

This troubleshooting guide supports the KMC video [MS/TP Troubleshooting Using a Multimeter – Bifurcation](#). The video covers this information plus a troubleshooting technique called “bifurcation,” splitting the network to pinpoint the problem area.



TESTS USING A STANDARD MULTIMETER

Common tests, results, and potential root causes.

1. Check Resistance (Set to Ohms)			Common Issues
●	Shield	Normal Reading 0 Ohms	Greater than 3 Ohms: Shield is not grounded.
●	Earth Ground		Less than 3 Ohms when ground is removed : You are grounded in more than one place. Find the extra ground and eliminate it. Only ground once on your network.
2. Check DC Voltage A- and B+ (Set to DC)			Common Issues
●	A-	Normal Reading 200 MV or 0.2 VDC	Less than 200 MV: A- and B+ are shorted on network.
●	B+		Greater than 500 MV: Either 1) A- and B+ are not connected on one side of the network; or 2) an end of line (EOL) switch is not turned on.
3. Check DC Voltage B+ and Earth GND (Set to DC)			Common Issues
●	Earth Ground	Normal Reading 2.0 - 2.5 VDC	Less than 700 MV: B+ is shorted to the shield, potentially by a stretched or crushed wire.
●	B+		Greater than 3 VDC: A NetSensor is shorted on the B+ side.
4. Check DC Voltage A- and Earth GND (Set to DC)			Common Issues
●	Earth Ground	Normal Reading 2.0 - 2.5 VDC	Less than 700 MV: A- is shorted to the shield, potentially by a stretched or crushed wire.
●	A-		Greater than 3 VDC: A NetSensor is shorted on the A- side.
5. Check AC Voltage B+ and Earth GND (Set to AC)			Common Issues
●	B+	Normal Reading Less than 2.0 VAC	Greater than 2 VAC: Some source of voltage is shorted to the COMM.
●	Earth Ground		Around 24 VAC: A controller is mis-phased.
6. Check AC Voltage A- and Earth GND (Set to AC)			Common Issues
●	A-	Normal Reading Less than 2.0 VAC	Greater than 2 VAC: Some source of voltage is shorted to the COMM.
●	Earth Ground		Around 24 VAC: A controller is mis-phased.