ELECTRO-MECHANICAL SOLUTIONS

- CONNECTORS
- CASES
- HEATSINKS
- HARNESS PRODUCTION
- CABLES & CABLE PROCESSING SYSTEMS

WWW.MICRODIS.NET
with over 25 years of experience in sales of electromechanical components, Microdis Electronics provides customers with deep knowledge and application support.

In-house harness production for small and medium projects allows us to support our partners with customised solutions fitted just to their needs.

We also fulfill the needs of our customers concerning the equipment needed for harness production.
LEAR CORPORATION TERMINALS & CONNECTORS

Lear’s product portfolio includes standard and custom terminal & connector systems, with capability ranging from signal to high power. Lear experience in integrating terminal & connector solutions throughout the vehicle’s electrical distribution system allows for maximum reliability while reducing cost.

Lear’s capabilities cover the complete value chain— from advanced research and development, through tooling construction, to extensive manufacturing expertise, allowing Lear to shorten the product and process development cycle.

From patents filed to finished product, Lear continues to commit its resources to the development of the industry’s most technically advanced terminals & connectors. Lear’s focus remains on developing and manufacturing high performance, ultra-compact, cost-effective systems, engineered for optimal performance anywhere in the vehicle.

SAVOY TECHNOLOGY

Savoy Technology is the specialist stamping company of the multi-national group Savoy International. In operation since 1961, Savoy Technology is a supplier of high quality and high performance connectors for automotive market and industries.

Savoy Technology designs, produces and supplies the complete range of connectors and hundreds of other special assembly parts.

With more than 45 years in skill design, manufacturing and stamping of innovating electrical connectors, Savoy Technology is an significant supplier for the automotive market.

Savoy Technology designs and manufactures a multitude of products ranging from the most basic to the most complex electrical connectors, like hermaphrodite sliding terminals with the highest level of quality.

JAPAN SOLDERLESS TERMINALS - JST

J.S.T is one of the worlds largest manufacturers of electrical and electronic connectors. The first products were loose piece terminals, which were introduced into the market in 1957.

Today, JST is a manufacturer of the most reliable, most technologically advanced and cost-efficient electromechanical components.
FISCHER CONNECTORS

Fischer Connectors has been designing, manufacturing and distributing high performance connectors and cable assembly solutions for 60 years. Fischer Connectors connectors are known for their reliability, precision and resistance to demanding and harsh environments. Fischer Connectors’ products are commonly used in fields requiring faultless quality, such as: medical equipment, industrial instrumentation, measuring and testing devices, broadcast, telecommunication and defence. Primary design and manufacturing facilities are located in Saint-Prex, Switzerland.

EXPERTISE
GUIDING YOU FROM CONCEPT TO DELIVERY
- Sustainable supply chain efficiency
- Performance via lean manufacturing
- Process control & continuous improvement

RELIABILITY
GETTING YOU WHERE YOU WANT TO BE
- Products: delivering quality over time
- Service: ensuring on-time deliveries
- Support: responding quickly to your requests

INNOVATION
HELPING YOU WORK SMARTER
- Technology that speeds up production & delivery
- Solutions that help you overcome your challenges
- Customer-first approach that saves you time & money

SOLVING CHALLENGES - AS UNIQUE AS YOU ARE
Turning your connectivity challenges into success stories:
- Miniaturization & weight reduction
- Data transmission: more & faster
- Extreme sealing & hermeticity
- Complete solutions (connectors & cable assemblies)

A PIONEER IN CONNECTOR TECHNOLOGY
Fischer Connectors has been keeping the spirit of innovation alive for over sixty years. Breakthrough technologies, high quality products and laser-focused customer culture has helped customers design reliable, innovate products and achieve business goals.

COMPLETE SOLUTIONS, ENGINEERING SUPPORT, RAPID DELIVERY
- Vertically integrated solutions (connectors, components, cables and assembly)
- Expertise in design, manufacture & test assemblies
- Fast prototyping & production
- High quality guaranteed in low & high volume projects

CHOOSE FROM MORE THAN 30,000 CONFIGURATIONS THEN SELECT THE CABLE YOU NEED FOR YOUR APPLICATION
To date, Fischer Connectors has placed expertise with more than 30,000 references across five product families:
## FISCHER SERIES

### FISCHER CORE SERIES
- **Any size**
- **Any configuration**
- **Any application**
  - Fully configurable to fulfill each of your needs
  - High sealing performances for vacuum & underwater applications
  - High temperature & chemical resistance
  - Connectors and / or cable solutions

