

MOTOR GENIE™

Quick Start Guide



Before using your new instrument be sure to review the user manual including important safety information. The MOTOR GENIE™ is an off-line tester. The motor MUST be de-energized before testing. If you connect to live voltage it will damage the instrument and may also cause you harm.



Input Section



- A. Test Lead port
- B. Charger port
- C. Ground test lead port for Insulation to ground measurements
- D. Reset button

1 Turning on the Instrument

Turn the instrument on by pressing the F1/ON Key.



Move the cursor on the screen left to right by pressing the F1 and F2 keys.



2 Insulation to Ground Test - INS

Use the F1 & F2 keys to select the INS Icon.



Connect both the red and yellow lead to ground.

Press the ZERO/OK key to select the resistance test (INS).



The Insulation Resistance Test screen will display.



Press and hold the TEST button until a stable reading is obtained.



Connect red test lead to phase 2 and yellow to frame ground. Press F2 key to toggle between 500 & 1000V.

Press and hold the TEST button until a stable reading is obtained.

Press MODE to return to the main menu screen.



3 Phase Resistance Test - RES

Use the F1 & F2 keys to select the RES Icon.



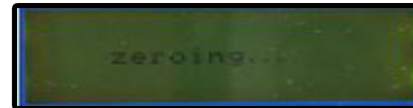
Press the ZERO/OK key to select the RES Icon.



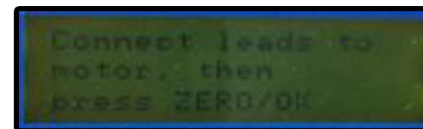
The screen states to connect the Red and Black test leads, then press the ZERO/OK key



Instrument will display "ZEROING".



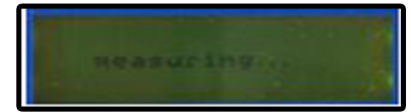
Screen will state "Connect lead to motor, then press ZERO/OK".



Connect Red and Black test leads to Phase 1-2 and press ZERO/OK.



Measuring screen will appear, then the resistance result will be displayed.



Note: If display states "No Continuity", disconnect and then reconnect test leads. Press ZERO/OK. If "No Continuity" is still displayed then the connection is open.

Connect the test leads to the motor terminals and test Phase 1-3. Then press the ZERO/OK button to get the resistance value.



In the same way, test the resistance on the other two terminals and test Phase 2-3. Then press the ZERO/OK button to get the resistance value.

4 Impedance / Phase Angle Test

Press the MODE button to return to the main menu.



Use the F1 & F2 keys to move the cursor to the Z/φ Icon.



Connect the red and black leads to Phase 1-2.

Press the ZERO/OK key to select the Impedance/Phase Angle test.



The first screen will show the Impedance and Phase Angle for Phase 1-2.

NOTE: In the lower right hand corner it states 200Hz. 200Hz is the default test frequency for the impedance. Frequency can be increased or decreased using the F2/HZ and Up/Down keys.



Press F2/Hz once and the display in the upper left corner will change to an up/down arrow. Press the down arrow on the keypad and the frequency will decrease. Press the Up arrow on the keypad and the frequency will increase. Your value will appear on the screen.

With the red and black test leads still connected to Phase 1-2, press the TEST button. This will double the test frequency. Your value will display on the screen.

Connect test leads to Phases 1-3 and then 2-3 to make the same measurements. Your value will appear.

Press the mode key to return to the main menu.



5 Analysis

Three Phase Motor Test Results

Test	Limits	Description
Resistance (R)	< 5%	Likely loose or faulty connections
Impedance (Z)	Special	This result can be used to trend the condition of a winding. If the overall readings decrease significantly, between tests, then the winding is degrading or contaminated.
Phase Angle (Fi)	+/- 1 point	Fi is a winding short indicator. A result of 35, 36, 37 degrees is OK, a result of 35, 32, 32 would be a fault (shorted winding). This value should be greater than 15 degrees and less than 90 degrees.
Current/Frequency (I/F)	+/- 2 points	I/F is a winding short indicator. A result of -44, -45, -46 would be OK, -44, -46, -46 is borderline and -42 -45, -45 would be a fault (shorted winding). These readings should be between -15 and -50.
Phase Balance	< 5%	Read manual for test procedure and guidelines.
Insulation Resistance	See Table 2 and 3	Indicates ground wall insulation failure or severe winding contamination.

Insulation Resistance Voltage

Motor Voltage Rating	Insulation Test Voltage
< 1000 Volts AC	500 V

Insulation Resistance Values

Application	Pass/Fail Value
Insulation systems prior to 1974	> 1 Meg-Ohm + 1 Meg-Ohm per kV rating of motor
Random Wound motors less than 600 V	> 5 MegOhms

Additional Features and Functions

Resetting the Unit

On occasion, the MOTOR GENIE™ may fail to respond to keyboard, or lock up due to excessive EMI or other reasons. To reset the unit if this happens, simply press the reset button.



Charging the Unit

To charge the unit, plug the battery charger into the battery charging port on top of the instrument.



Plug other end of battery charger unit into the wall receptacle.

When charging the charging light will be illuminated red.



Data on screen will identify information on the battery including length of time on charge, battery voltage level and battery temperature.

Battery charge light will turn green when fully charged.

Tech Support & Information

Technical support can be obtained by emailing or faxing your questions to ALL-TEST Pro, LLC at:

Email: support@alltestpro.com
Fax: 860-399-3180

Put "MOTOR GENIE Tech Support" in your subject line.

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