00 mA, Hi-Limit 0.02 - 10.00mA<br>Resolution: 0.01 mA<br>Accuracy: $\pm$ (2% of reading + 6 counts)  |
| <b>Failure Detector</b>                | Audible and Visual  |   |
| <b>DC Output Ripple</b>                | 446   | <5 % ( 6KV / 5mA at Resistive Load )  |
|  | 448   | <5 % ( 6KV / 10mA at Resistive Load )   |
| <b>Discharge Time</b>                  | 446   | < 50 ms for no load, < 200 ms for capacitor load  |
|  | 448   | < 50 ms for no load, < 100 ms for capacitor load  |
| <b>Max. Capacitive Load in DC Mode</b> | 1 $\mu$ F < 1KV   | 0.08 $\mu$ F < 4KV  |
|  | 0.75 $\mu$ F < 2KV  | 0.04 $\mu$ F < 5KV  |
|  | 0.5 $\mu$ F < 3KV   | 0.015 $\mu$ F < 6KV   |
|  |   |   |
| <b>AC Wave Form</b>                    | Sine Wave, Crest Factor = 1.3 - 1.5 and output voltage > 300V |   |
| <b>AC Output Frequency</b>             | 50Hz/60Hz $\pm$ 0.1%, User Selection                          |   |

## DIELECTRIC WITHSTAND TEST MODE (Cont.)

|                          |  |                                    |
|--------------------------|--|------------------------------------|
| <b>Output Regulation</b> | $\pm$ (1% of output + 5V), From no load to full load |                                    |
| <b>Dwell Timer</b>       | Range:   | 0, 0.2 - 60.0 (0=continuous)       |
|                          | Resolution:  | 0.1                                |
|                          | Accuracy:  | $\pm$ (0.1% of setting + 0.05 sec) |
| <b>Ramp Timer</b>        | Range:   | 0.2-180.0                          |
|                          | Resolution:  | 0.1                                |
|                          | Accuracy:  | $\pm$ (0.1% of setting + 0.05 sec) |

## INSULATION RESISTANCE TEST MODE

|  |             |  |
|--|-------------|--|
| <b>Output Voltage, VDC</b>                       | Range:      | 100 - 1000                                 |
|  | Resolution: | 1  |
|  | Accuracy:   | $\pm$ (2% of setting + 5V)                 |
| <b>Hi-Limit resistance, M<math>\Omega</math></b> | Range:      | 0, 1 - 1000 (0 = OFF)                      |
|  | Resolution: | 1  |
|  | Accuracy:   | 100-499V $\pm$ (7% of setting + 2 counts)  |
| <b>Lo-Limit resistance, M<math>\Omega</math></b> | Range:      | 1 - 1000                                   |
|  | Resolution: | 1  |
|  | Accuracy:   | 500-1000V $\pm$ (3% of setting + 2 counts) |
| <b>Ramp Time , second</b>                        | Range:      | 0.1 or 2.0                                 |
|  | Resolution: | 0.1  |
|  | Accuracy:   | $\pm$ (0.1% of setting + 0.05 sec)         |
| <b>Delay Time, second</b>                        | Range:      | 0, 0.5 - 999.9 (0=continuous)              |
|  | Resolution: | 0.1  |
|  | Accuracy:   | $\pm$ (0.1% of setting + 0.05 sec)         |

Specifications subject to change without notice.

# 440 SERIES SPECIFICATIONS

## GROUND BOND

|   |   |   |
|---|---|---|
| <b>Output AC Current, A</b>                             | Range:<br>Resolution:<br>Accuracy:  | 1.0 – 40.0<br>0.1<br>$\pm (2 \% \text{ of setting} + 2 \text{ counts})$         |
| <b>Output AC Voltage, V</b>                             | 8V(Fixed)   |   |
| <b>Output Frequency, Hz</b>                             | 50Hz/60Hz $\pm 0.1\%$ , User Selectable   |   |
| <b>Maximum Loading</b>                                  | 1.0–10.0A/0–600m $\Omega$ , 10.1–30.0A/0–200m $\Omega$ ,<br>30.1–40.0A/0–150m $\Omega$  |   |
| <b>Offset, m<math>\Omega</math></b>                     | Range:<br>Resolution:<br>Accuracy:  | 0-100<br>1<br>$\pm (2 \% \text{ of setting} + 2 \text{ counts})$                |
| <b>HI and LO-Limit Resistance, m<math>\Omega</math></b> | Range:<br>Resolution:<br>Accuracy:  | 0 – 150 (30.1-40.0A)<br>1<br>$\pm (2 \% \text{ of setting} + 2 \text{ counts})$ |
|   | Range:<br>Resolution:<br>Accuracy:  | 0 – 200 (10.1-30.0A)<br>1<br>$\pm (2 \% \text{ of setting} + 2 \text{ counts})$ |
|   | Range:<br>Resolution:<br>Accuracy:  | 0 – 600 (1.0-10.0A)<br>1<br>$\pm (2 \% \text{ of setting} + 2 \text{ counts})$  |
|   | Range:<br>Resolution:<br>Accuracy:  | 0.4<br>0.1<br>$\pm 0.05 \text{ sec}$  |
| <b>Fix Ramp Timer, second</b>                           | 0-250m $\Omega$ à 0.1sec ramp up<br>251-300m $\Omega$ à 0.2sec ramp up<br>301-450m $\Omega$ à 0.3sec ramp up<br>>450m $\Omega$ = 0.4sec |   |
| <b>Dwell Timer, second</b>                              | Range:<br>Resolution:<br>Accuracy:  | 0, 0.1 - 240.0 (0 = continuous)<br>0.1<br>$\pm 0.05 \text{ sec}$                |

## GENERAL SPECIFICATIONS

|                    |   |  |
|--------------------|---|--|
| <b>Memories</b>    | Allows storage of up to 20 different test programs and a single step mode |  |
| <b>Remote I/O</b>  | Input:  | Test, Reset, Interlock & Recall Memory 1 – 6 |
|                    | Output:   | Pass, Fail, Test-in-Process                  |
| <b>Interface</b>   | USB (Optional)  |  |
| <b>Security</b>    | Lockout capability to avoid unauthorized access to test set-up programs   |  |
| <b>Calibration</b> | Software and adjustments made through the front panel                     |  |
| <b>Dimension</b>   | 446   | 280mm(W) x 89mm(H) x 400 mm(D)               |
|                    | 448   | 430mm(W) x 132mm(H) x 400 mm(D)              |
| <b>Weight</b>      | 446   | 18lbs (8kg)                                  |
|                    | 448   | 53lbs (24kg)                                 |

Specifications subject to change without notice.