### FISCHER ULTIMATE™ SERIES
- **Rugged**
- **Compact**
- **Lightweight**
  - IP68 up to 120m / IP69 / Hermetic
  - 360 degree EMC shielding
  - High corrosion resistance
  - 10,000 mating cycles

### FISCHER FIBEROPTIC SERIES
- **Robust**
- **High Performance**
- **Easy Cleaning**
  - Faultless optic performance
  - Indoor, outdoor & extreme applications
  - Up to IP67 (unmated) / IP68 (mated)
  - Easy field cleaning

### FISCHER MINIMAX™ SERIES
- **Miniature**
- **Lightweight**
  - Designed and tested for high-speed protocols
  - IP68 watertight down to 20m

### FISCHER FREEDOM™ SERIES
- **Easy Mating**
- **Easy Cleaning**
- **Easy Integration**
  - Breakthrough plug & use connectivity
  - 360-degree mating freedom & optimized cable management
  - Non-magnetic ball locking with variable force
  - IP68 sealed to -20m/24h
  - Low profile, right-angled plug

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### Locking

<table>
<thead>
<tr>
<th>Shell material</th>
<th>Plug Ø [mm]</th>
<th>Number of contacts</th>
<th>Contact type</th>
<th>Test voltage DC [kV]</th>
<th>Current rating [A]</th>
<th>Contact termination</th>
<th>Sealing level</th>
<th>Mating cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium / Plated brass</td>
<td>9-34</td>
<td>1 to 55</td>
<td>Low voltage / High voltage</td>
<td>Up to 50</td>
<td>Up to 60</td>
<td>Crimp / Solder / PCB</td>
<td>IP68/69 / Hermetic</td>
<td>10,000</td>
</tr>
<tr>
<td>Brass / Aluminum</td>
<td>12-29</td>
<td>2 to 42</td>
<td>Low voltage</td>
<td>Up to 2.5</td>
<td>Up to 9.2</td>
<td>Crimp / Solder / PCB</td>
<td>IP68/69 / Hermetic</td>
<td>10,000</td>
</tr>
<tr>
<td>Brass</td>
<td>24</td>
<td>1 to 4 fibers / Hybrid 2+2</td>
<td>Fiber optic / Low voltage</td>
<td>Up to 2.8</td>
<td>Up to 10</td>
<td>Solder</td>
<td>IP67/68</td>
<td>1,000</td>
</tr>
<tr>
<td>Brass / PEEK</td>
<td>12.9</td>
<td>4 to 24</td>
<td>Low voltage</td>
<td>Up to 1.5</td>
<td>Up to 5.0</td>
<td>Solder / PCB</td>
<td>IP68</td>
<td>5,000</td>
</tr>
</tbody>
</table>
CABLE PROCESSING SYSTEMS

MECAL Srl - Italian company, established in 1976, with the aim of supplying the wire harness industry with the best crimping equipment. Their leading products like applicators and presses are extensively used by the automotive, communication and IT industry, and wherever a high quality connection is needed.

MECAL’S CRIMPING MACHINES PORTFOLIO

- Mechanical applicators for crimping of reeled terminals with cross-sections up to 25 mm²
- Dies for crimping of loose terminals up to 75 mm²
- Special applicators for crimping of IDC-rast connectors (pin by pin)
- 4 Points Crimp Applicator, designed to crimp loose End Sleeve (Tube) Terminals up to 25 mm²
- Electromechanical presses with a crimping force: 1.5 - 20 T
- Production process analyzers - CFA
- Pull force measurement devices
- Mini laboratories for micrography

PROFESSIONAL HAND TOOLS

WEZAG, German company, founded in 1949. One of the worldwide leading manufacturers of hand tools.

- Separately delivered and terminal dedicated dies: C510 system for crimping various types of contacts / terminals and universal handles. Possible to use the same dies with WDT machines for crimping in half automatic cycles.

PNEUMATIC PRESSES

Swiss WDT company (owned by WEZAG) is a strong supplier of pneumatic solutions for crimping of big cross section loose lugs. WDT-presses with or without special adapters can work together with the same WEZAG-dies that are dedicated to CS or CK systems.

