



# Baker WinAST8800

## Stator test system

*The WinAST8800 (Stator Test System) is a field proven and rugged system for testing stators. It combines the most common process electrical tests into one automated instrument. Test systems include winding resistance, high potential, surge and other tests for a wide variety of windings from fractional horsepower appliance motors up to 1,000 kW traction motors.*

*This instrument is assembled from standard components to customer's specifications.*

Manufacturers of stators, coils, alternators, rotors and other types of motor windings need the most advanced, dependable and proven test systems.

HiPot, Surge and Temperature Compensated Resistance test capabilities are standard. A rotation direction test is available for testing stators and field coils. Each tester is assembled to customer specifications. It has additional capabilities and features beyond what is described here.

### Operation

The WinAST8800 not only tests your product, it tests your process. Trending with the manufacturing process can be monitored, anticipating problems.

The WinAST8800 is set apart from other winding test systems by its highly sensitive computer controlled testing, analysis and report generation in a field-proven design. Testing is fully automatic.

### Automation

To test a winding, a Master file is created. In a manually loaded system, the operator need only start each test from the test fixture. When each test is complete, a pass/fail indication is clearly displayed on the screen and the operator's control console. The

WinAST8800 can be integrated into fully automated lines with automatic fixturing and a PLC or host computer communications interface. Quality control with an WinAST8800 system is quick.

### No Master Winding

A Master winding need not be connected to the tester during routine production testing. The operator need not set the test voltage or pass/fail limits during model changeover. You save time.

Test parameters are programmed into a Master data file. Programming each winding model takes just a few minutes. The WinAST8800 program is a simple, pull-down menu driven interface. The user is prompted for all necessary information. Once the Master has been defined, it is



permanently stored. Testing is then automatically sequenced according to the Master file. Tests are accurate and repeatable.

## AC and DC testing

For AC HiPot (High Potential) testing, the WinAST8800 uses arc detection to sense breakdowns to ground or between windings which would otherwise go undetected using average current measurement techniques. It also has capacitive compensation capability. This measures the resistive portion of the leakage current, rather than the total leakage current.

DC HiPot testing checks the integrity of the insulation system with high DC voltage. Leakage current is then measured in milliamps.

## Surge testing

The high voltage surge or impulse test checks for insulation problems between turns, coils, and phases of the winding. Surge tests can also detect other faults which change the inductance of a winding such as improperly annealed lamination steel and reversed coils.

## Resistance testing

The Resistance test checks for wrong turn count, poor connections, mislabeled leads and incorrect wire size. With the use of Kelvin connections, low resistance winding tests are accurate and repeatable. Resistance measurements are corrected for temperature to the equivalent resistance value at 25°C or to a customer specified temperature.

## Rotation Direction

The Rotation Direction test is an option for stator testing. Both induction and Hall-effect type sensors are available. This test is also capable of detecting misconnections in some cases.

## Reports

Test data can be stored to the hard disk drive. Both raw test data and pass/fail counts can be stored. Raw test data is stored in xml format making it easy to use in common programs such as Microsoft Excel or Access. Data can be easily transferred to another computers using the Ethernet, USB or other drives.

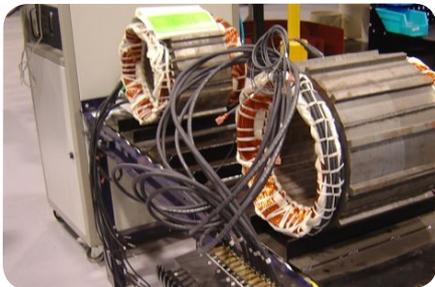
## Field Calibration

Many years of reliable operation have been designed into the WinAST8800, so calibration is not frequently required. When calibration is required, the WinTATS8800 can be field calibrated by adjusting software coefficients through a simple menu using ISO procedures.

