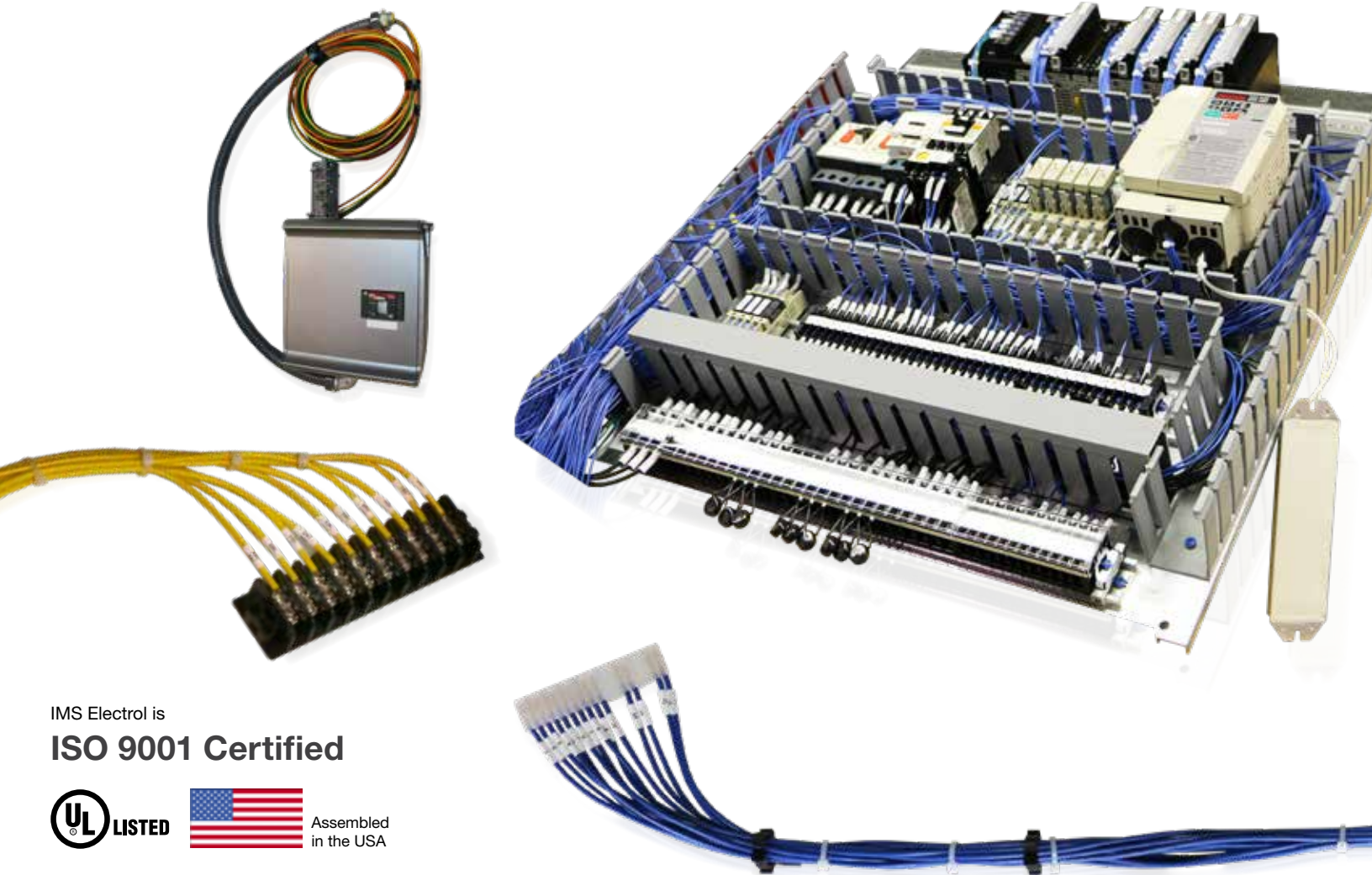


IMS Electrol

INNOVATIVE MANUFACTURING SOLUTIONS



IMS Electrol is
ISO 9001 Certified



Assembled
in the USA

About IMS Electrol

Electrol was established in 1961, initially as a panel builder for large medical equipment. The company expanded into cable and harness assemblies throughout the 1960s, compelling Electrol to move to a larger facility in Nashotah, Wisconsin in the early 1970s. The company continued to expand its capabilities and customer base through strategic investments and moved to its current location in Hartland, Wisconsin in 1995. Electrol was acquired by IMS Companies in 1998. IMS is a diversified group of companies with the size, scale and reach necessary to provide innovative solutions for its customers through custom manufacturing and development of proprietary products. IMS serves a wide array of industries including the appliance, automotive, commercial vehicle, communications, consumer electronics, medical and various industrial markets. For more information, visit www.imsmfg.com.

Quality

World-class quality at Electrol starts with a workforce that is dedicated to total customer satisfaction. Delivering high-quality products when the customer wants them is the core of Electrol's quality system and is accomplished through:

Employee Continuing Education

- Education and testing of all production personnel to IPC/WHMA-A-620
- Education and testing on Lean and Six Sigma principles

Process Control

- Robust first-article processes assure the highest quality product from new product development stages through production
- Custom assembly and test boards are built in-house for each assembly
- Labeling, barcoding, special packaging and traceability identification

Testing and Inspection

- Incoming inspection on all purchased materials (Electrol uses UL certified and RoHS compliant components)

- Manufacturing inspection (first-piece, hourly in process and last-piece inspections)
- Testing of electronic systems including: continuity, short, Hi-Pot and component tests on Cablesan, Slaughter and HiPotronics equipment
