



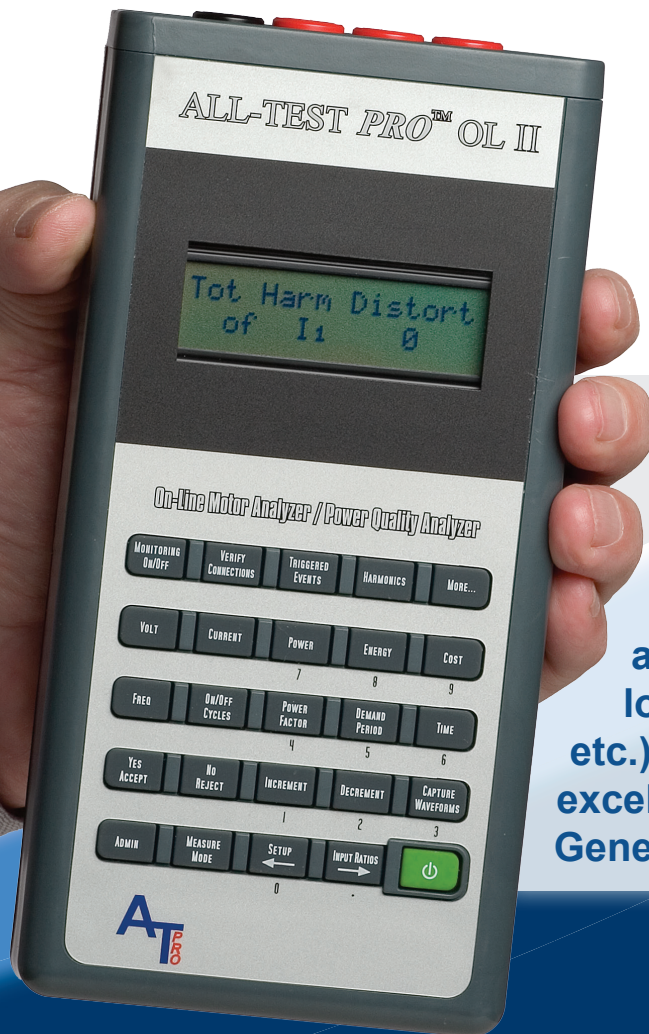
# ALL-TEST Pro, LLC

## ATPOL II™

ALL-TEST PRO On-Line II™

Complete Electrical Signature Analysis (ESA)

The Most Complete  
Electrical Signature and  
Power Analysis Instrument  
on the Market!



The ATPOL II™ delivers superior AC diagnostics for the evaluation of the health of the Stator Electrically and Mechanically, Rotor, Air Gap, and evaluates the entire driven load (belted, geared, bladed, etc.). The instrument also provides excellent Diagnostics for DC motors, Generators and Transformers.

**SAFE • RUGGED • PORTABLE • EASY TO USE**

**UNLIMITED MEMORY • WIRELESS BLUETOOTH • CE CERTIFIED**

PROFESSIONAL TRAINING AVAILABLE IN GROUPS OR IN YOUR OWN PLANT – WORLDWIDE

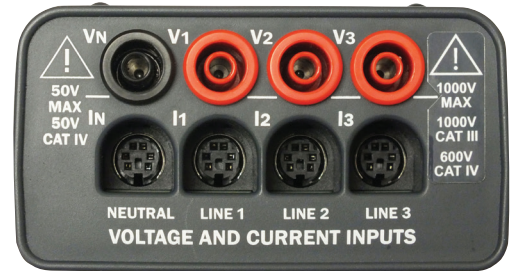
[www.alltestpro.com](http://www.alltestpro.com)

# COMPLETE MOTOR ELECTRICAL SIGNATURE ANALYSIS AND POWER ANALYSIS FOR AC/DC MOTORS, GENERATORS AND TRANSFORMERS

## EASY TO CARRY – EASY TO USE

The ATPOL II™ (ALL-TEST PRO On-Line II™) tester is the most complete Energized Motor and Power Diagnostic instrument available today – all in a hand-held, lightweight instrument. Rugged case with rubberized bottom for a safe grip. No need to carry a PC or other heavy equipment in the field, the ATPOL II™ fits in a small pouch, which can be slung over the shoulder or carried in a tool belt.

