INSTRUMENTS FOR

ELECTRICAL SAFETY COMPLIANCE TESTING

HIPOT TESTERS
GROUND BOND TESTERS
INSULATION RESISTANCE TESTERS
LINE LEAKAGE TESTERS
MEDICAL TEST SYSTEMS
HV/HC SCANNING MATRICES
SOFTWARE SOLUTIONS
FUNCTIONAL RUN TESTERS
CUSTOM INSTRUMENTS

ASSOCIATED RESEARCH, INC.
Production Line Dielectric Withstand Testers

Hypot® III is a bench top Dielectric Withstand tester with an enhanced graphic LCD. Four models are available: the 3705 AC Hipot tester, the 3765 AC/DC Hipot tester, the 3770 AC/DC Hipot tester with built-in Insulation Resistance, and the 3780 500 VA AC Hipot tester. All testers feature an RS-232 interface for entry-level automation.

Model 3705 - 5 kVAC Hipot Tester
Model 3765 - 5 kVAC, 6 kVDC Hipot Tester
Model 3770 - 5 kVAC, 6 kVDC Hipot & Insulation Resistance Tester
Model 3780 - 500 VA (5 kVA @ 100 mA) AC Hipot Tester

Features and Benefits

- RS-232 interface standard for entry-level automation
- Patented SmartGFI® safety circuit protects the operator from shock hazards
- Patented VERI-CHEK® feature prompts users through steps to validate the instrument’s operation
- Patented CAL-ALERT® feature alerts the operator that the tester is due for re-calibration
- Built-in adjustable Continuity test for checking basic continuity
- Graphic LCD provides intuitive menu system to simplify the entire testing process from set-up to results
- Remote Safety Interlock feature prevents the high-voltage from being activated without the interlock enabled
- 10 Memories with 3 Steps per memory for storing and recalling test parameters
- PLC Remote Control for simple remote operation
- Interconnects with a HYAMP III Associated Research Ground Bond tester to form a complete test system
- Digitally controlled arc detection circuit allows the operator to program sensitivity levels for detecting arcs
- Minimum and maximum trip settings for safer and more accurate testing
- Comes complete with an adapter box for products terminated in a line cord
- Meets 200 mA Short circuit requirements (Model 3780)
3705, 3765, 3770 Specifications

Input Specifications
Voltage  115/230 VAC ± 10%, user selectable
Frequency  50/60 Hz ± 5%
Fuse  3.15 A, fast acting 250 VAC

Dielectric Withstand Test Mode
Output Rating  5000 V @ 20 mA AC
6000 V @ 7.5 mA DC
Voltage Setting  Range: 0 - 5.00 kVAC
0 - 6.00 kVDC
Resolution: 0.01 kV
Accuracy: ± (2% of setting + 5 V)
Maximum Limit
AC Range: 0.00 - 20.00 mA
Resolution: 0.01 mA
DC Range: 0 - 7500 µA
Resolution: 1 µA
Accuracy: AC and DC ± (2% of setting + 2 counts)
Minimum Limit
AC Range: 0.000 - 9.999 mA
Resolution: 0.001 mA
DC Range: 0.0 - 999.9 µA
Resolution: 0.1 µA
Accuracy: AC and DC ± (2% of setting + 2 counts)

Arc Detection  Range: 0 - 9, 0 disabled
Ground Fault  GFI Trip Current: 450 µA max (AC or DC)
Interrupt  HV Shut Down Speed: < 1ms

Current Display  Auto Range
AC Range 1: 0.000 - 3.500 mA
Resolution: 0.001 mA
Range 2: 3.00 - 20.00 mA
Resolution: 0.01 mA
DC Range 1: 0.0 µA - 350.0 µA
Resolution: 1:0.1 µA
Range 2: 0.300 mA - 3.500 mA
Resolution: 0.001 mA
Range 3: 3.00 mA - 7.50 mA
Resolution: 0.01 mA
Accuracy: All Ranges ± (2% of reading + 2 counts)

DC Output Ripple  ≤ 5% Ripple rms at 6 kVDC @ 7.5 mA, Resistive Load
Discharge Time  < 200 ms
The maximum capacitive load vs output voltage:
0.20 µF < 1 kV
0.050 µF < 4 kV
0.10 µF < 2 kV
0.040 µF < 5 kV
0.06 µF < 3 kV
0.015 µF < 6 kV
AC Voltage Waveform  Sine Wave, Crest Factor = 1.3 - 1.5
Output Frequency  Range: 50 or 60 Hz, User Selectable
Output Voltage Regulation  ± (1% of output + 5 V) from no load to full load and over input voltage range.
Dwell Timer  Range: AC 0, 0.3 - 999.9 sec (0 = Continuous)
DC 0, 0.4 - 999.9 sec (0 = Continuous)
Accuracy: ± (0.1% of reading + 0.05 sec)
Ramp Timer  Range: Ramp-Up: 0.1 - 999.9 sec
Ramp-Down: AC 0.0 - 999.9 sec
DC 1.0 - 999.9 sec (0 = OFF)
Accuracy: ± (0.1% of reading + 0.05 sec)

Dielectric Withstand Test Mode (continued)
Ground Continuity Current  DC 0.1 A ± 0.01 A, fixed
Ground Continuity
Maximum Limit  Range: 0.0 - 1.50 Ω
Resolution: 0.01 Ω
Accuracy: ± (3% of setting + 0.02 Ω)
Minimum Limit  Range: 0.0 - 0.50 Ω
Resolution: 0.01 Ω
Accuracy: ± (3% of setting + 0.02 Ω)

Insulation Resistance Test Mode
Voltage Setting  Range: 30 - 1000 VDC
Resolution: 1 V
Accuracy: ± (2% of setting + 5 V)
Resistance Display  Range: 1 - 9999 MΩ (4 Digit, Auto Ranging)
Resolution: 500 VDC - 1000 VDC
Accuracy: ± (5% of reading + 2 counts) at test voltage
500 - 1000 V and 1 - 9999 MΩ
± (8% of reading + 2 counts) at test voltage
30 - 500 V and 1 - 1000 MΩ
Maximum Limit  Range: 0, 1 - 9999 MΩ (0=OFF)
Resolution: 1 MΩ
Accuracy: Same as Resistance Display
Minimum Limit  Range: 1 - 9999 MΩ
Resolution: 1 MΩ
Accuracy: Same as Resistance Display
Ramp Timer  Range: Ramp-Up: 0.1 - 999.9 sec
Ramp-Down: 1.0 - 999.9 sec (0=OFF)
Resolution: 0.1 sec
Accuracy: ± (0.1% of reading + 0.05 sec)
Delay Timer  Range: 0, 0.5 - 999.9 sec (0 = Continuous)
Resolution: 0.1 sec
Accuracy: ± (0.1% of reading + 0.05 sec)
GFI Trip Current  450 µA max
HV Shut Down Speed  < 1 ms

General Specifications
Mechanical  Bench or rack mount with tilt up feet
Dimensions  (W x H x D) 8.46 x 3.5 x 14.57 in.
(215 x 89 x 370 mm)
Weight  20.96 lbs (9.53 kg)
Interface  RS-232 interface standard for entry-level automation
Memory  10 Memories, 3 steps per memory

Specifications subject to change without notice.
### 3780 Specifications

#### Input Specifications
- **Voltage**: 115/230 VAC ± 15%, automatically selected
- **Frequency**: 50/60 Hz ± 5%
- **Fuse**: 15 Amp, Slow Blow 250 VAC

#### Dielectric Withstand Test Mode
- **Output Rating**: 5000 V @ 100 mAAC
- **Voltage Setting**
  - **Range**: 0 – 5.00 kVAC
  - **Resolution**: 0.01 kV
  - **Accuracy**: ± (2% of setting + 0.01 kV) (Adjustable during operation. Disable when key lockout is active.)
- **Maximum Limit AC**
  - **Range**: 0.00 – 99.99 mA
  - **Resolution**: 0.01 mA
  - **Accuracy**: ± (2% of setting + 6 counts)
- **Minimum Limit AC**
  - **Range**: 0.000 – 9.999 mA
  - **Resolution**: 0.001 mA
  - **Accuracy**: ± (2% of setting + 6 counts)
- **Arc Detection**
  - **Range**: 0 - 9, 0 disabled
- **Ground Fault**
  - **GFI Trip Current**: 450 µA max
  - **HV Shut Down Speed**: < 1ms
- **Current Display**
  - **Auto Range AC**
    - **Range 1**: 0.000 mA – 3.500 mA
    - **Resolution**: 0.001 mA
    - **Accuracy**: ± (2% of setting + 2 counts)
    - **Range 2**: 3.00 – 99.99 mA
    - **Resolution**: 0.01 mA
    - **Accuracy**: ± (2% of setting + 6 counts)
- **AC Voltage Wave Form**
  - **Sine Wave, Crest Factor = 1.3 – 1.5**

#### General Specifications
- **Mechanical**: Bench or rack mount with tilt up feet
- **Dimensions**: (W x H x D) 16.93 x 5.24 x 13.78 in. (430 x 133 x 350 mm)
- **Weight**: 49 lbs (23 kg)
- **Interface**: RS-232 interface standard for entry-level automation
- **Memory**: 10 Memories, 3 steps per memory

Specifications subject to change without notice.


For more information on testing to a specific standard, refer back to the Common Safety Standard Reference Chart.
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