



ALL-TEST Pro delivers on the promise of true motor maintenance and troubleshooting, with innovative diagnostic tools, software, and support that enable you to keep your business running.

MCA™ or Motor Circuit Analysis™ is a deenergized nondestructive test method that assess the condition of the motor winding and rotor in electrical motors. **MCA™ provides answers, not more questions.** MCA's practical applications include:

- **Preventive maintenance** is an important part of facilities management. The goal of a successful preventive maintenance program is to establish consistent practices designed to improve the performance and safety of the equipment at your property.
 - **Condition based maintenance** is to monitor and spot upcoming equipment failure so maintenance can be proactively scheduled when it is needed – and not before.
 - **Planned Maintenance (PM)** is when maintenance is performed based upon predefined scheduled intervals. Condition based maintenance is performed only after a decrease in the condition of the equipment has been observed. Compared with preventative, this increases the time between maintenance repairs because maintenance is done on an as-needed basis.
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Typical issues MCA™ easily troubleshoots, and answers quickly include:

1. What is the condition of my plants spare and replacement motors?
2. Is the problem with the motor, cabling or in the mechanical system?
3. Does this motor need to be rewound?
4. Why is my motor tripping or overheating?
5. Our meg-ohm-meter shows the motor is good; so why are we still having problems?
6. Have you ordered and installed a new VFD, yet the system still doesn't work?
7. What's the status of that motor pushed off to the side of the plant floor?

Answers:

1. A 3-minute MCA™ test lets you know the condition of the entire motor system, both ground wall & winding insulation system, and rotor.
2. A test from the motor control center and then a test at the motor will give you the answer in less than 6 minutes.
3. A MCA™ test will answer this question in less than 3 minutes.
4. Developing winding faults – winding degrades over time. MCA™ technology identifies developing faults very early and they can be trended & used for troubleshooting.
5. Could be either a Rotor problem, connection or winding issues. A meg-ohm-meter does not diagnose rotor, internal winding faults nor open, loose connections.
6. The motor was faulty, not the VFD! MCA™ can determine this prior to replacing the expensive drive system.
7. MCA™ can quickly and accurately assess its condition.

MCA instruments include: AT34™, AT7™, AT7 PROFESSIONAL™, AT31™ & MOTOR GENIE®

Reduce man hours, confusion and guesswork by utilizing better technology.



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ESA or Electrical Signature Analysis is an energized nondestructive test method that uses the motors supply voltage and operating current to identify existing and developing faults in the entire motor system. ESA's practical applications include:

- **Preventive maintenance** is an important part of facilities management. The goal of a successful preventive maintenance program is to establish consistent practices designed to improve the performance and safety of the equipment at your property.
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Typical issues ESA easily troubleshoots, and answers quickly include:

1. I have a very successful vibration program, what benefit would ESA provide?
2. Vibration indicated there was nothing wrong with my overhung fan or vertical pump, why does ESA indicate issues?
3. How do I accurately determine the running speed and condition of my motor if it is lightly loaded?
4. What does ESA really do for me?

Answers:

1. ESA can measure the condition of the entire motor system in less than 1 minute, identifies most faults earlier than vibration, plus provides a power quality analysis.
2. Vibration measures motion and requires the sensor being placed on the component that is moving. ESA uses the motors voltage and current as it's transducer and can identify faults anywhere in the motor system from incoming power clear through to the actual process itself.
3. By measuring the motors voltage and current, ESA can identify faults on motors very lightly loaded and in some cases with the motor running solo. Induction motors that are coupled to any load the motor's speed, power factor, and efficiency can be precisely determined in a single 1-minute test.
4. ESA analyzes the entire motor system in normal operating conditions. It detects developing electrical & mechanical faults in the earliest of stages. Additionally, it performs a complete power analysis to identify any incoming power issues that can lead to premature failure in the electrical subsystem of the motor system. ESA has proven to be the fastest method to detect issues and is critical to a successful predictive maintenance program.

ESA instruments include: ALL-TEST PRO On-Line II™

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