Products for Medical Device Manufacturers
AMP

Axicom

CII

Crompton Small Motors

Elo TouchSystems

Hartman

Kilovac

M/A-Com

Madison Cable

MID

OEG

P&B

Precision Interconnect

Raychem
In the operating suite, doctor’s office or at the bedside, medical equipment resides in unique environments. Diagnostic, treatment and monitoring devices have critical power and signal requirements. Components must be durable, rugged and always reliable.

Tyco Electronics understands the vital connections that dependably deliver images, data and power. From antennas to Z-series filters, Tyco Electronics components...batteries, cable, connectors, contacts, displays, filters, motors, heat shrink, labels, molded parts, relays, passive components, printed circuits, sensors, tubing, touchmonitors, wireless devices...assemblies and capabilities provide the innovative electronics that medical device OEMs require for their mission critical products.

And if the solution doesn’t already exist, Tyco Electronics engineers take on the challenge—providing parts, packaging and program solutions for the next generation of medical equipment.
Hand-held cable assemblies

Cable assemblies that connect hand-held devices to diagnostic, surgical or monitoring equipment must supply unique electrical, mechanical and environmental qualities.

On ultrasound transducers, video arthoscopes, surgical instruments and patient monitors, Precision Interconnect cable assemblies are built on a history of solutions for hand-held requirements.

Patient Comfort
The pull of a cable against the skin, a tug on the bed clothes...caregivers know how little things can be uncomfortable for patients. Low profile, custom molded components; lightweight, flexible cables; and soft-touch and low friction surfaces add value understood by the end-user.

Ergonomics
The ideal hand-held medical device is light, comfortable and easy to handle. Size, weight and flexibility are part of a well designed cable assembly.
assemblies for hand-held medical devices.

**Sterilization**

Whether destined for use in the O.R., treatment room or clinic, cable assemblies must be suitable for appropriate disinfection and/or sterilization procedures. Depending on the application, materials and seals are selected to be compatible with EtO, autoclave, low temperature cycles (such as STERIS and STERRAD), CIDEX soaks or IPA wipe down.

**Durability**

Nicked by scalpels...rolled over by gurneys... twisted and torqued...cable assemblies in the hospital or clinic must be resilient and reliable. Tough, yet flexible cable jackets, molded components and connector hardware are designed to withstand this demanding environment.

**Electrical requirements**

Data for critical care decisions cannot be compromised. Designing for the application, Tyco Electronics engineers understand high noise environments, RFI/EMI compliance, high voltage devices, capacitance/impedance consistency and tight tolerances on electrical characteristics.

**Economics**

In the world of medical devices, single-use and limited-use components need to be as thoughtfully designed and manufactured as reusable products. With proper design, material selection and manufacturing around the globe, disposable and limited reuse assemblies are fully engineered and efficiently manufactured.
Engineered for medical equipment...

Tyco Electronics connectors designed for medical applications provide the densities, durability and options desired by equipment designers and equipment users.

Plastic or metal round connectors are available in a variety of shell sizes, pin counts and configurations—including contacts for combined power and signal applications. Keying, polarization, sealing capability and molded strain reliefs are features selectable within specific families. Some families are compatible with existing interfaces. Mating receptacles suitable for panel mount are available for most families. Some connectors are terminated to cable and furnished as a complete assembly.

Satisfy unique requirements with connectors, cables and options too numerous to mention.
The power, data and signal connection...
It all begins with cable from Tyco Electronics brands like Madison Cable, Precision Interconnect and Raychem. A wide range of cable configurations are used to move scanners, video surgeries, power scalpels and transmit vital signs on imaging, treatment and monitoring equipment.

Madison Cable composite cables provide power and control to MRI, x-ray and other imaging equipment. Combinations of coaxes, singles and twisted pairs are cabled to suit a variety of non-invasive medical applications including imaging, monitoring and power distribution.

Flexible yet rugged, lightweight and flame retardant Raychem SPEC 44 and SPEC 55 cables are suited to the challenging environments of medical equipment. Both products are also available as multi-conductor, shielded, jacketed cables.

Some applications require very small cables. Intracoronary and intravascular imaging devices present the ultimate in micro-packaging challenges. Precision Interconnect cables use signal conductors as small as 50 AWG in insulated singles, coaxes or twisted pairs. Other Precision Interconnect cables include multiconductor coaxial, composites and hybrids for imaging, surgical and monitoring devices.

Satisfy unique requirements with connectors, cables and options too numerous to mention.
Leveraging its experience in connector manufacture, Tyco Electronics meets packaging and functionality challenges with AMP stamped and formed blades, holders (and many, many other possibilities) as well as custom contacts to meet specific demands. Integrated MID components of thermoplastic and conductive materials can reduce package size and improve functionality by combining features into a single device.

Pair a single-use cable with overmolded housing and strain relief and an AMP D-sub assembly with custom receptacle to create an efficient system of disposable SiO₂ sensors and reusable SiO₂ trunk cables for a monitoring application.

Size, durability and compatibility with cleaning solutions are important issues when connecting a temperature probe to its hand-held unit. This turnkey solution involves thermoplastic over-molding, spring pin contacts, printed circuitry and a sealed header.

With its materials, design and manufacturing experience and facilities, Tyco Electronics goes beyond the standard in providing product innovations and custom solutions.
The key to reliability is the right connection.