- All products manufactured are 100% continuity tested
- Testing of mechanical systems including: pull force, bend tests and pin and socket insertion
- Testing for fiber optic cable loss on Advanced Fiber Solutions equipment

Certifications

- ISO 9001:2015 registration from Underwriters Laboratories, since 1996
- UL and CSA certifications
- Multiple customer certifications



Engineering

Design for Manufacturability – DFM

Starting when the first drawings are presented to Electrol, our mechanical and electrical engineers are looking for ways to drive out waste from the process. Our engineers' extensive knowledge of available wire/cable types and components help our customer obtain their cost and lead time requirements without reducing the product functionality or quality. Since 95% of manufacturing cost is set once the design is complete, Electrol can help you make component choices in the design phase to limit future warranty, service and cost issues. Technical data and samples are presented to the customer with each DFM suggestion. Electrol provides on-site engineering and assembly support at the customer's location.

Forward Engineering

The specific requirements of each customer typically require a unique wire and cable assembly. Electrol's engineers coordinate internal resources to each customer's project and dedicate personnel responsible for building one-of-a-kind wire/cable prototypes quickly. Once the prototypes are approved by the customer, Electrol uses a systematic process to release the products into volume production.

Electrol utilizes engineering software formats including: AutoCAD, Pro-E and Solidworks.

Re-Engineering

Electrol engineers can quickly duplicate a product without the aid of drawings, documentation or computer model. Electrol can quickly assess the feasibility of re-engineering an existing product, ultimately saving customers time and effort. Electrol's re-engineering process includes:

Identifying the product's components and their interrelationships

Creating representations of the product in another form that reduces costs (both component and manufacturing techniques)

