



Pushing Performance

HARTING Value Added Business



People | Power | Partnership



Pushing Performance



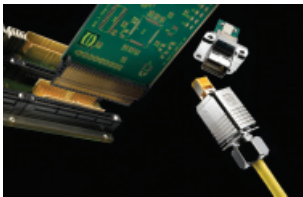
HARTING Technology Group

From our central location in North America, HARTING Value Added Business (VAB) supplies cable and harness assemblies, with additional cable assembly facilities in the United Kingdom, China, Germany, and Romania.



Installation Technology

Han® connectors are the worldwide connector standard in industry. Han® connectors impress with their rugged design, convenient handling and modularity of data, signal and power connections. Worldwide.



Device Connectivity

HARTING's *har-* Device Connectivity technology is a universal and innovative product portfolio of board connector and connection technology for devices in the IP 20 to IP 65 / IP 67 protection categories.



Smart Network Infrastructure

With its product series Ha-VIS, HARTING offers a consistent range of Ethernet network components and cabling products, which from the communication platform of convergent automation IT networks. Under Ha-VIS HARTING offers fully integrated RFID solutions.

VAB Solutions Lower Customers' Costs

HARTING's VAB operations share the company's long-standing reputation as a global leader in connectorization. VAB brings together the installation and connectivity expertise of HARTING's Technology Group to produce custom-designed cable, wire harness, and related solutions. This synergism creates innovative and highly efficient operations, resulting in cost savings for our customers when they outsource cable and wire harness assemblies to HARTING.

Customer benefits in purchasing pre-manufactured assemblies include:

- Lower Overall Cost
- Reduced Installation Time
- Minimizing Field Wiring Errors
- Lower Inventory Expense
- No Tooling Investment
- 100% Tested Assemblies
- Simpler Manufacturing Planning.

Our Value Chain of Services

Integration of Application, Connectivity & Installation Expertise

Front-to-Back Development & Production of Cable & Harness Solutions

Proactive Value Engineering to Reduce Finished Assembly Cost

Automated Production Using HARTING & Third-Party Components

Prototyping, First Article Approval, Short & Long Production Runs

All-inclusive Electrical Testing & Visual Inspections

Comprehensive Supply Chain Management

Deep Inventory to Support Customer Delivery Needs

Efficient Warehousing and Logistic Services



HARTING's newest connector technology, the Han-Yellock® combines a unique push-button-locking technology with a sleek design

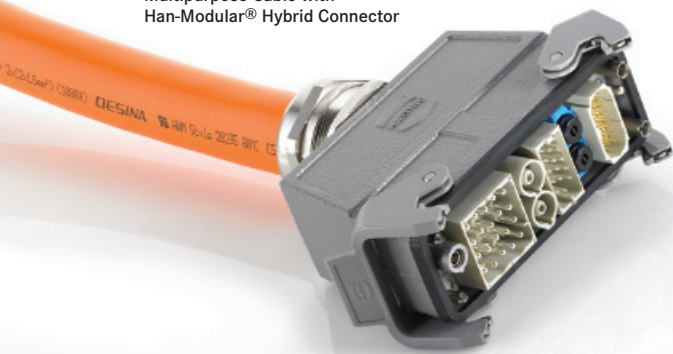
Manufacturing cells provide efficient assembly for both short-run and high-volume production



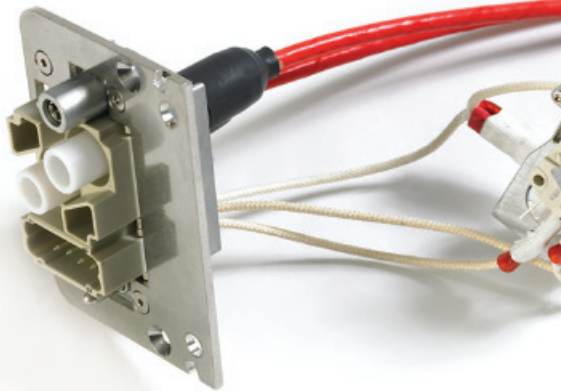
Industrial Solutions Our Specialty

We engineer and produce cable and harness assemblies to carry power, control signals, embedded processor I/O, Ethernet communications, data pulses, and any combination thereof. Our capabilities span the range from short assemblies for electrical enclosures to 300-foot long multipurpose cables for wind turbine down-tower applications. These assemblies can include hybrid connectors, mounting brackets, exotic insulation, flexible conduit, or simply pigtail leads.