As a vertically integrated manufacturer, Tyco Electronics matches the right cable, the right connector, and the right standard to connect monitors, instruments and foot switches to their controlling devices.

**AMP** Subminiature D cable assemblies with shielded cable and AMPLIMITE connectors—the industry’s most extensive and versatile—support a variety of data protocols.

Tyco Electronics produces a wide range of **AMP** standard cable assemblies for connecting devices including USB, FIREWIRE, DVI, SCSI Ultra, PC Card, SATA, Ethernet, coaxial and fiber optic.

With its extensive engineering resources, cable and connector manufacturing expertise and global manufacturing facilities, Tyco Electronics can adapt, modify or create a custom cable assembly for current and next generation box-to-box interconnects.

Data integrity, image reliability—make the connection with Tyco Electronics cable assemblies.

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**Peripheral interconnects**

Every cable interconnect must support unique electrical, programming and mechanical requirements—whether signal speed, shielding, contact density, keying, latching or appearance.
Tyco Electronics puts it all together to meet the mechanical, electrical, EMI and environmental challenges faced by medical equipment designers.

With innovative components, global capabilities and a customer-driven approach to wiring solutions, Tyco Electronics provides complete connector and harness design and production. Modeling, prototyping and testing services are available.

**AMP** board-to-board, card-edge, backplane, wire-to-board connectors and IC sockets provide configurations for connecting virtually any circuit or device.

Many components create a custom wire harness.

AMP M Series pin and socket connectors
One-piece AMP PCB Connectors
Modular AMPMODU contacts, headers and assemblies

AMP MTA header and pre-loaded connectors
Raychem heat shrinkable tubing provides exceptional insulation, mechanical protection and strain relief. Used in splicing, breakouts and identification, heat shrink products are available in many forms, various shrink ratios and custom configurations.

AMP and Madison Cable flat ribbon and flat, multi-pair, highly flexible cables are low profile, easy routing connections suitable for a variety of low voltage requirements.

Precision Interconnect BLUE RIBBON micro coax cables for board-to-board data bus connections can be terminated to a variety of hardware including AMP MICTOR connectors, AMP CHAMP connectors and .100 headers.

Supplying the part or the whole, Tyco Electronics understands the components and the connections for crucial circuitry.
Tyco Electronics is one of the largest producers of printed circuits in the world. Production of PCBs (2 through 68 layers), flex and rigid flex circuits, bonded heat sink assemblies, backplane assemblies, sub and full-system assembly is supported by engineering services from concept through modeling, assurance, integration and test.

Raychem Circuit Protection markets a complete line of Polyswitch resettable devices, Sibar thyristor surge protectors, ROV metal oxide varistors and protected power switches as well as magnetic components from CoEv Magnetics.

Raychem identification products include a variety of stock as well as hardware, software and technical support.

Custom labels can be partially printed with logos and graphics for finishing at customer sites using printing systems also available from Tyco Electronics.
systems from antennas to Z series filters.

...Tyco Electronics has the most electronics including...

...capacitors, inductors, resistors, transformers and other devices...

...virtually any type of switch. Alcoswitch products also include knobs, boot, caps and other accessories...

...a wide range of sensors including pulse wire, PLCD, position, rotational and touch sensors...

...and relays, timers and contactors by Axicom, CII, Hartman, Kilovac, OEG, and P&B, as well as Tyco Electronics with options for enclosure, termination, input, contact arrangement and rating.

Power line filters, specifically developed for health care applications, are available in a variety of current ratings and case styles.

For small pump or compressor applications, products from the Crompton Electronic Motors line fit where space is at a premium.
Simplify complex technology with user-friendly interfaces.

In patient monitoring, information systems and education applications, Elo TouchSystems touchscreens and touchmonitors provide an efficient, responsive data entry mechanism, help reduce the chance of errors and allow the clinician to focus on the patient. Medical touchscreens are completely sealable, and can be activated by rubber gloves, fingertips and pens. Custom adaptations and solutions are available.

Tyco touch control technology sensors are robust, solid-state-based touch controls available on keypads or electronic control systems built to customer specifications. Tyco Electronics turnkey design and manufacture of PCBs, connectors, cable assemblies and power switching components (including relays, contactors, transformers and circuit breakers) creates a touch interface adaptable to any dielectric material suitable for harsh environments. Key sizes and graphics are designed per customer specifications.

Custom printed overlays provide durable and sealable identification for electronics devices. Screen-printed control panels, fascias and membrane switches are manufactured from a broad selection of materials with gloss or textured finishes, in various thicknesses and with adhesive backing if desired.

Custom graphics and touch technology create user-friendly interfaces and keep the focus on the patient instead of the equipment.
Tyco Electronics provides solutions with devices for signal transmission, battery power and connecting components.

**M/A-COM** discrete and integrated products deliver breakthrough performance with RF components, handsets and antennas. **M/A-COM** devices can be combined into single and multi-function components for cost-effective, high volume solutions.

**Elastomeric** connectors form a compression surface-to-surface connection enabling economical, high density, high reliability connections in space constrained, hand-held electronic products. Custom solutions incorporating holders or seals can be provided.

**Tyco Electronics** supplies power within the constraints of small form-factor portable devices. With either lithium ion, nickel cadmium or nickel metal hydride batteries, **Tyco Electronics** can design custom battery packs that increase functionality while reducing size, weight and cost.

When the design requirements call for portability, Tyco Electronics components and systems connect the care to the patient.