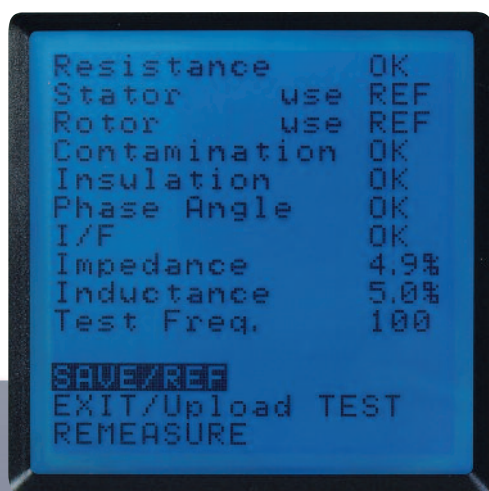




# ALL-TEST PRO<sup>®</sup> 5

Motor Circuit Analyzer

**PREDICTIVE MAINTENANCE**  
**QUALITY CONTROL**  
**TROUBLESHOOTING**  
**ROUTE-BASED TESTING**  
**TRENDING**



## The AT5 Motor Circuit Analyzer

**Complete electric  
motor health  
analysis in  
minutes!**



[www.alltestpro.com](http://www.alltestpro.com)

# Greatly Increase the Profitability of Your Plant with the **NEW ALL-TEST PRO® 5**

## ✓ **Versatile**

Analyzes complete stator and rotor health on all types and sizes of motors, transformers and generators – induction, synchronous, servo, AC, DC and more.

## ✓ **Sensitive**

Detects faults at their earliest stages, before motor failure, including deteriorating or contaminated insulation, as well as “deep” winding faults.

## ✓ **Fast**

Testing only takes a few minutes and an auto diagnosis within the instrument will provide an immediate motor health status report.

## ✓ **Convenient**

Tests can be taken from the motor control center, from distances of over 1,000 feet away – ideal for hard-to-reach motors.

## ✓ **Easy to use**

Menu driven with on-screen prompts.

## ✓ **Comprehensive**

Expert software provides fault diagnosis plus trending of all data.

## ✓ **Lightweight and Hand-Held**

Battery-powered, hand-held and weighing less than 2 lbs., the AT5 can be easily carried by one person to test motors of all sizes – no carts or additional equipment needed.



### **The ALL-TEST PRO® 5 includes:**

- 3x Test Leads with custom heavy-duty Kelvin Clips and push-pull connectors
- 1x Test Lead with 4mm safety plug and MC “Dolphin” clip
- Charging adapter, Universal input type 85-260VAC, output 9VDC @ 1.7A
- MCA Basic™ Software (Windows 7, 32/64 bit)
- Durable and rugged hard case with pre-cut foam liner
- User manual on CD





# ALL-TEST PRO® 5 Features

## Reference Test (TVS™)

An initial baseline test is performed using the Test Value Static (TVS™). Results are stored in the ALL-TEST PRO® 5 and subsequent test results can be immediately recalled on the instrument to instantly show you any developing problems or changes with the rotor and stator. Access to the software is not required.

## Automatic Test Mode

An automatic test mode is used for most tests. On screen prompts walk you through the test – no user manual needed. In just a few minutes, anyone can learn to use it!

## On The Spot Diagnosis For Troubleshooting

ALL-TEST PRO® 5 results are immediately displayed for field evaluation. Our quick reference guide helps you make the call on the spot. Answer the mechanical / electrical question immediately and rule the motor “in” or “out”.

## Rapid Evaluation of the Entire Motor Circuit

Immediate and complete information on Status of Stator, Rotor, Connections, Contamination and Ground Faults A single, 2-minute test evaluates the windings, cabling, and connections. Additional tests let you evaluate the rotor and cabling to pinpoint the fault.

## Testing of AC and DC Motors, Transformers & Generators

The ALL-TEST PRO® 5 tests all types of motors, including induction, synchronous, AC, DC, brushless DC, servo and wound rotors, as well as single phase motors. The health of all motor components is evaluated, including, but not limited to: induction windings and rotors; DC field windings and armatures; and field and rotor coils in synchronous motors. Single and 3-phase transformers, pole and pad mounted, are also ideal candidates for motor evaluation with the portable, lightweight AT5.