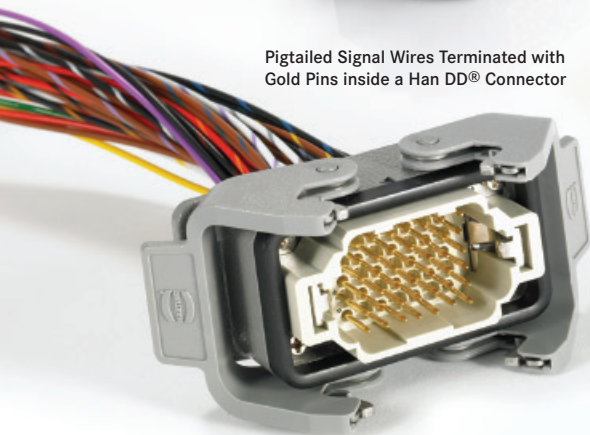
Multipurpose Cable with Han-Modular® Hybrid Connector



High Voltage Cable and Bracket Assembly with Teflon® Insulation



Pigtailed Signal Wires Terminated with Gold Pins inside a Han DD® Connector



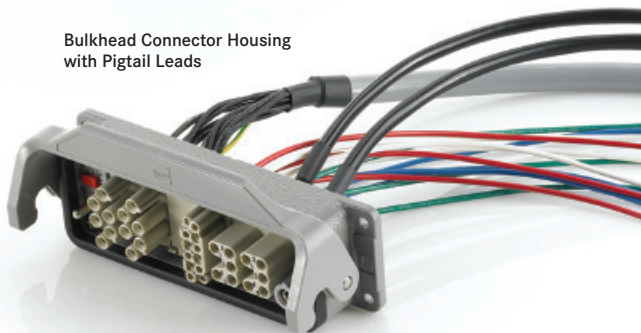
High-Density Han® Connector with PVC-Coated Flexible Metal Conduit



Han® HPR hood with fiber and Ethernet communication



Bulkhead Connector Housing with Pigtail Leads



Production of cables used in rail trackside signaling and control systems.





I/O Assemblies

One of the HARTING VAB specialties is unique I/O cable assemblies, such as those with D-Sub connectors sized for 9 to 78 pins and a variety of connection arrangements.

Many other I/O connector types can be used, including those that are EMC qualified, with IP 65, 67 and 68 ratings, and accommodating a wide range of wire gauges.

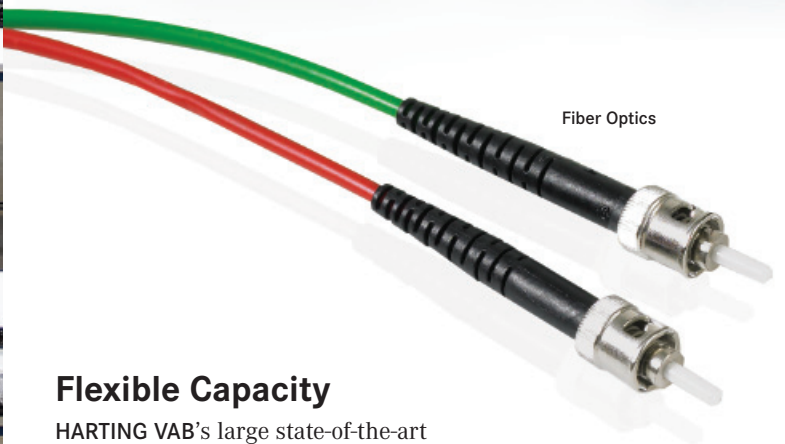
IP 67 D-Sub used with cable assemblies for dust and water protection



Customized D-Sub solution with jumpered connector pins, plus mixed power and signal leads



Fiber Optics



Flexible Capacity

HARTING VAB's large state-of-the-art facility and production equipment can adapt to your special I/O assembly and production needs. We provide quick-turn prototype production, and have the depth to handle long production runs for high-volume orders.

Engineering to Inspection

Quality Assurance and Continuous Improvement

HARTING VAB's QA team constantly monitors and improves processes throughout our facilities to achieve zero-defect products. The inputs to this discipline are data from in-process QC, including 100% visual inspections and electrical testing for such things as opens, shorts, continuity, insulation breakdown, and special customer-specified tests.