**No need to enter nameplate data before data collection, only prior to analysis!** Should you make a mistake when entering data – no problem. Just correct the data before analysis.



## CAT III 1000V – THE ATPOL II™ HAS THE INDUSTRY'S HIGHEST SAFETY STANDARDS

The ATPOL II™ has passed the highest standards for CAT III 1000V. The CAT IV 600V rating signifies it is suitable for testing at the service entrance ( $\leq 600V$ ).

## SUPERIOR DIAGNOSTIC POWERS—SMART & AUTOMATIC

The ATPOL II™ offers many Software and Data Analysis Advantages, including key determinations that are made automatically, including:

- Line Frequency, Running Speed and Pole Pass Frequency
- Software automatically looks for patterns related to Stator Slot and Rotor Bar fault frequencies
- Automatic detection of Static or Dynamic eccentricity faults
- Evaluation of Incoming Power, including Harmonics
- Calculates Efficiency for AC Induction & DC Motors
- Power Analysis includes Sag/Swell and Transient Detection plus Energy Consumption Data Logging

The ATPOL II™ delivers superior AC diagnostics for the evaluation of the health of the Stator Electrically and Mechanically, Rotor, Air Gap, and evaluates the entire driven load (belted, geared, bladed, etc.). The instrument also provides excellent Diagnostics for DC motors, Generators and Transformers.

## ALWAYS KNOW YOUR CONNECTIONS ARE CORRECT

Verify Connections feature analyzes voltage and current connections to make sure they are installed correctly. No more misses or strange results due to faulty application of the leads!

## UNLIMITED MEMORY

SD Memory Card slot provides unlimited storage for your test data!

## EASY, VERSITILE PC Communication

Choose either Bluetooth® wireless or USB wired data transmission from the ATPOL II™ to PC. Bluetooth® is a registered trademark of Bluetooth SIG, Inc.

## POWER MONITORING WITH THE ATPOL II™

With its advanced power monitoring capabilities, the ATPOL II™ offers a clear advantage over the competition.

- Document Energy Consumption and Savings
- Evaluate Opportunities for Improvement
- Troubleshoot Incoming Power



# TOOLS TO ANALYZE AND REPORT BOTH THE ELECTRICAL AND MECHANICAL CONDITION OF THE ENTIRE MOTOR OR GENERATOR SYSTEM

Plant Name: \*\*\*\*  
 Coordinator: \*\*\*\*  
 Date: 10/19/2010 13:51:50  
 File name: C:\USERS\RSCOTT\DOCUME..ATPOL..\SAMPLE..\15 OF ..75% LOAD\_000

Equipment: \*\*\*  
 Analyst: \*\*\*

## ALL TEST 6.31 Analysis Results

### PERFORMANCE SUMMARY

#### Bottom Line

- This induction motor is operating normally, no action is required.
- This induction motor exhibits suspicious operation, trending of the induction motor is warranted
- This induction motor exhibits abnormal indications, action is warranted, NOW.

#### Power Factor Commentary

- Power factor exceeds 0.85.
- Power factor is below 0.85, see detailed report.

#### Current Commentary

- Current variation is within normal limits.
- Current variation is beyond normal limits, see detailed report.

#### Voltage Commentary

- Voltage variation is within normal limits.
- Voltage variation is beyond normal limits, see detailed report.
- RMS voltage differs from nameplate by more than 5%.

