

Medium-Voltage Motor Starters

1. According to ANSI/NETA MTS-07, there are four adjustments to check on medium-voltage motor starters. What are they?
 - a. _____
 - b. _____
 - c. _____
 - d. _____
2. When performing an overpotential test on the insulation, what is an acceptable value?
 - a. One megohm/kV + one megohm
 - b. 100 megohms
 - c. 5,000 megohms
 - d. No sign of failure
3. What is the maximum deviation allowable between fuse resistances?
 - a. 10%
 - b. 15%
 - c. 20%
 - d. 50%
4. What is the maximum deviation between resistance measurements on bolted connections?
 - a. 25%
 - b. 30%
 - c. 50%
 - d. 75%
5. Medium-voltage motor starters use blowout coils. What do these do?
 - a. Blow a puff of air between the contacts to force the arc up into the arc chute
 - b. Extinguish the arc using a strong burst of air
 - c. Create a magnetic field that helps draw the arc into the arc chute
 - d. Create a resistance in the arc path that causes the arc to diminish, thereby making it easier to extinguish.



Jim White is the Training director for Shermco Industries and the principal Shermco representative on the NFPA 70B committee. Jim is the alternate NETA representative on the NFPA 70E committee and serves as the NETA representative on the IEEE/NFPA Arc-Flash Hazard Work Group (RTPC) Ad Hoc Committee. He served as the Chairman of the 2008 IEEE Electrical Safety Workshop. Jim is a NETA Certified Level IV Electrical Testing Technician and a member of the NETA Safety Committee.

- Answers*
1. a. Contact gap b. Contact pressure c. Contact wipe d. Contact alignment
 2. d. No sign of failure. The one megohm/kV + one megohm is old school for insulation resistance test values. This value is much too low for good insulation. Use Table 100.1 instead.
 3. b. 15% for all power fuses.
 4. c. 50% for all bolted connections.
 5. c. As the arc current passes through the blowout coil a magnetic field is created that pulls the arc into the chute. The same thing happens on medium-voltage air circuit breakers.