- UP150 - pneumatic press
  - Hydraulic press with crimping force = 150kN
  - Max. cross-section of wires: 400 mm²
  - Built-in analyzer of the production process (CFA)
  - Adjustable crimping height

HARNESS PRODUCTION

IN-HOUSE PRODUCTION OF HARNESS

based on all typical connectors in the full (with continuous control of crimping parameters CFA) and half – automatic process

- Pull force measurement
- Processing of FBL / FFC flat cables with IDC connectors and electronic quality control
- Application of IDC connectors with single-core cables in the half automatic process
- Crimping of insulated and uninsulated connectors
- Processing of multi-wire signal cables (stripping, crimping, tinning) - up to OD = 6.0 mm
- Soldering of cables to the PCBs
- Tinning of wires (automatic or manual)
- Shrinking of heat shrink sleeves
- Assembling
Since 1987 the designated target of MEDI - Kabelhandels GmbH is to supply customers with cables and wires at the highest quality level. The company's aim is to provide solutions for all requirements, with business and technical advice as well as training from development to serial production.

With partners worldwide, MEDI-Kabel can satisfy customers’ needs and requirements with competence and effectiveness. The manufacturer is capable of offering a wide range of products in wide temperature-ranges, mechanical and electrical requirements as well as different approvals (VDE, HAR, UL, CSA, MIL etc.). A modern high-level rack with 1500 pallets capacity and more than 5000 cable and wire types available enables MEDI-Kabel to cover most of customers’ requirements in short time, even special customized cables with small minimum order quantities.

INTERCONNECTING WIRES AND FLEXIBLE LEADS
- Insulation: PVC/PE/TPE/Silicone/PP/PA Tefzel/Teflon/PUR/Glass filament/EVA etc.
- Temperature range: -200 to 1200 °C halogen-free/free flame resistant/lead free
- VDE/UL/CSA/MIL approvals, DIN standards
- Single, multiple, fine, ultra-fine wire / single, double, triple coloured

FLAT CIRCULAR CONDUCTORS
- UL / CSA approval

DATA AND COMMUNICATION TECHNOLOGY
- Optical fiber technology (patch cable / connection technology)
- Optical fiber cables
- Plug-in connectors and systems
- Splice boxes
- Trunk cables
- Copper wiring systems

RIBBON CABLES AND TWIN CONDUCTORS
- All grid sizes / single & multi coloured
- Solid or flexible – screened

DATA AND CONTROL CABLES, POWER CABLES
- Screened / unscreened
- Insulation: PVC/PE/PUR/Silicone/Teflon
- Approvals: UL/CSA/MIL/VDE
- Customer-specific manufacture from 500m

ACCESSORIES
- Spiral cables (from 1 cable)
- Shrink tubing
- Insulation tubing
- Cable testing systems
- Cable protection systems

XTRA CABLES FOR INTERNATIONAL USE

Xtra BASIC
This standard cable is suitable for systems and equipment which have been designed for export.

Xtra ECO
A halogen-free single core with UL/cUL and HAR approval. Suitable for most industrialized countries of the world and immediately stocked as standard.

Xtra HEAT
A high temperature resistant cable in VDE quality. Available immediately with UL/cUL approval at no extra charge.
PLASTIC ENCLOSURES

PERFORMANCE ENGINEERED ENCLOSURES

CamdenBoss has over 440 designs, sizes and styles of enclosures to satisfy today's competitive market, where functionality, price, aesthetics and ergonomics are all driving demands. In addition to extensive range of standard injection moulded, die-cast and sheet-metal enclosures, Camdenboss has manufacturing and assembly facilities enabling offering bespoke designed Tool-Free Custom-Design enclosures from flat-sheet plastic, full customisation of standard ranges and complete turnkey enclosure and assembly solutions.

PRODUCTS
- Universal enclosures
- Heavy duty enclosures
- Interface supports
- Diecast & metal boxes
- Potting boxes
- 19" subracks
- Hand held cases
- Din-Rail boxes
- Control stations
- Desktop & instrument cases
- 19" enclosures

CUSTOM DESIGNED ENCLOSURES

Custom Enclosures with Flat-Sheet Plastic Technology - No Tooling!

CamdenBoss develops and manufactures enclosures to your specifications using Flat Sheet Plastic Technology. Combining years of engineering expertise, precision machining & innovative assembly techniques; any concept can be manufactured to your exact size and specification. CamdenBoss unique is ideally suited for low to medium batch quantities - from the most simple to the most complex of enclosures.

Advantages:
- Rapid Lead Times
  - 1 - 3 weeks prototyping
  - 3 - 4 weeks volume productions
- Creative - industrial designers, technical sales & CAD/CAM engineers at your disposal
- Inexpensive - No Tooling Charge
- Low design and set-up costs
- Competitive unit pricing
- Any Quantities
  - From low batch runs of 5 to high volume 5000+ production runs
- Flexible - make changes to the design quickly & easily after prototyping or after production

CUSTOMIZATION CAPABILITIES

- Machining: milling, drilling, cutting and countersinking etc.
- Surface coating and RFI shielding
- Printing and engraving
- Materials: bespoke colours, material types and flammability
ALUMINIUM ENCLOSURES AND HEATSINKS

CASES
- Miniature aluminium cases
- Design cases
- Combination cases
- Tube cases
- Desk consoles and shell cases
- 19" System cases
- 19" Subracks
- 19" Plug-in boxes
- 19" Insert modules

THERMAL MANAGEMENT
- Machined extruded heatsinks
- Extruded heatsinks with solder pin
- Heatsinks and fan coolers for processors
- Lamella heatsinks
- Finger shaped and small heatsinks
- Cooling aggregates
- Thermal interface materials

SERVICES

Precision Machining
Fischer Elektronik offers a wide range of processing options, especially for decorative applications. All standard cooling heatsinks and cases and also special front and cover plates can be manufactured to suit customers’ requirements in terms of decorative design. CNC machining centres and automatic machines are used to ensure optimum processing quality. Components receive mechanical surface treatment in preparation for anodizing or galvanic coating such as chromium or gold, consisting of sandblasting, grinding and polishing.

Powder Coating
For the safe use of electronic casings under difficult ambient conditions where anodized or painted casing surfaces are no longer sufficient, first-class surface coating is required. In addition to its standard product range, Fischer Elektronik offers robust and invulnerable powder coatings. In addition to colour and structural options for individual surface designs, powder coatings offer excellent resistance to scratches, abrasion and shocks and provide outstanding protection against corrosion and chemicals as well as good electrical insulation. Other important features include a long service life, highlight fastness and a base material which is environmentally friendly, as the powder contains neither heavy metals nor solvents.

Screen printing & Laser lettering
For optical identification of milling Fischer use screen printing or YAG-lasers. Especially laser inscriptions are of outstanding quality and ensure good, permanent legibility, even in the case of letter sizes below 1mm and under the influence of solvents.
CABLING SOLUTIONS FOR
Networks

CABLING SOLUTIONS IN THE COPPER AND FIBER OPTIC
TECHNIQUES FOR BUILDING AND INDUSTRIAL CABLING
APPLICATIONS

The growing demand for data transmission volumes requires
an ever stronger performance and continuity of underlying
data networks. Today, IT-technologies are used in a multitude
of applications in buildings, data centers and industrial
plants. Anticipatory and intelligent cabling systems that
spanningly connect several segments must therefore match
perfectly in order to guarantee a sustainable, safe and
continuous form of communications.

All this is guaranteed by the Metz Connect range of P|Cabling
products: Highly specialized, internationally standardized
and high-performance connection components in copper
and fiber optic technology stand out by their quality and
strong system compatibility.

BUILDING AND INDUSTRIAL
CABLING, DATA
COMMUNICATION
- Office fiber optic
- Office RJ45
- Industry fiber optic
- Industry RJ45
- Ethernet M12
- Industry unequipped housings
- Data center solutions
- Assembled cables
- Accessories

TERMINAL BLOCKS

SPRING CLAMP TERMINAL BLOCKS
- Solderable
- Pluggable
- Compression-mount
- For solid wires and multi-stranded wires
- Nominal cross section of 0.08 - 2.5 mm²
- Centerline 2.5 - 10mm

SCREW-TYPE TERMINAL BLOCKS
- Solderable
- Pluggable
- Single poles
- For solid wires and multi-stranded wires
- Centerline 3.5 - 10.16 mm

IDC TYPE TERMINAL BLOCKS
- Solderable
- Centerline 3.5 - 10.16 mm

ADVANTAGES
- Solderable
- Complete range for different installation requirements
- A variety of connecting technologies
- Additional product designs (operating options, mounting
  flanges etc.)
- Solutions for different connection cross-sections
- Color variants at customer request
- Varying number of poles
- Codeability
- Customer-specific adaptations possible
PCB LEVEL CONNECTORS

**GCT**
Global Connector Technology

**SIM card connectors**
- Hinged
- Push-push
- Retainer
- Dual SIM

**FFC connectors & cables**
- 0.3, 0.5, 1.0 mm pitch
- Side or top entry
- Top or bottom contact
- Side or flip lock

**Memory SD & uSD card connectors**
- Hinged
- Push-push
- Push-pull

**USB 2.0 & 3.0 connectors**
- USB C
- Micro USB
- