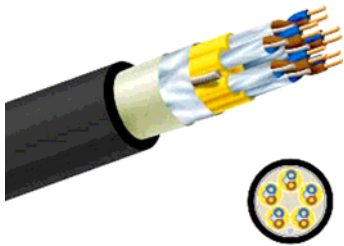


Cable Innovation Makes Industrial Networking Easier, Faster and More Reliable

DataCELL® FOUNDATION™ fieldbus M-EZ (Marshal-EZ) Cables

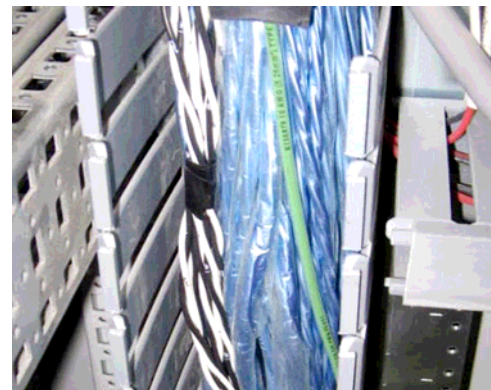


As engineers and systems integrators gain experience with FOUNDATION fieldbus installations, they are realizing the advantages of multi-pair fieldbus trunk lines in plant installations. These users are simplifying installations by merging formerly scattered control and instrument points into common bus segments and junction boxes. The benefits include installation cost savings, more compact cable housing in a tray or conduit and neater assemblage in the junction boxes. Instead of running bundles of single-pair trunk lines, cable specifiers are requesting multi-pair fieldbus trunk cables.

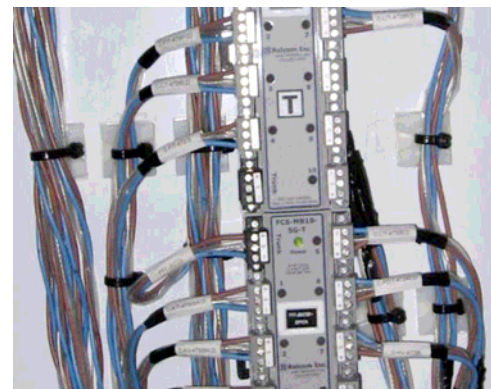
Reduced cable costs are another advantage of multi-pair trunk cables. A FOUNDATION fieldbus five-pair trunk cable typically costs less than five single-pair cables. However, the most significant savings realized is in the installation. Only one cable needs to be pulled instead of five or more individual cables.

In a marshaling or control cabinet where several trunk cables are brought together, the outer jackets are stripped off as close to the termination points as possible. When a multi-pair cable is used, even more of the outer jacket is stripped, exposing the shielded pairs. Most designs have a metal foil on a polyester substrate in the form of tape wrapped around the twisted pairs and a drain wire. Occasionally, an additional polyester tape is wrapped over the foil shield to prevent the conducting layers from shorting inside the cable during handling.

Protecting the integrity of the cable shields during installation is essential to prevent unraveling and electrical shorting. During installation of a multi-pair cable, each pair is bent, twisted and routed around the cabinet to termination points. Shields and tapes can unwrap and expose the inner twisted pairs. In addition to being messy, unraveled shields can short-circuit before the intended grounding point—causing loss of electrical shielding or potentially introducing new electrical noise. Previous time-consuming and costly solutions to combat this problem have included taping or heat-shrink tubing.



Before: Loose foils, unprotected pairs, shielding compromised.

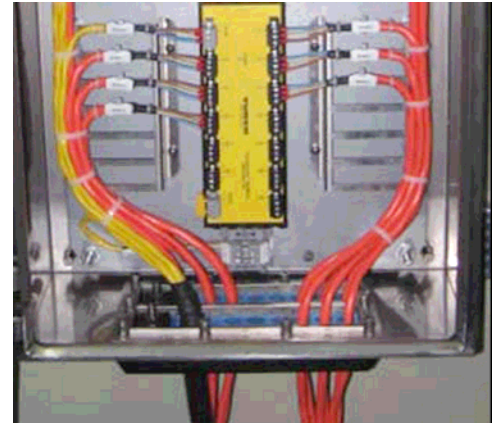


Before: Shielding removed from pairs eliminating shielding, insulated conductors exposed.



An EZ Solution

An improved way to keep the shields intact, separated and insulated from each other, is to use a cable like DataCELL FOUNDATION fieldbus M-EZ cable from Northwire. This cable features a thin, flame-resistant, insulating, extruded PVC binder over the individually shielded pairs. The extruded PVC binder over the pairs eliminates unraveled and exposed shields—preventing the potential for shield connection to other pairs within the multi-pair cable or at any point in the plant. This means significantly quicker installation, saving time and labor costs. DataCELL FOUNDATION fieldbus M-EZ cable is UL-listed, ITC-ER (instrumentation tray cable exposed-run) /PLTC-ER (power-limited tray cable exposed-run) and CSA approved as well as FF-844 certified. This certification assures that the cable is electrically precise and meets FOUNDATION fieldbus cable physical property requirements.



After: Pairs protected, shielding integrity maintained.

More than Fieldbus

Other industrial networks, with protocols such as Profibus® PA, HART® and standard distributed control systems (DCS) also use shielded twisted pairs. Northwire also offers easy marshaling cable solutions for these and other platforms.

Northwire, Inc., based in Osceola, Wis., is an industry leader in the design and manufacture of industrial-grade technical cable. Custom design choices include paired, non-paired, triads, various shielding and grounding options, special insulation options, plus a large variety of conductor and jacket colors. Northwire has manufacturing facilities in Wisconsin and New Mexico, USA, with sales offices in Jiangsu Province, China; and The Netherlands. Northwire is a member of the RIA (Robotics Industries Association), AIA (Automated Imaging Association), EMVA (European Machine Vision Association), JIIA (Japan Industrial Imaging Association), CMES (Chinese Mechanical Engineering Society), Fieldbus Foundation, ODVA (Open DeviceNet Vendor Association), PTO (Profibus Trade Organization) and MCAA (Measurement Control and Automation Association), among others.

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