## Data Collection With Companion Software For PdM

With a memory storage capacity for more than 650 tests, the ALL-TEST PRO® 5 has specific motor trending data accessible at the touch of a button. Test results are easily uploaded to your computer and our MCA Basic™ software provides expert diagnosis, trending, and a wide variety of printed or on screen reports. Software is available for individual or group users.

## Testing From The Motor Control Center

Most tests on installed motors are done from the MCC. Tests can be made through 1000+ feet, depending on cable. Even hard to reach motors (overhead cranes, submersible pumps, etc.) can be tested quickly and easily. No need to test at the motor terminals unless a fault is indicated.



# MCA Basic™ Software

## Motor Circuit Analysis Software for Predictive Maintenance, Troubleshooting and Condition Monitoring of Electric Motors, Generators and Transformers

### ALL-TEST Pro's MCA Basic™ Software:

- Makes it easy to organize and manage motors and test-records
- Provides trending and diagnostics for 3-phase and 1-phase AC motors
- Sets up complete databases for plant and motor nameplate data
- Test and trend analysis reports saved as PDF, Word and other file formats for transmission or printing
- MCA Basic™ is included with the ALL-TEST PRO® 5 and is upgradeable to MCA PRO™ Software (see below)

### MCA Basic™ combines with your ALL-TEST PRO® 5 to create a powerful tool for troubleshooting and managing 3-phase motors.

The database is designed to collect and organize nameplate information of your motors. For a manufacturing site, records can be grouped by building or process; for a service organization, you can group them by customer name and location.

### Motor Diagnostics for Troubleshooting

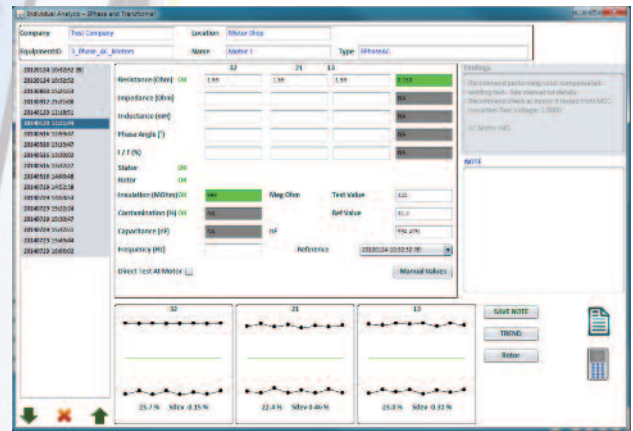
MCA Basic™ takes the guesswork out of interpreting test data. It provides a tabular and graphic view of the results, applies proprietary algorithms and automatically diagnoses likely motor faults on the screen. A built in report generator is included for printer output.

### Motor Trending for Predictive Maintenance

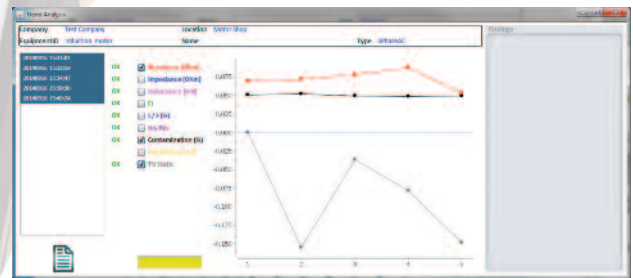
For condition monitoring, all measurements can be trend-graphed. Increasing unbalances give you advance notice of deteriorating conditions. Planning for repairs and avoiding unscheduled down-time saves money and aggravation.

### Scheduling and Review

For scheduling purposes, MCA Basic™ allows you to review motors to be tested by date and then record completed work. You can even record test data from other technologies like infrared.



**MCA Basic™ Three-Phase Analysis**



**MCA Basic™ Three-Phase Motor Trend**

### Also available: MCA PRO™ Motor Circuit Analysis Software

#### Upgrading to ALL-TEST Pro's MCA PRO™ Software adds:

- DC Motor Analysis, Transformer Analysis, AC Rotor Grading and Routing
- Work Order Generation and Reporting
- Enterprise Edition for Multiple Users

Motor Circuit Analysis PRO™ (MCA PRO™) is a user-friendly, intuitive advanced software for total motor system maintenance and management. MCA PRO™ is the industry's most powerful tool for analysis, trending, reporting, scheduling and maintaining records for AC/DC electric motors and transformers in service companies and in-house maintenance departments.

MCA PRO™, designed for use with the ALL-TEST PRO® 5 analyzer/data collection instrument, performs analysis on uploaded and imported equipment and rotor tests using proprietary algorithms. Provides snap-shot diagnostics and trending for all measurements. The exclusive Rotor Grading System (RGS) identifies troubled rotors and provides a trendable grade to any induction squirrel cage rotor motor. Work orders, analysis reports, route lists and more can be printed directly from the program.



# ALL-TEST PRO® 5 Complete Motor Circuit Analysis with One Hand-Held Instrument

**Predictive Maintenance of Electric Motors... Made VERY Easy!**

## Quality Assurance

New motors of any size can be defective. Health of spares “on the shelf” is often unknown. A 2-minute test can ensure that your motor is healthy. Testing new and spare motors before installation provides peace of mind that what you are installing is going to run properly, plus you gain a baseline test for future comparison.

Use the AT5 to:

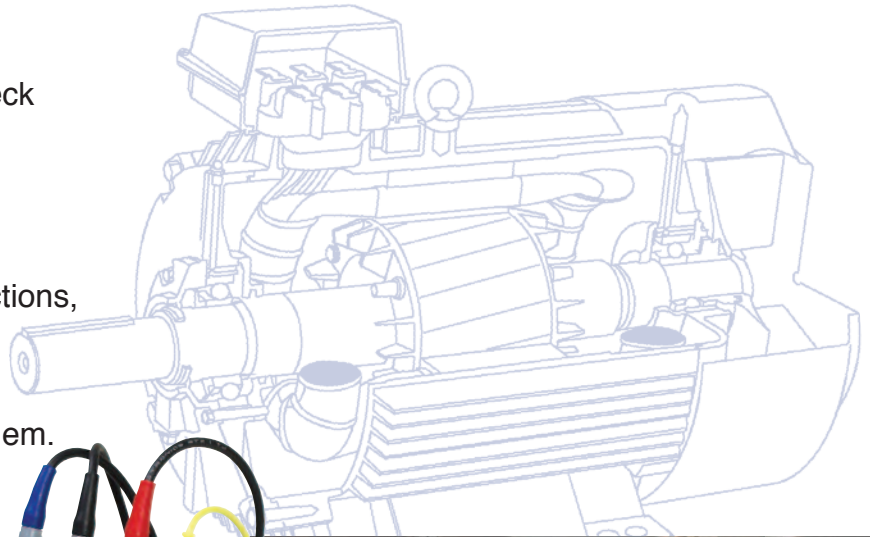
- Test incoming motors before putting them on the shelf
- Test failed motors to determine repairs needed
- Test repaired motors as final QC check before reintroducing to inventory

## Troubleshooting

If the motor system stops running, the ALL-TEST PRO® 5 evaluates the connections, cable and motor right from the starter, VFD or disconnect. This instrument will take the guesswork out of determining if you have a Mechanical or Electrical problem.

## Post-Sales Training and Service

ALL-TEST Pro, LLC services the market through several channels, including regional offices, national and international independent agents, US and Canada Manufacturer's Representatives and, depending on the product, specialty distributors and catalogs. Our technical training is performed worldwide and our customer support group is available on short notice.