Continuity and high potential tester



Visual inspection



Han-Modular® Control Assembly

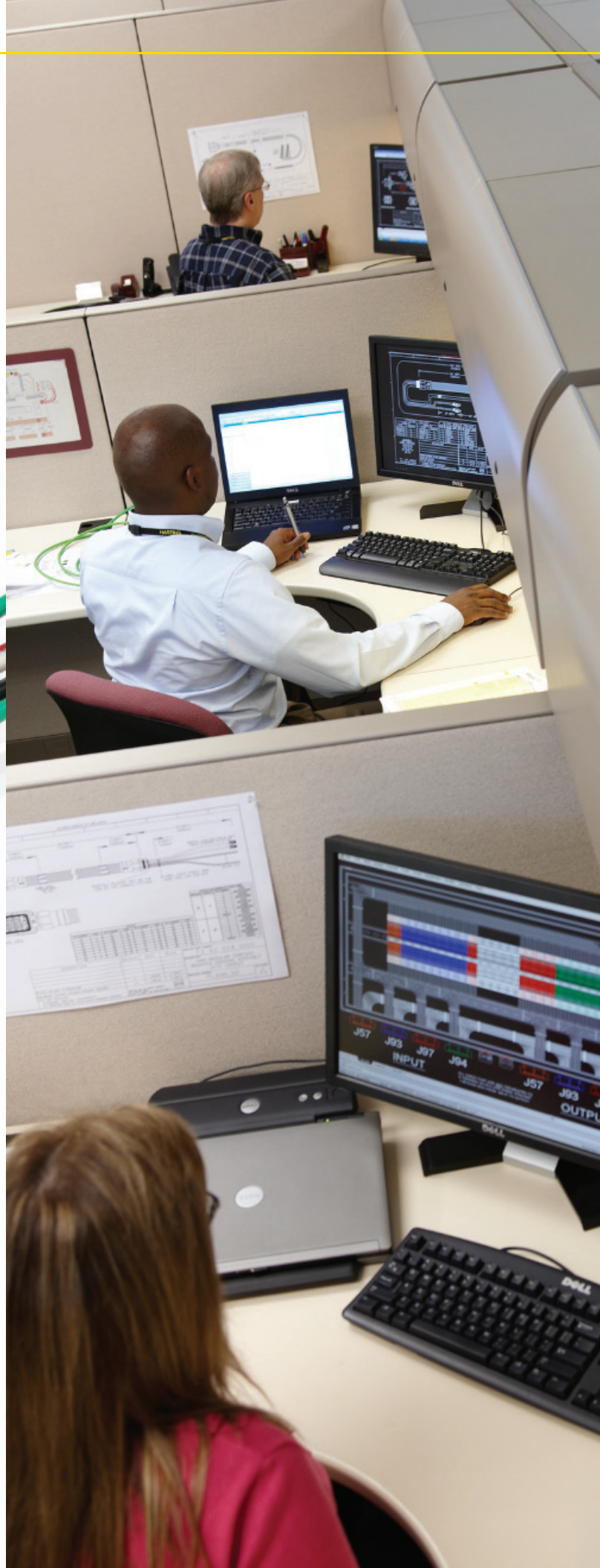
Engineering Capabilities

Full service engineering at HARTING VAB supports our customers with everything from free-hand concept sketches to fully documented engineering drawings and bills of material. We work from customer specifications and drawings or if necessary will create AutoCAD® production drawings for full documentation.

VAB also offers the following value added engineering services:

- Field application support
- Cost reduction engineering
- Reverse engineering.

Combined with our broad experience in connector engineering and applications, this allows us to supply the best solution for unique customer needs. In short, we're an extension of our customers' own engineering departments.



Production Capabilities & Support

HARTING employs a wide array of resources to make timely deliveries of cable and harness assemblies with zero defects. This requires tight management of our supply chain as well as manufacturing with our own automated production equipment. These resources are supported with HARTING's global SAP business management system. This SAP system seamlessly links all of HARTING's global operations, allowing us to utilize the full scale of company resources to support VAB customers wherever they are located.

Cost Saving Production Tools

HARTING VAB makes extensive use of automated equipment to minimize cost and increase reliability. These machines can reduce labor content by as much as 80-90% compared to manual methods of measuring, cutting, stripping, crimping, labeling, coiling, and packaging. Many of these machines are produced by HARTING's Applied Technologies Division.

Certifications

HARTING VAB's ISO 9001:2008 facilities are inspected regularly to ensure our processes and products comply with the requirements of pertinent industry standards, which include:

- UL: Our Elgin, IL manufacturing location is certified as a UL-approved cable assembly production facility. We maintain this approval with regular UL inspections by UL
- ITAR (International Traffic in Arms Regulations)
- IPC/WHMA-A-620: We maintain a staff of IPC620 certified operators
- RoHS.



