TOTALFLOW

Technical Bulletin 149

Proper Grounding of External Three-Wire Transmitters

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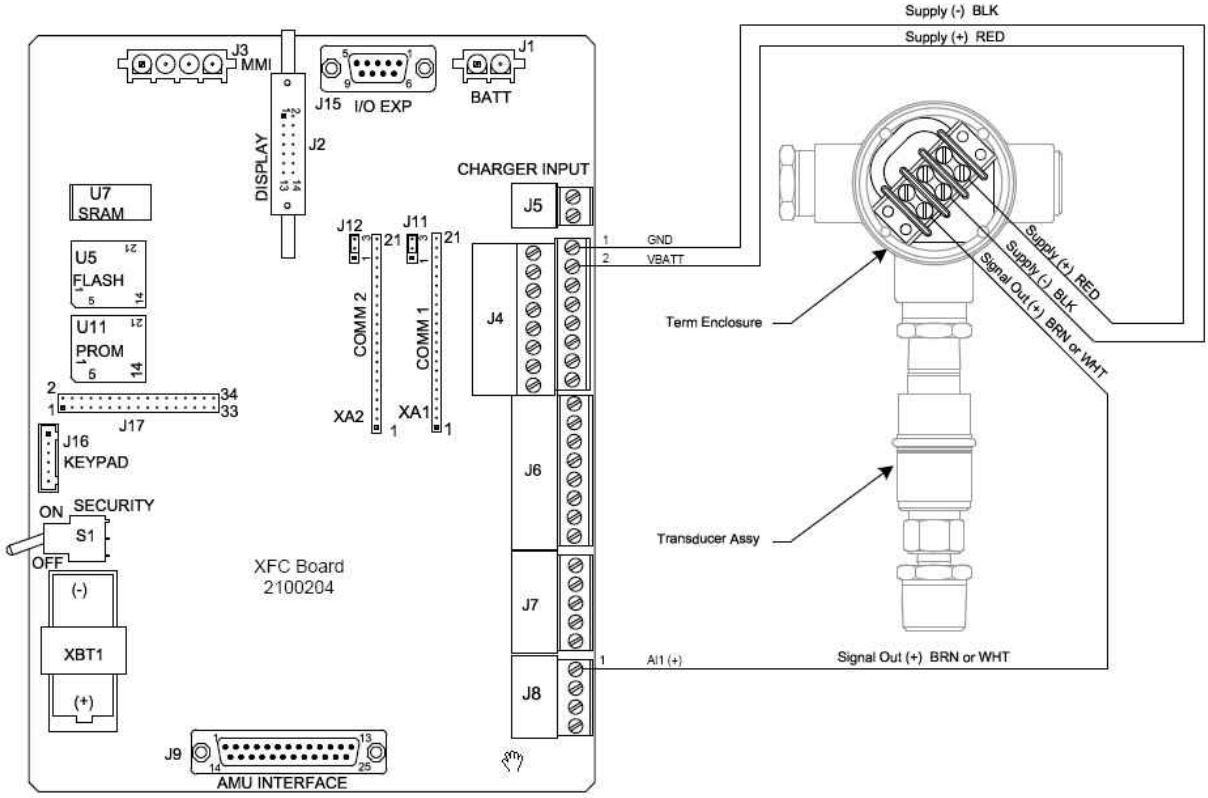
1. **Purpose**

To address a potential transient voltage problem with the 2100204-XXX (XFC) board when using three-wire external transmitters.

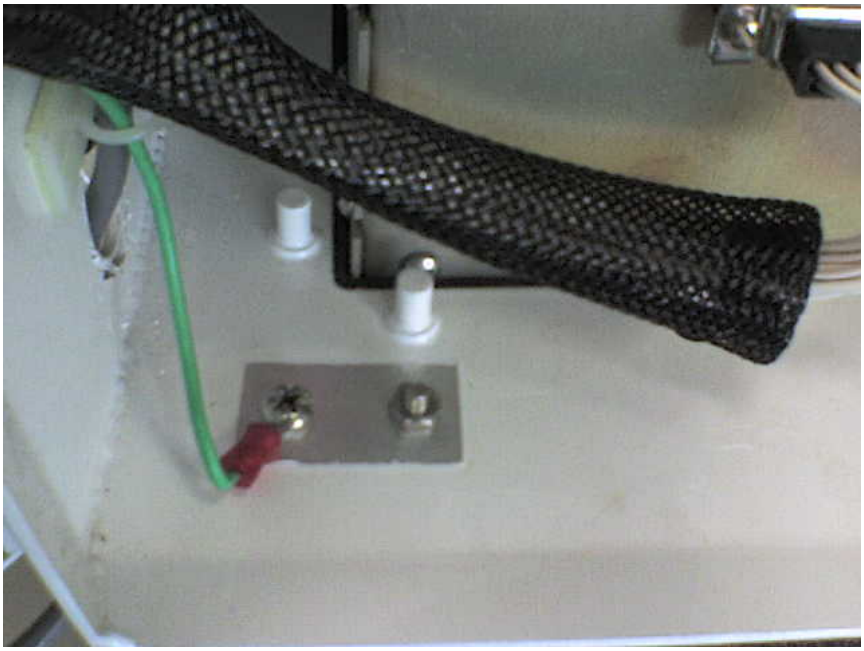
2. **Description**

The connections on a three-wire external transmitter include Power, Ground, and Signal. The ground connection on these type transmitters is not a signal ground, it is a supply ground. This can cause a potential problem in the XFC board if the Analog Input (AI) ground is used for this connection. The AI grounds on the XFC board are signal ground connections that have very little current handling capabilities because of the filters that are present on the XFC boards. This gives the AI ground connection a very limited ability to handle current spikes that are generated from voltage transients coming in from the external transmitter.



The ground connection on these types of transmitters should be wired directly to supply ground as shown above in user drawing 2102486. If the ground connection shown above is used by other equipment, this can also be accomplished by using the case ground connection in the bottom of the XFC enclosure to wire the ground coming from the external transmitter (shown below).

If this connection is used, make sure that the metal underneath the ground screw is bare and clean before making the connection.



Conclusion

Improper connection of the ground wire coming from these types of transmitters can cause severe damage to the XFC board. However, with proper installation, these boards should have no problems resulting from external transmitters. If you require further assistance, or if you have other questions concerning your particular situation, please call the Technical Support Line at 1-800-442-3097 and select option 2.