Rapidly prototyping the new product design

Customer determines the feasibility of the new product design and approves

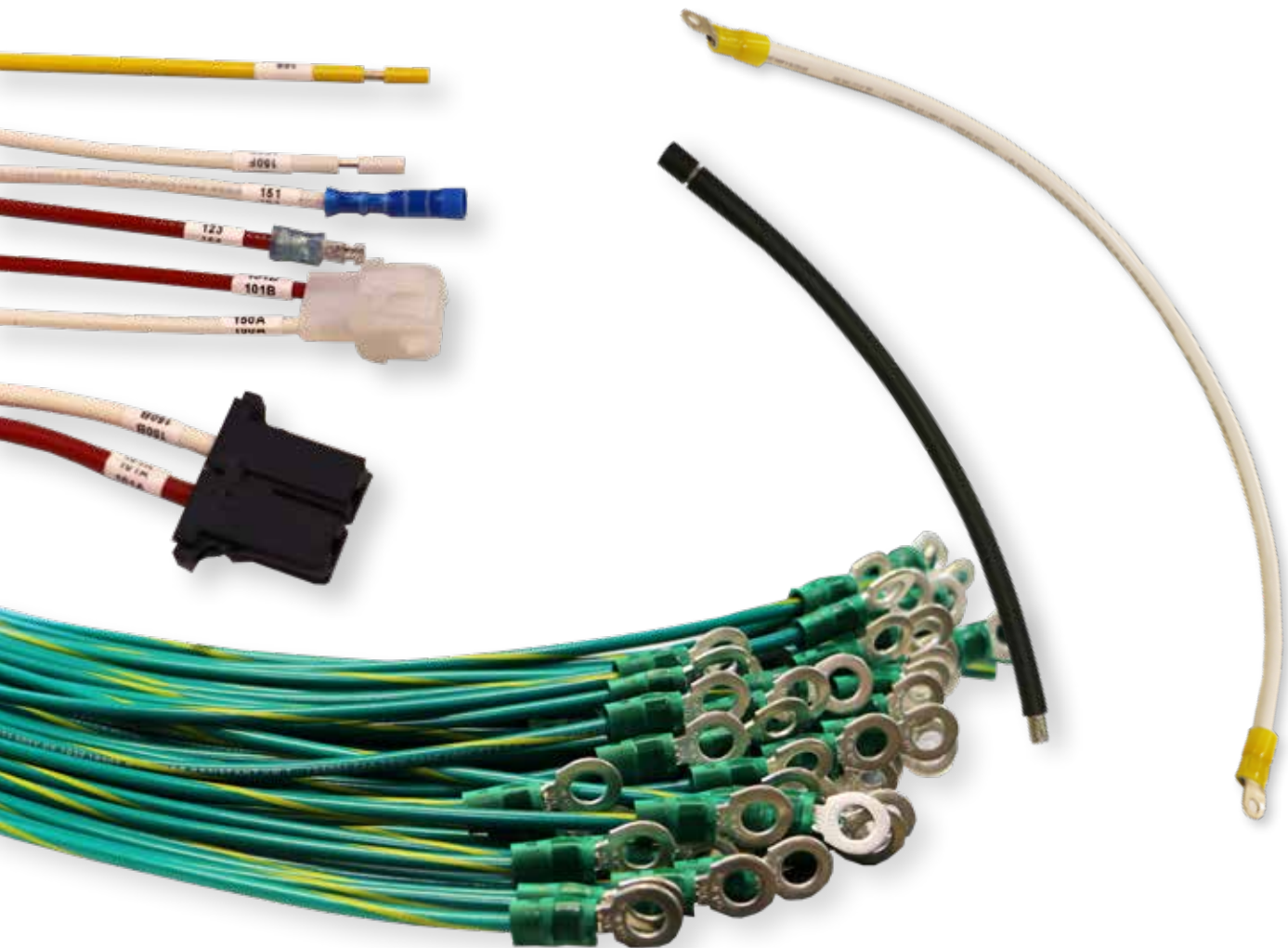
Drawings are created and the process detailed in forward-engineering section is completed

Electrol's ability to reverse engineer a design can sometimes greatly reduce the amount of time required to develop the perfect product configuration.

Inventory Management Programs

Electrol offers a variety of inventory management programs to mitigate risk of stock outs due to uncertainties in demand and to reduce lead times. Electrol can develop custom inventory programs to fulfill a customer's specific needs, reducing customer costs, lead times and inventory levels. These inventory programs include:

- Raw material stocking programs located at Electrol or partner suppliers
- Finish goods stocking programs located at Electrol or customers' site
- Kanban replenishment systems throughout the supply chain
- Supplier managed inventory programs at a customer's site, point-of-use delivery by an Electrol associate and auto replenishment via the Electrol web-based ordering system