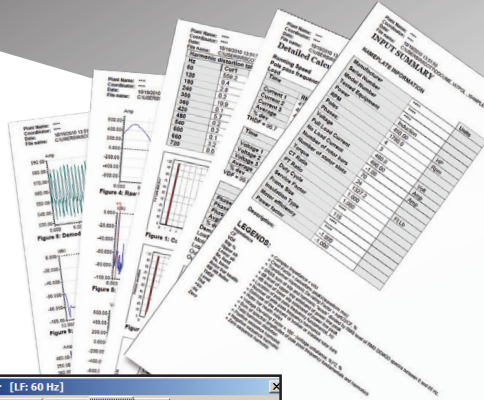
**COMPREHENSIVE 6-PAGE SUMMARY REPORT DETAILING THE CONDITION OF THE ENTIRE MOTOR SYSTEM MAKES YOUR JOB A LOT EASIER!**

Automatic analysis of the electrical and mechanical system for induction, DC, and Synchronous motors; plus Generators, Transformers and VFDs.

Equipment: \*\*\*\*  
 Analyst: \*\*\*\*

..SAMPLE..15 OF ..75% LOAD\_000  
**ults**

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#### Power Factor Commentary

- Power factor exceeds 0.85.
- Power factor is below 0.85, see detailed report.

#### Current Commentary

- Current variation is within normal limits.
- Current variation is beyond normal limits, see detailed report.

#### Voltage Commentary

- Voltage variation is within normal limits.
- Voltage variation is beyond normal limits, see detailed report.
- RMS voltage differs from nameplate by more than 5%.

#### Commentary

- Load on the induction motor is consistent with nameplate values.
- Load on the induction motor exceeds nameplate values, see detailed report.
- Load on the induction motor is less than 25%.

#### Connection Commentary

- Connections are normal.
- Voltage ground reference is NOT neutral.
- Loose connection.

#### Rotor Commentary

- Rotor bar health is normal.
- Rotor bar health is questionable, see detailed report.
- Load is insufficient to determine rotor bar health, at this time.

#### Stator Commentary

- Stator health is normal.
- Stator mechanical health is questionable.
- Turn to turn short.

#### Rotor/Stator Air-gap Characteristics

- Dynamic or static eccentricity indications do not exist.
- Indications of static eccentricity exist.
- Indications of dynamic eccentricity exist.

#### Harmonic Distortion Commentary

- There is no evidence of harmonic distortion.
- There is evidence of harmonic distortion, see detailed report.

#### Misalignment Indications

- There are no indications of mechanical problems like misalignment or unbalance.
- There are indications of mechanical problems like misalignment / unbalance. Perform vibr. survey to identify and correct the cause.

#### Bearing Commentary

- There is no evidence of bearing problem.
- Indications of potential bearing problems, perform vibration survey to verify.

**Manager's Report**  
 Non-Technical  
 Assessment  
 and Summary  
 Easy to Understand

**Induction Motor [LF: 60 Hz]**

Time	Freq	Bearings	Phasors	Results	Extras
Power factor	DK				
Current	DK				
Voltage	Dev. too much from name plate				
Load	DK [Ld 75.0%]				
Vlt-GND ref NOT neutral	DK				
Connection	DK				
Rotor	RB health is questionable (C:7)				
Stator (mechanical)	DK				
Air gap	DK				
Harmonic distortion	DK				
Misalignment	DK				
Bearing/Unidentified	DK				
Bottom line	Abnormal indications				

\*Note: Noise floor is -73 db  
 \*\*\*Note: Sub-synch. peaks detected in demod data

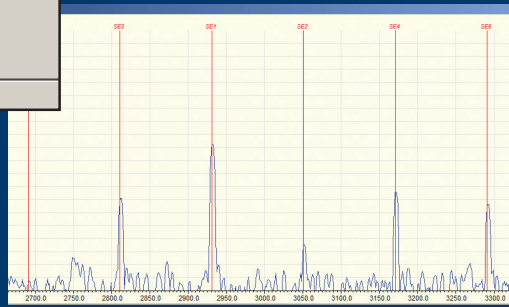
**Tested Equipment**

- Induction
- Induction
- Synchronous
- VFD
- Transformer
- Generator
- DC Equipment
- Asyn. Generator