Association Connecting Electronics Industries

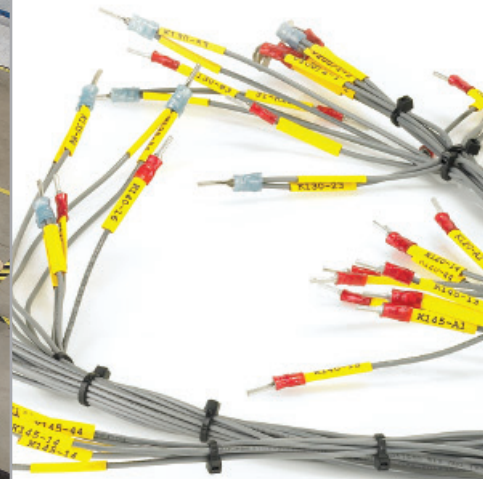


Programmable insulation strip/crimp machine handles many types of cable



Market & Application

Regardless of your pre-wired cable or harness need, HARTING can supply one for any type of industrial application, across a wide range of markets, including factory automation, machinery, energy, transportation and broadcast entertainment.



Programmable insulation stripping machine handles many types of wire



Automation machinery measures cuts to length, de-jackets, and coils cable at a specific station

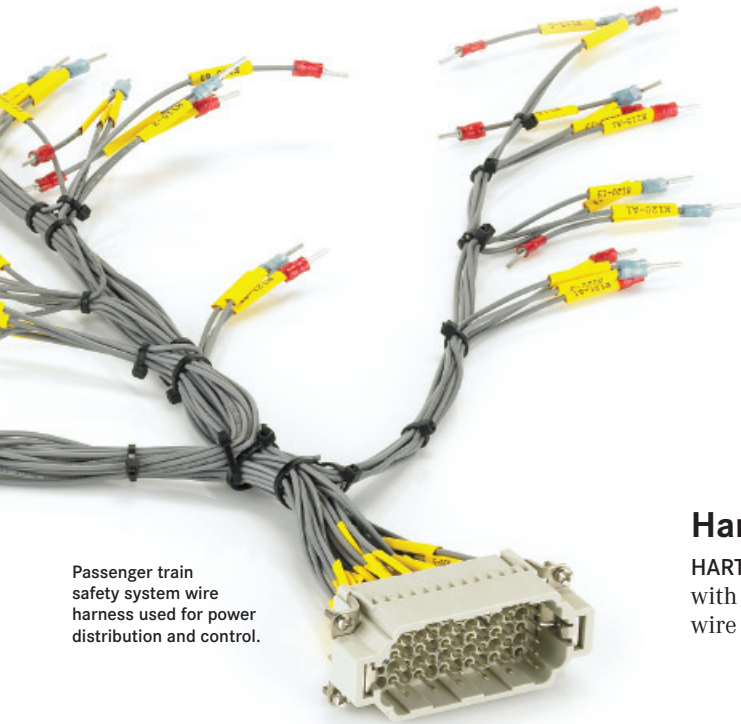


Automated strip and crimp ferrule installation

Ethernet Cable Assemblies

HARTING VAB manufactures a variety of Ethernet cable assemblies. These custom-designed assemblies utilize HARTING's hybrid connector technologies and our value-added assembly capabilities. We supply assemblies that incorporate technologies such as:

- RJ45 connectors
- M12 Ethernet connections
- 4-wire and 8-wire cables
- Cat. 5 to Gbit Ethernet
- Power connections
- Ruggedized housings
- HARTING and non-HARTING components



Passenger train safety system wire harness used for power distribution and control.



RJ45 Ethernet connector/cable assembly in an IP 20 housing

RJ45 Ethernet assembly with an IP 67 outdoor rated PushPull connector



Hybrid Ethernet/Power connector with outdoor rated cable

Cat. 6, 8-wire M12 Ethernet cable assembly

Harness Assemblies

HARTING VAB manufactures cable-tied harnesses with precise fan-out dimensions, plus customized wire terminations and labeling.

Logistics, Packaging, & Warehouse

Material handling, assembly packaging, inventory control, and timely deliveries are integral parts of HARTING's SAP-managed logistics. VAB engineers can create a custom solution to protect an assembly during shipment and facilitate installation at its destination.

On-Site Inventory

HARTING's financial strength, which allows us to carry a deep inventory of wiring, cables, and connectors. This inventory is tailored to our customers' needs, so it minimizes their own inventories, and shortens delivery lead times. Local inventory gives us tremendous purchasing power that helps control component costs.



HARTING on-site inventory includes wire, cable, and connectors



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