# AWA IV: Advanced Winding Analyzer


## *Integrated Testing Capabilities*

The AWA IV integrates a wide range of electrical tests with the hallmark quality of a Baker. This instrument supports all major electric tests in a single field portable unit including surge, polarization index, DC HiPot, megohm and winding resistance. This instrument complies to IEEE recommendations.

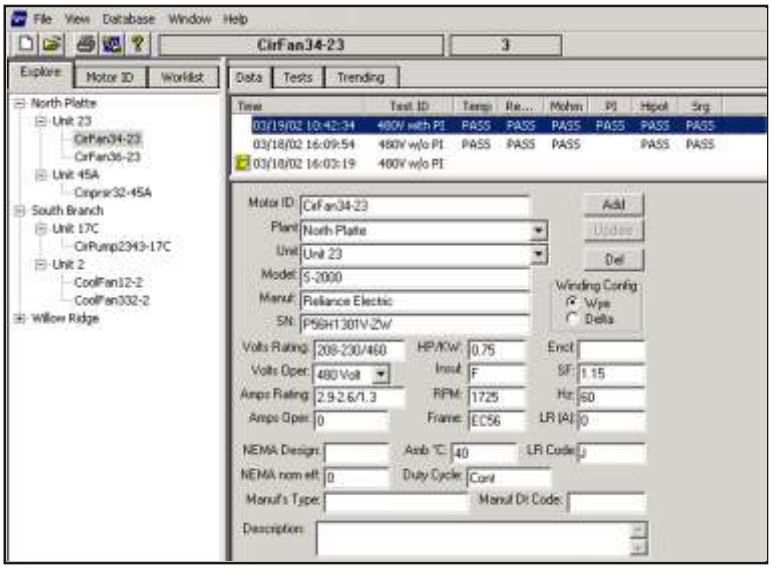
## *Continuous Innovation*

With the AWA IV, Baker Instrument Company continues to pioneer new breakthroughs that demonstrate our ongoing commitment to quality, reliability, and competitive advantage. The AWA IV is the result of over 40 years of designing and building winding test instruments. It is the only tester available today that provides automatic pre-programmed tests and manual control tests in the same instrument.

Baker®

## *The Power of Automation*

The AWA IV has been designed around PC104 technology that allows the instrument to work efficiently without fans to cool the processor. This computer performs all requested tests, stores the results, and continuously monitors voltage levels while testing. If the computer detects a weakness in the insulation, the test is interrupted, the operator is alerted, and all test parameters at the time of the interruption are reported. The AWA IV performs this operation in microseconds with a higher degree of precision and safety than can be achieved through manual testing.

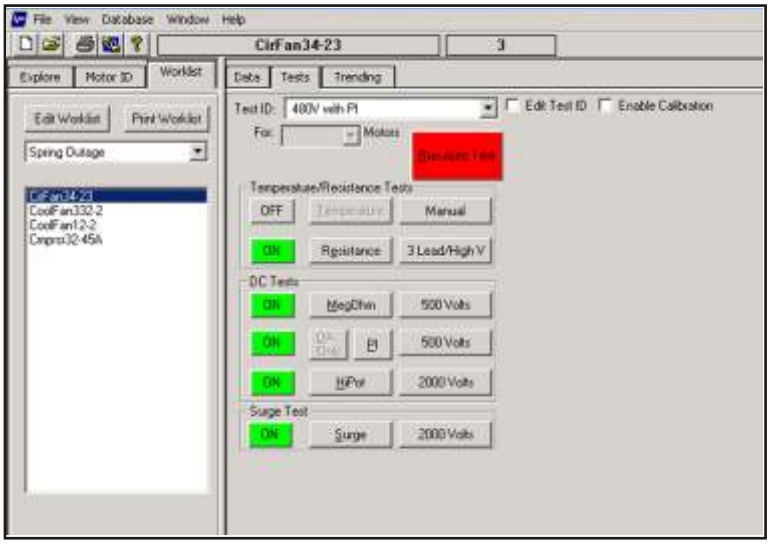



## *Automatic or Manual*

The AWA IV gives you the option of automatic or manual testing. In manual mode, the system allows operator control over tests, voltage levels and data collection.