## Repair

The electronics in the WinAST8800 are rugged, reliable solid-state circuitry. Modular design uses plug-in PC boards for quick replacement should repair be necessary.





## Fixturing

All WinAST8800 testers have a standard control console, safety interlock switch, and alligator clip terminations (unless optional fixturing is requested). A wide variety of single and dual station fixtures are available. In addition, test fixtures can be custom built to specifications for any size of winding.

## Customized testing

Please contact Baker Instrument Company, Automated Systems Division, for more detailed information or specifications. Customized proposals tailored to fit your specific application needs can be submitted and discussed.

## High voltage WinAST8800 option

A high voltage version of the WinAST8800 is available for testing low inductance form coils and motor stators of greater than 500 kW or greater than 575 V AC. See specifications for details about this system.

### Technical specifications

#### Computer

Windows-based with Ethernet, USB, video, serial ports and optional CDRW

#### Peripherals

Display: High resolution LCD screen  
Printer: Optional desktop and label  
Keyboard and mouse

#### DC HiPot

Voltage: Programmable 100 to 5,000 V DC in 50 V DC increments, 3% accuracy  
Current: 100  $\mu$ A maximum, 1  $\mu$ A resolution, programmable pass/fail in 1  $\mu$ A increments  
Duration: Programmable in 1 second increments

#### AC HiPot

Voltage: Programmable 100 to 3,500 V AC in 50 V AC increments, 50/60 Hz, 60 VA or 300 VA,  $\pm$  5% accuracy  
Current: 100 mA/40 mA/13 mA/5 mA resolution, arc detection for improved fault detection,  $\pm$  5% accuracy  
Duration: Programmable in 1 second increments  
Leakage current method installed: "Total or Absolute Leakage Current"

#### Resistance

Autoranging  
3.5 digit resolution  
0.4% of full scale accuracy in each range  
0.2% of full scale repeatability  
Kelvin leads and contacts for bar-to-bar testing  
Ambient temperature normally compensated 25°C or user defined  
Infrared temperature sensing (Optional)

#### Resistance range

*10 m $\Omega$ – 20 m $\Omega$	2 A
20 m $\Omega$ – 200 m $\Omega$	2 A
200 m $\Omega$ – 2 $\Omega$	200 mA
2 $\Omega$ – 20 $\Omega$	20 mA
20 $\Omega$ – 200 $\Omega$	2 mA
200 $\Omega$ – 2 k $\Omega$	2 mA
*2 k $\Omega$ – 20 k $\Omega$	2 mA

#### Current

\*The software allows for measurements outside of these ranges that may not meet stated accuracies.

#### High voltage impulse (Surge)

Voltage: Programmable 500 to 5,000 V peak in 50 V increments,  $\pm$ 3% accuracy  
Pulse energy: 0.5 J maximum  
Discharge Capacitor: 0.04  $\mu$ F  
Load: Greater than 100  $\mu$ H  
Digitizing rate: 5, 10 or 20 Msample/second  
Programmable pass/fail percentage limit based on Baker Instrument Company, an SKF Group Company's patented Error Area Ratio (EAR)

#### Rotation direction

Senses clockwise or counter-clockwise rotation direction in windings.  
"Hall Sensor Effect" method  
Single and multi phase motor options

#### Power requirements

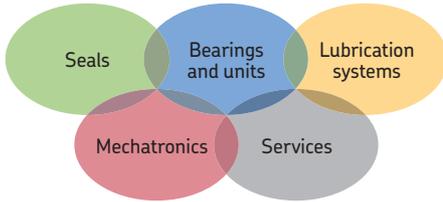
Input voltage: 115 VAC maximum (230 VAC available) at 46 to 67 Hz  
Power consumption: 600 VA maximum  
Overcurrent protection: Two pole magnetic circuit breaker

#### Temperature compensation

Ambient – standard  
Infrared – optional

#### Options

PLC interface package  
Bar code scanner  
Multi-lead configurations



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