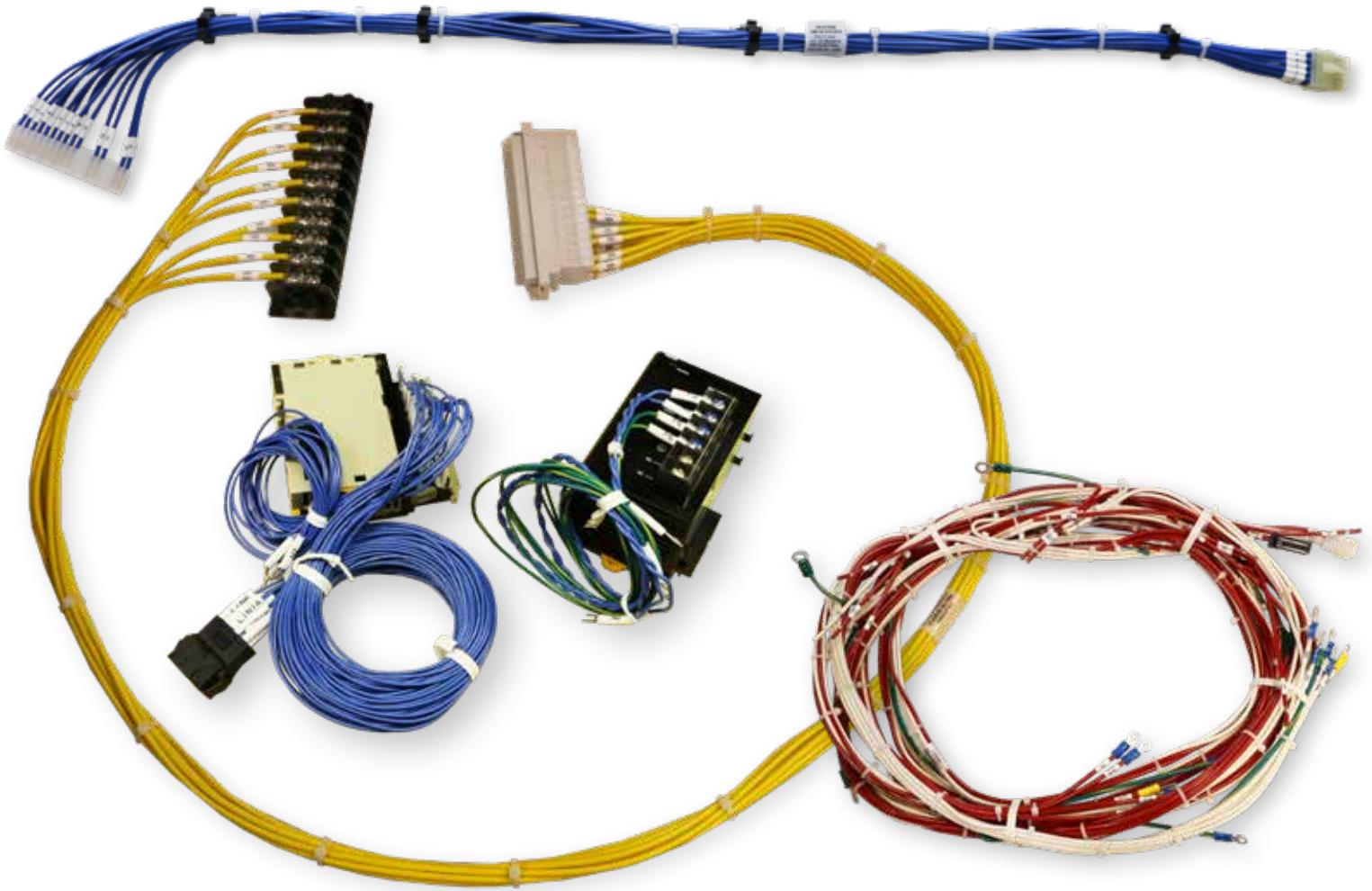


Discrete Wires

Electrol uses automated, high-speed cutting, stripping and crimping equipment to handle almost any type of wire or cable. These automated processes improve process repeatability and increase the overall quality of our discrete wires. Simple or complex, standard or custom, our highly trained staff is prepared to meet your requirements.

