Connectivity Questions to Ask Before Your Next Install

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There are a lot of things to consider when designing an automated system, like space (location and environment), power and tooling. Often times, components considered with less importance, like cordsets and connectors, are left on the back burner until the higher priority items are designed and installed. But consider this: including these items early in the design process helps create a better system, saves cost and improves machine efficiency. For instance, knowing the connectivity requirements needed for an application's specifications early in the process will help lessen wiring errors and connection issues later in design implementation. This will also help determine which cables are best suited per application and location.

There are a few overarching subjects relating to connectivity that can be considered with minimal time and effort on the front end of design that can significantly reduce time and effort later in implementation. Broadly, these include what type of cable to use and where that cable will be used.

Cable/cordset evaluation

» **Connection components**
Do you need straight or right angle connectors? Nickel-plated brass or stainless steel connectors? Armored or flexible cables? What will the cables be connected to and how? What size threads and pins does the cable/connector require? Are terminators necessary, and if so, where and how many?

» **Diagnostics**
Does your application require the transfer of data or power? Cables and cordsets are rated for the amount of voltage and current they can carry. It is good practice to troubleshoot the minimum/maximum current that will be traveling over the cable when determining cable usage.

» **Esthetics**
LEDs can aid in error identification and lessen the time it takes to fix problems and get back online. Color coding wires and special labeling also ease installation time and helps reduce errors.

Location and environment evaluation

» **Environment**
Does the environment require welding, high-flex robotics, cut/abrasion immunity, RFI/EMI shielding? Does it require washdowns or sanitary/hygienic conditions? Numerous industrial environments require IP protection ratings for dust and water exposure. Cordsets and connectors are rated for IP protection, as well as NEMA rated for indoor/outdoor usability.

» **Approvals**
Numerous industrial and process environments require approvals from various agencies like the NEC, UL or CSA. Likewise, cables are approved by these bodies for use in said locations.

There are many other cable/connector design considerations, like molding customer supplied connectors, adding a private label or custom harnesses and cable assemblies. Obviously, not all cable manufacturers provide the same product; some offer cables with more flexibility, resistance to cuts/abrasion or to extreme temperature. Most cordset manufacturers will be able to assist you in choosing the cable/connector best suited for your application, and will do so with no obligation.