# ALL-TEST PRO® 5 Specifications

## Test Frequencies

- 50, 100, 200, 400, 800 Hz

## Test Value Static / Reference Value Static

- 0.01-10000  $\pm 1\%$  (Dimensionless calculated value)

## Stator Test Dynamic

- Repeatability  $\pm 1\%$  (of measured data and calculated deviations)

## Rotor Test Dynamic

- Repeatability  $\pm 2\%$  (of measured data and calculated deviations)

## Resistance

- 0.01-999  $\Omega$  measurement range
- 0.01-99.9  $\Omega \pm 1\%$ , Max Resolution: 0.01 m $\Omega$
- 100  $\Omega$ -500  $\Omega \pm 1.5\%$ , displayed as whole numbers
- 501  $\Omega$ -999  $\Omega \pm 2.5\%$ , displayed as whole numbers
- Relative Accuracy "Phase to Phase"  $\pm 0.1\%$
- True 4-wire Kelvin measurement (Compensation for thermoelectric offset voltages)

## Impedance

- 0.1-999  $\Omega \pm 2\%$ , Max Resolution: 0.01  $\Omega$
- Relative Accuracy "Phase to Phase"  $\pm 0.2\%$

## Inductance

- 1-999mH measurement range
- 1-200mH  $\pm 2\%$ , all other values  $\pm 3\%$
- Relative Accuracy "Phase to Phase"  $\pm 0.2\%$

## Phase Angle

- 1-90°  $\pm 1^\circ$ , Max Resolution: 0.1°
- Relative Accuracy "Phase to Phase"  $\pm 0.1^\circ$

## I/F (current/frequency)

- -50%~+99%  $\pm 1\%$ , Max Resolution: 0.1 %
- Relative Accuracy "Phase to Phase"  $\pm 0.1\%$

## Dissipation factor - DF (frame - stator)

- 1-100% measurement range (expressed as a percentage)
- 1-10%  $\pm 0.5\%$  (C = 10-1000 nF)  $\pm 0.75\%$  (all other values of C within range 2-2000 nF)
- 10-30%  $\pm 1.0\%$  (This specification is based on battery operation and USB not connected to PC)

## Capacitance (frame - stator)

- 2-2000 nF measurement range; 10-2000 nF  $\pm 5\%$  (This specification is based on battery operation and USB not connected to PC)

## Insulation Resistance

- 0-999 M $\Omega$  @500V or 1000V
- 1-100 M $\Omega \pm 3\%$ , all other values  $\pm 5\%$

## Keyboard

- Alphanumeric, sealed tactile switches with backlight overlay

## Connections

- 3 x Motor input/output: push-pull connectors 4-pole
- High Voltage output:  $\varnothing$  4mm safety jack
- PC communication: USB type B connector
- Charger input: 2.5mm diameter center pin DC-jack

## Display

- Graphic LCD, monochrome 128 x 128 pixels (3.8"); white LED backlight

## Temperature Range

- Storage: -20°C to +55°C (-4°F to +131°F)
- Operating: -10°C to +50°C (+14°F to +122°F)

## Humidity

- 0-80% relative humidity, non-condensing

## Safety

- According to IEC 61010-1 Ed. 3.0

## Approvals

- CE

## EMC

- Emission: 61000-6-4
- Immunity: EN61000-6-2, EN61000-4-2, EN61000-4-3

## Calibration Certificate

- Optional (contact nearest distributor for more information)

## Batteries

- 2 x Li-ION cells with  $\geq 2100$  mAH capacity, UL 1642 (Safety)

## Enclosure

- Size: 126 x 218 x 51 mm (5"x8.6"x2") (WxLxH) (basic enclosure size without minor protrusions)
- Material: Polycarbonate, UL94 V-0 (Flammability)
- Weight: 0.7 kg (1.55 lb.)

## Accessories Included

- 3x Test Leads with heavy-duty custom Kelvin Clips and push-pull connectors
- 1x Test Lead with 4mm safety plug and MC "Dolphin" clip
- Charging adapter, Universal input type 100-240VAC, output 9VDC @ 1.7A
- MCA Basic™ Software (Windows 7, 32/64 bit)
- Durable and rugged hard case with pre-cut foam liner
- User Manual on CD

## Accessories NOT Included

Soft carrying pouch for instrument and test leads;  
MCA PRO™ Software; Training Demo Motor, Test Leads: 3x with Kelvin Clips and push-pull connectors and 1x with 4mm safety plug

## Patent-Pending

Warranty: 1 year limited warranty; Optional 2 years available with calibration

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