Capabilities

- Stocking of UL/CSA-certified wire and cable
- Automated cut, strip and component application to customer specification
- In-process crimp inspection
- In-process wire marking: Laser printing, hot stamp or label
- Partial strip wire ends, retaining insulation
- Automated wire processing equipment includes Komax, Schleuniger, Kodera, Artos and Carpenter
- Tube cutting and blunt cutting available
- Kitting and assemblies



Wire Harnesses

Electrol's lean approach to engineering and manufacturing of wire harnesses drives out waste from the process. All processes are controlled through the use of technical documentation, visual assembly instructions and assembly boards, ensuring reduced costs and shorter lead times. Trained employees, efficient work cells and an array of high-speed automated wire processing equipment enables Electrol to manufacture wire harnesses of any complexity. Our knowledge of materials, tooling and process flow enable us to offer our clients high quality harnesses at a competitive cost. No wire harness or cable requirement is too small or too large for our capabilities. Harnesses and cables are 100% tested in our ISO 9001 and UL certified manufacturing facility.

Capabilities

- Multi-Conductor cabling, both high and low density
- Insulation Displacement Connections (IDC), including flat cable and discrete wire
- Crimp-and-poke connectors
- Multiple connection methods
- Automated connector processing equipment includes AMP, T&B, JST, Hirose, Molex and Panduit
- Flexible cellular operations allow for efficient manufacturing of low-volume, highly complex wire harnesses

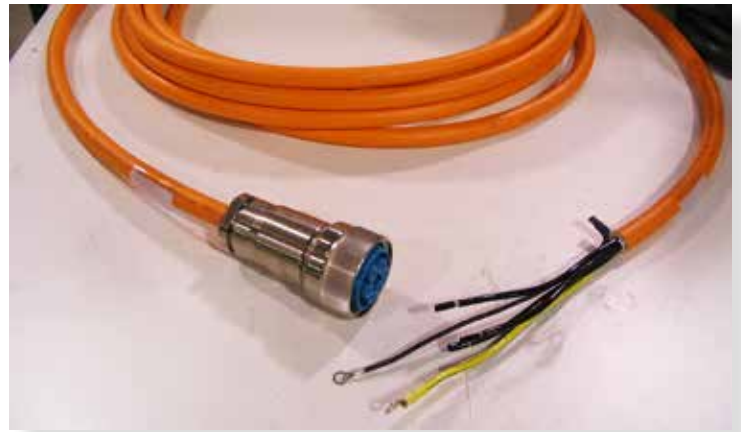


Electro-mechanical

Electrol is a full-service, engineering-driven company with the size, scale and financial resources to partner with OEMs in providing complete outsourced manufacturing services. Electrol offers turn-key customer solutions for electro-mechanical assembly and testing, small box builds and large control panels. We provide sourcing and procurement of all components including printed circuit board assemblies, metal fabrications, machined parts and plastic moldings. Utilizing flexible cellular operations allow for efficient manufacturing of low-volume, highly complex electro-mechanical assemblies.

Capabilities

- Assisting in the design for manufacturability process to reduce cost
- Providing Kanban/consigned inventory programs to reduce the customer's total cost of ownership (TCO) and involvement
- Developing technical documentation, visual assembly instructions and assembly/test fixtures
- Offering soldered cable assemblies, interfacing to connectors, circuit boards (ESD area) and components
- Providing manufacturing capabilities to modify transformers, motors, switches and electro-mechanical components to customer specifications
- Providing well-developed custom kitting capabilities