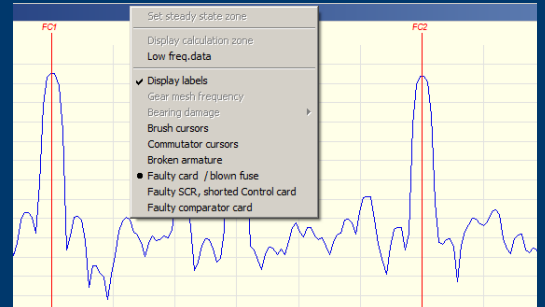
**Driven Equipment**

- Gear box-2
- None
- Gear box-1
- Gear box-2
- Pulley-belt
- Pump
- Other

Teeth-1 37



ATPOL II™ calculates and identifies mechanical as well as electrical faults.



ATPOL II™ automatically identifies and reports common DC motor faults, such as broken armature, faulty SCR's, etc.

## ALL-SAFE PRO®

### PERMANENTLY INSTALLED TEST PANEL FOR HIGHER PRODUCTIVITY, SAFER ENVIRONMENT AND GOOD OPERATOR CONDITIONS

#### The perfect compliment to the ATPOL II™

The ALL-SAFE PRO® connection box eliminates the need for the operator to suit up in special protective clothing, speeds up the test considerably by eliminating the need to open the panel for placing probes and clamps on energized leads. Installation takes only about one hour, using simple, commonly used tools.

The output pins are deactivated when not connected to the ATPOL II™, so there is no risk for exposure to dangerous voltage.

CSA, UL and CE listed.



## ALL-TEST PRO®

### ALL-TEST PRO® ALSO OFFERS DE-ENERGIZED TESTING FOR TROUBLESHOOTING, PREDICTIVE MAINTENANCE AND QUALITY CONTROL

The new AT5™ for de-energized testing detects faults in all motors and types, including transformers and generators. Auto diagnosis within the instrument provides immediate health status reports. Route-based testing and trending make predictive maintenance painless. Tests can be performed from distances of over 1,000 feet away.

The ALL-TEST PRO 31™ is the perfect tool for troubleshooting and quality control of de-energized motors, rotors, coils and windings. A must-have tool for a serious electrician working with motors.

No other testing equipment for electric motors, generators and transformers gives you a more accurate, easy-to-use and economical way to keep your motors and windings healthy.



De-energized testing for troubleshooting and incoming inspection

De-energized testing for complete analysis of windings and rotors

## ALL-TEST PRO MD III™

### THE MD III™ ASSEMBLY INCLUDES ALL YOU NEED FOR COMPLETE ENERGIZED AND DE-ENERGIZED TESTING OF MOTORS, GENERATORS & TRANSFORMERS

Combine the power of Motor Circuit Analysis (MCA™) and Electrical Signature Analysis (ESA) to evaluate and trend your entire motor system. Auto diagnosis within instrument providing an immediate health status report. Route-based testing and trending is ideal for Predictive Maintenance. Reports provide indication of early winding faults, rotor problems, incoming power issues, electrical and mechanical motor condition and driven load mechanical condition.



#### The ATPOL II™ includes:

- ALL-TEST PRO On-Line II™ hand-held data collector (1)
- 0.1 - 100A portable current transformer (4)
- 1 - 6000A flexible, portable current transformer (4)
- Voltage test leads and clips (4)
- AC battery charger 115V or 230V (1)
- Hard sided carrying case (2)
- ESA & PSM software (1 each)
- User manual on CD
- Warranty card (1)

#### SPECIFICATIONS:

- ATPOL II™ weight: Less than 2 lbs. (0.9 Kg)
- ATPOL II™ size: 3-3/4" wide x 7-1/2" long x 2" deep  
(95 mm W x 190 mm L x 50 mm D)
- Gross weight for shipping: 20 lbs. (9.1 Kg)
- Gross size for shipping: 20" x 14" x 18"  
(50.8 cm x 35.6 cm x 45.7 cm)



For complete technical specification see separate ATPOL II™ specification sheet.

#### ALL-TEST Pro, LLC

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#### Represented by: