M500 Insulation Tester Guide – Megohm Meter

Features

- Full range scale up to 1000 Megohms
- Zone scale to indicate condition of insulation
- Operates on (2) “C” batteries (not included)
- Test leads store inside meter

Applications

- Hermetic compressors
- Condenser and blower motors
- Circuit Boards and transformers
- Ground loop and conduit wiring
- Panel boards and relay control circuits

Specifications

- Indicator range: 20 to 1,000 Megohms
- Applied voltage: 500 volts
- Display: LED’s Dimensions: 3-3/8” x 6-3/8” x 1-3/4”
- Power source: (2) “C” batteries
- Test leads: 24” long w/alligator clip and magnet (old design used 8” leads with standard clips)

Figure 1



F1. *Release button and make sure leads are connected and making contact. Test again to make sure windings are good.*

F2. *A megohm reading of 20 to 100 may indicate a lack of maintenance. Check for contaminated oil or dirty motor windings.*



Warning Hazardous Voltage Contact may cause electrical shock and injury. Disconnect all power before servicing.

How to test a Hermetic Compressor or motor

- **Do Not test a compressor under vacuum.**
- **When testing a fan or condenser motor, run the motor so it heats up and evaporates any moisture on the windings. Moisture can cause the M500 to give false low readings.**

1. Remove the back cover and connect (2) new “C” size batteries as indicated inside the meter. Replace batteries as needed. If M500 battery supply drops below 2.8 volts, it can give inaccurate readings
2. Remove all connecting wires from the compressor or motor.
3. Attach Red test lead from the M500 to the compressor as shown in Figure 1. Make sure the black lead is attached to an unpainted part of the compressor or motor chassis.
4. Press the “Red” button on the M500. **Do Not touch the M500 leads when the button is pressed.** The green “ON” light should illuminate immediately. *(If the light doesn’t turn on, disconnect the M500, check the batteries. Replace batteries if needed.)*
5. After the “ON” LED is lit, wait 10 seconds then check the Megohm LED value. On small compressors or motors the M500 Megohm LED’s may turn on then quickly turn off. This indicates the value is above 1000 meg-ohms. (See **F1**)
6. If M500 reading is “GOOD”, release the Red button and move the red wire to each remaining leg for testing and repeat step 5.
7. If only the 20 megohm LED is lit, this indicates that the insulation value is low or shorted to ground. *(Check the compressor/motor with an ohm meter. If the ohm meter reads a short, replace the compressor/motor.)* If the ohm meter reads open, this indicates compressor/motor insulation breakdown. (See **F2**)

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