## *Pre-Programmed Operation*

The AWA IV is the only high-voltage tester that can be pre-programmed in the office and implemented in the field. Pre-build work orders defining which motors to test, the order of execution, and parameters for each test including voltages, duration and pass-fail limits. Operators can then conduct tests in the field simply by connecting to the pre pro-grammed motor, ensuring a higher degree of reliability in testing procedures. This allows repeatable maintenance testing, which is vital to a successful PM program.

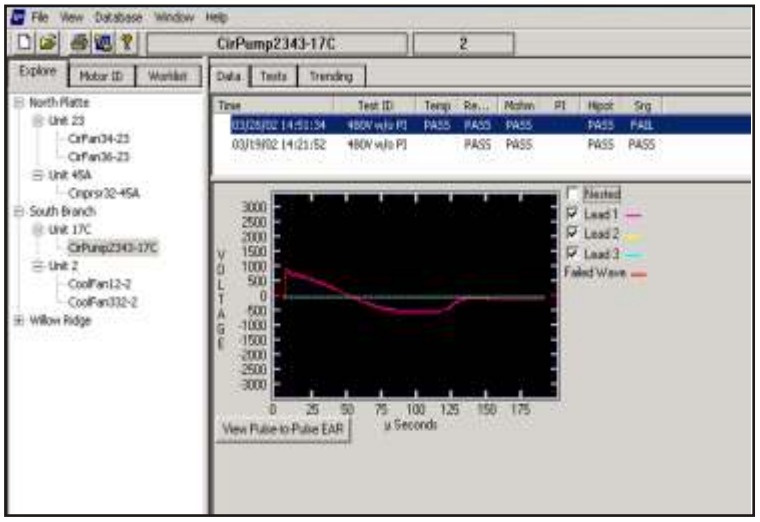
## *Advanced Data Collection*

When testing is complete, results can be saved as part of each motor's permanent test record. This kind of documentation is critical to a successful reliability program. With the AWA IV, test results are collected, stored, recalled and managed using standard MS Access® relational database format. Reports can be generated for trending, insurance records, or guarantee and warranty requirements for customers through the AWA software or MS Word® file formats. These database files make it easy to transfer information to maintenance management software or other database tools and Access® is ODBC compliant.

## *Turn-to-Turn Testing*

The Baker AWA IV incorporates the most advanced inter-turn capabilities ever offered in a field portable instrument. Computer control and waveform monitoring are dramatic enhancements of the manually controlled instruments previously available.

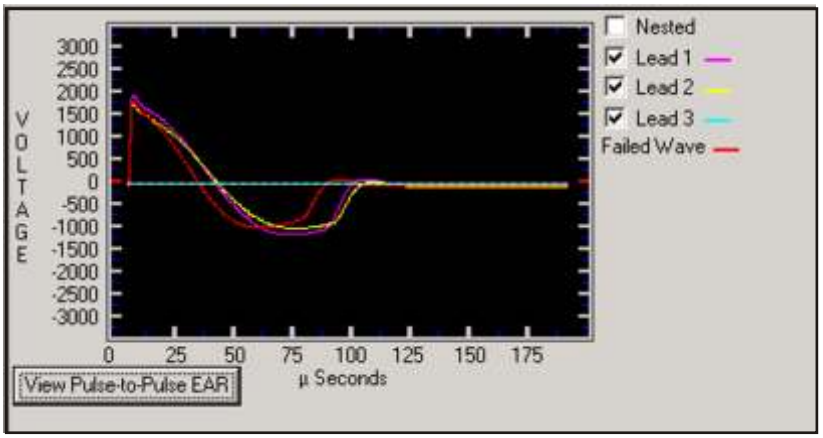
As with the DC HiPot test, the AWA IV begins surge generation at low voltage. Each pulse applied to the winding is digitized and the resultant waveform is compared to previous waveforms to detect any sign of turn-to-turn shorting. Comparison is done by the patented Pulse to Pulse Error Area Ratio (PP-EAR) Technique. This method is sensitive to less than a 1% variance between coils. In addition, shorts among windings in parallel can be located, something that was never possible before by visually comparing waveforms. With the AWA IV, fewer




pulses are applied to the winding, reducing the power required to perform the surge test. Since each and every pulse is analyzed, it becomes the new reference waveform as test voltage is increased up to the specific withstand level. If no turn-to-turn shorting is detected, the final pulse waveform is stored as the reference waveform for all subsequent future tests. You will know exactly what the waveform should look like next year or five years from now. As with previous version of the AWA, this instrument is IEEE 522 compliant.

## *Features*

- Universal Power Supply: 85VAC-265VAC, no cooling fan needed.
- Case: Outer dimensions 16” x 8” x 21” - 42 lbs.
- Surge test to 12kV, 2.88 joule output (IEEE522 compliant)
- Meg-ohm, DA, PI, Stepped DC, and DC HiPot tests to 12kV, with 4 ranges of measurement 100/10/1/.1 microamp, 1000/100/10/1 microamp overcurrent trip levels. Maximum reading of Meg-ohm = 50,000 Meg-ohms. DC power supply is regulated to .01%. (IEEE compliant).
- Kelvin resistance bridge-relay matrix, with 9 amps maximum applied DC current source. Kelvin relay-matrix is comprised of a separate, removable set of three kelvin clips. Unit high voltage leads retains the ability to perform test sequence; however, for low resistances, the Kelvin test leads are used. (IEEE compliant).
- Windows 2000® operating system with Pentium class computer, specifically 233-300Mhz GEODE processor (does not require cooling)
- Word 2000® or better pre-loaded for report generation.
- Removable keyboard and mouse (not required for testing).
- ELO touch screen for ease of operation during field testing.
- USB for peripheral interface to printers, bar code scanners, etc.
- RJ45 ethernet access plug for Cat5 ethernet connection.
- Operates with optional 30kV Power Pack.
- Shock mounted internal chassis, with Hard Drive shock mounting.
- External floppy disk drive and CDROM drive, both with USB interface.
- PC104 system board with 100% optically isolated signal/readout and controls for high voltage circuitry.
- High resolution color LCD with high color display capacity.
- Improved Testing Capabilities:
  - Continuous ramped HiPot (IEEE 95)
  - Programmable Stepped HiPot (IEEE 95)
  - Enhanced reference Surge waveform
  - Improved PI/DA test (IEEE 43)
  - Improved DC HiPot (IEEE 95)
  - Improved Resistance test (IEEE 118)
  - More sensitive Surge test (IEEE 522)




## *Specifications*

### Surge Test

| | |
|---|---|
| Output Voltage | 0-12000 Volts |
| Max Output Current | 400 amps |
| Pulse Energy | 2.88 joules |
| Storage Capacitance | .04 µF |
| Sweep Range | 2.5 - 2000µs/Div |
| Volts Division | 500/1000/2000/3000 |
| Repetition Rate | 5Hz |
| Voltage Measurement & Accuracy | +/- 12% |

### DC High Potential (HiPot) Test

| | |
|---|---|
| Output Voltage | 0-12000 Volts |
| Max Output Current | 1000 µAmps |
| Current Resolution | .1, 1, 10, 100 µA/Div |
| Over-Current Trip Settings | 1, 10, 100, 1000 µA |
| Full Scale Voltage & Current Measurement & Accuracy | +/- 5% |
| Meg-ohm Accuracy | +/- 10% |
| Max Meg-ohm Reading | 50000MΩ |

### Resistance Measurements

.001Ω - 50 ohms

### Physical Characteristics

| | |
|---|---|
| Weight | 42 lbs |
| Dimensions (WxHxD) | 16” x 8” x 21” |
| Power Requirements | 85-264 VAC 50/60 HZ @ 500 Watts or more |

Proudly Distributed by
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*Data subject to change without notice. Printed 06/05*