



QUALITY INSTRUMENTATION SUPPLIERS

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RS485 Cable Screen Earthing Considerations

1. It is important at the outset that the screen for RS485 comms between controllers and the master device only be earthed at one end, normally the master device end.
2. It is possible to earth each section to a local earth, but still only at the one end of each link.
3. It is preferable to link each screen from one cable to the next and only earth at the master end.
4. If choosing to do this make sure that there is no accidental earthing of the connection being made between screens.
5. The best way to do this is to strip back the screen and leave the 2 comms wires protruding for connection to the terminals and then use a piece of insulated earth panel wire to make the link, after which you should slip a piece of heat shrink over the end connection and shrink.
6. The routing of comms cables is also very important and should be kept segregated from power carrying cables.
7. Theoretically they should be in separate trunking or follow separate routes but in practice, as a rule of thumb, as long as you keep a few inches separation from power carrying cables it will be OK.
8. It is important that “twisted pair” screened cables are used for RS485 comms applications. The twisting of the pairs also helps in reducing the effect of noise induced by current carrying cables in the vicinity.
9. If the cables must cross power carrying cables this should ideally be done at right angles.
10. The terminal 15 on our Vertex VT4820 is an auxiliary power supply zero voltage terminal and is therefore not suitable for earthing screens on cables connected to terminals 13 and 14.
11. All suppliers of instrumentation comms equipment remain acutely aware of the effect of electrical noise especially that of mobile phones and or plant walkie talkies (RFI) and care should be taken when using these devices around instrumentation comms installations.
12. Correct installation procedures however greatly reduces the risk of interference.
13. The matter of screening and cable routing is a wide and complex topic, so this short explanation is intended to at least draw your attention to the matter and offer advice in it's simplest form.
14. Please satisfy yourself that your installation complies with electrical/communication application and health and safety requirements.