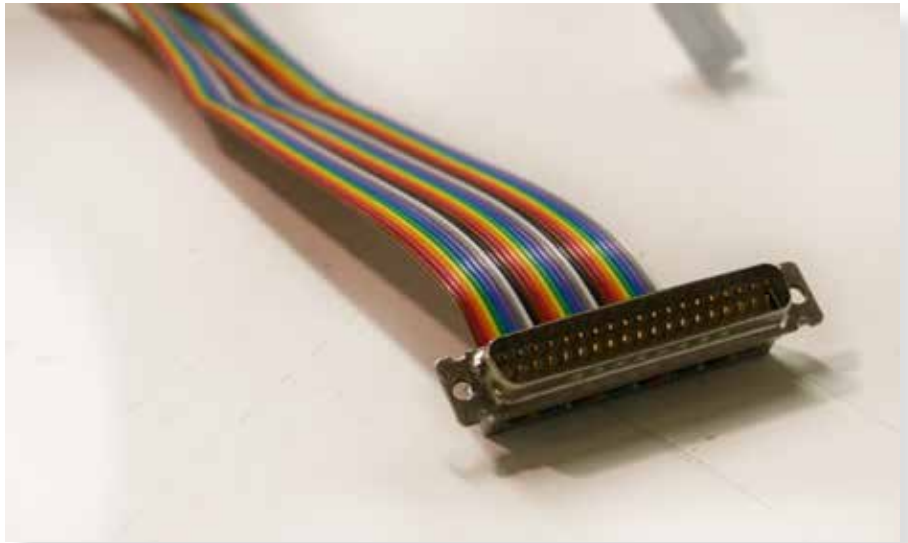


Industrial Cables

Electrol offers design assistance and has robust manufacturing capabilities to produce industrial cable assemblies. Trained employees and proper tooling for crimping of lugs on Industrial cables is performed daily.

Capabilities

- Mil-spec cables with sealed connectors (Amphenol)
- Power cables with high-power circular connectors (Siemens)
- Power cables as large as 750 MCM
- Formed power cables
- Multi-conductor cables with mixed power/signal
- Battery cables
- Overmolded power cords that are stripped/terminated per customer
- Automated wire processing equipment includes Artos, AMP, T&B and Panduit

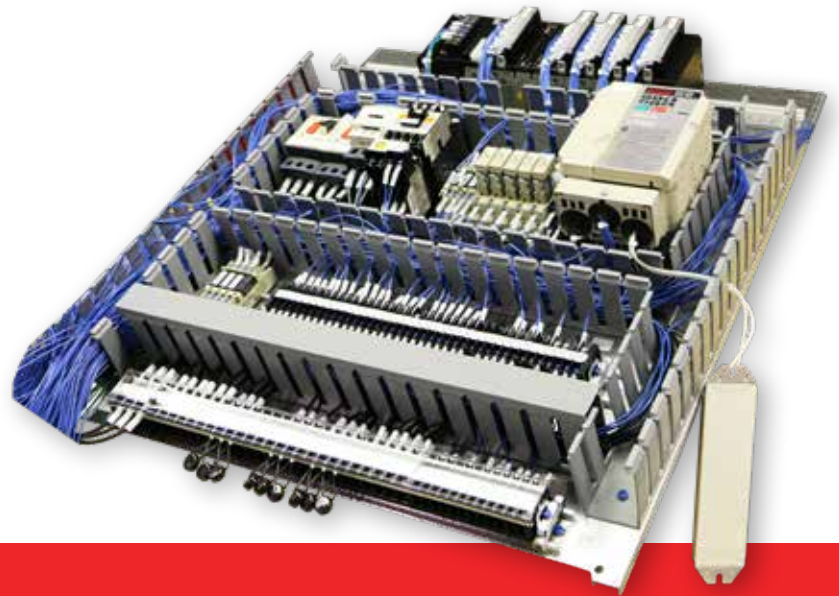
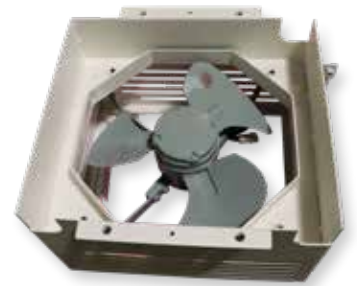
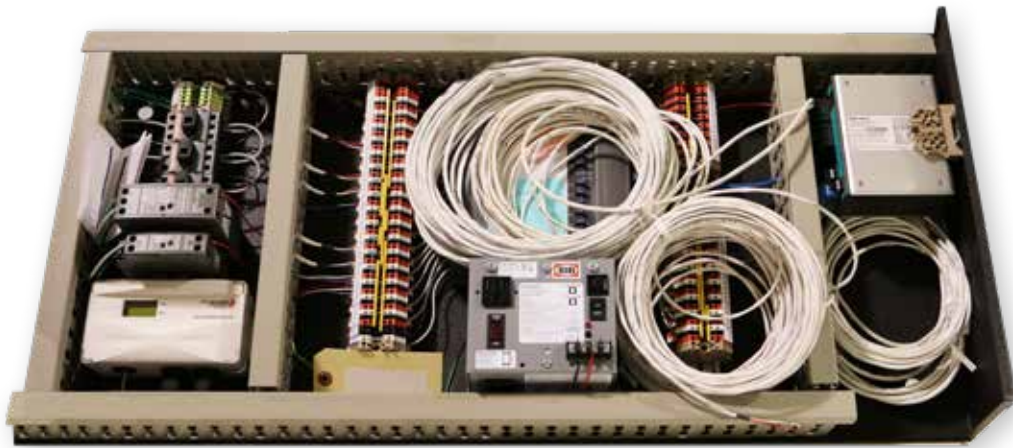


