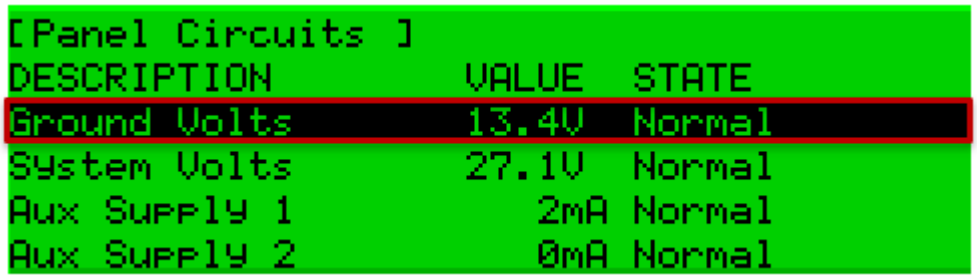
Technical Support Tip

Monitoring Ground Troubles on Axis AX – Trace, Diagnose and Fix

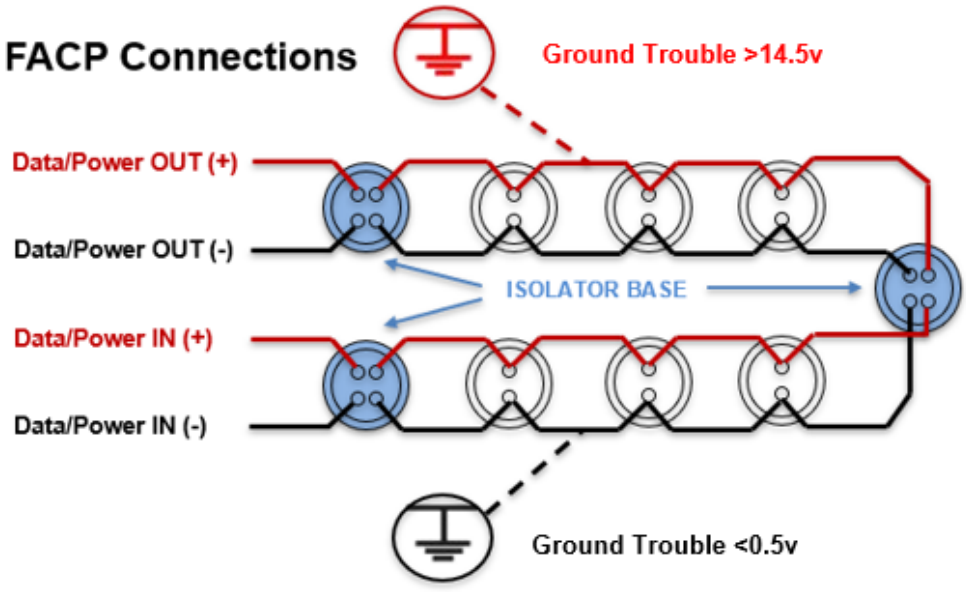
Track, trace and fix ground troubles using the onboard multi-meter as detailed in the step-by-step procedure below.

1) Identify the ground trouble using the control panel multi-meter via the menu option: **'Access Level 2 > View > Panel > Local Hardware > Ground Volts'**

2) The standard/normal ground voltage value for Axis AX products should be:



3) Should ground voltages exceed normal levels and reach the thresholds stipulated in the diagram below, this will result in a 'high' (positive to ground) or 'low' (negative to ground) trouble.



4) Ground voltages creating a marginal increase/decrease from the standard/normal reading are caused by induced current flow, better known as ‘Ground Potential Difference’, and should be treated and rectified in the same way as a genuine ground trouble.

   Grounding potentials typically increment the multi-meter by as little as +/-0.5 and never reach the ultimate threshold for ground trouble detection. However, if left unresolved can result in data corruption due to the presence of an increased AC current flow.

5) To detect the loop/circuit with the ground trouble, disconnect each circuit one at time from the panel whilst observing the status of the multi-meter voltage.

6) The circuit that you disconnect that returns the voltage to its ‘Normal’ level is the one detecting a ground trouble.

7) Once identified, the circuit (Loop/Sounder/Network) should be connected in a ‘radial’ format to allow you to work from the panel out into the field to Track, Trace and Fix the unwanted ground reference.

   Working with a radial circuit provides only one distinct reference to ground and allows the affected circuit to be broken into smaller sections for investigation.

8) Keeping a close watch on the multi-meter and with a true radial format, make strategic breaks in the circuit until the multi-meter returns to its correct reading.

9) The correct reading can now be used to re-connect any remaining devices that have been disconnected during investigation until the ground trouble returns and the cause is revealed and fixed.

10) Finally, now that the problem has been identified and fixed, the circuit can be fully re-connected to the panel in the correct way (Radial/Loop).

Note

Ground troubles are problematic for any data-driven system, so please follow the guidance notes below at all times!

a) The control panel multi-meter should be used for investigating the presence of a ground trouble condition since engineer/field meters are unable to detect such conditions if devices include built-in isolators.

b) Never turn off the ground monitoring of a fire control panel as this will simply disguise the condition. It is also very likely to result in data corruption caused by the control panel’s inability to correctly interpret the intelligent device data.

Please contact Technical Support if you need any further help.
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