Data Communication

Electrol has the capabilities to manufacture custom data/communication cables working with a wide array of electrical jacketed cables built unshielded or multi-shielded to a customer's precise needs.

Capabilities

- Fiber optic cable assemblies
- Ribbon cable assembly, jacketed and shielded, color coded and split wires
- RF and coaxial cable assemblies
- Sub-D cable assemblies
- Communication cable assemblies
- Twisted pair cable assemblies components to customer specifications
- Providing well-developed custom kitting capabilities



Industrial Control Panels (ICP)

In 1961 Electrol was established as a panel builder for large medical equipment. Today, Electrol builds everything from simple start / stop push-button panels to large complex control panels and systems. Electrol is a vertically integrated manufacturer of ICP's with wire processing, labeling, sub-assemblies and wire harnesses all manufactured under one roof, incorporated into our final configured Industrial Control Panels. All ICP's are fully tested and ready for installation upon shipment.

Markets Served

- Aggregate/ Agriculture Industry
- Automation
- Cellular Communications
- CNC Machines
- Contract Manufacturing
- Control Panel Design
- Conveyor Systems
- Food & Beverage
- Industrial
- Injection Molding Machines
- Machine Tool
- Medical Equipment
- Military
- Power Generation
- Sub-assemblies
- Water / Wastewater
- UL 508A Listed for Panel Builds

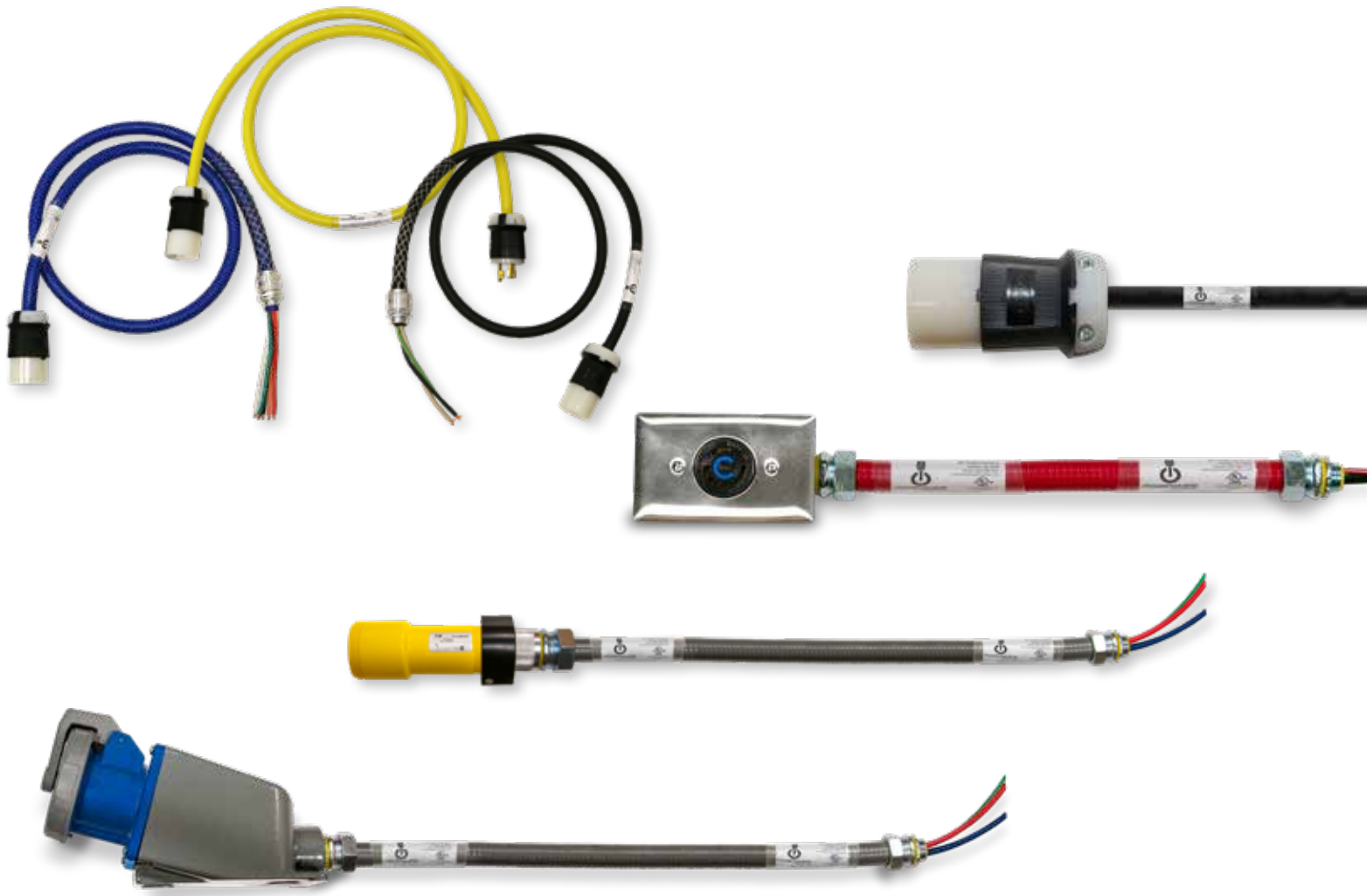


Prefab Electrical Assemblies

In 2013 Electrol began to manufacture PowerWhips™ that were used in data centers across the US. Since 2013 Electrol has expanded in the Prefab Electrical assemblies area per customer requests. We now manufacture products made from Liguatight/ Sealtight (LFMC); Greenfield/ Flexible conduit; MC and Armored cable.

Capabilities

- PowerWhips™
- SOOW Powerwhips (top fed)
- Field whips any configuration required.
- Network Drops / Electrical Drops
- Bus bar drops
- Electrification in lockers
- Electrification of Display boards
- Electrification for tables / furniture
- Custom wiring applications



PowerWhips™

PowerWhips by Electrol uses only the highest quality components available – everything from Hubbell to Electri-Flex to RepublicWire. Whip lengths to any specification are available as well. Our PowerWhips are UL listed and are tested in-house to ensure the highest quality, reliability and performance. Testing includes dielectric strength, ground continuity, phase rotation and insulation resistance.

Features

- 11 Colors of Liquid tight Conduit Available
- 99% of orders ship in 1-3 days
- Custom labeling – 3 labels per whip
- Mounting kits and circuit breakers available
- Engineering Support
- Online Configurator
- Painted Boxes and Covers
- Air Flow Management
- Custom Packaging



IMS Electrol is
ISO 9001 Certified



Assembled
in the USA

IMS Electrol

INNOVATIVE MANUFACTURING SOLUTIONS

Headquarters:
16575 West Small Road
New Berlin, WI 53151
Phone: (262) 966-3741

Mexico Location:
Monterrey, Mexico
Calle Energia #303
Parque Industrial La Silla Apodaca
Apodaca N.L., MX 66600
Phone: 011-52-811-156-6900

www.electrolmfg.com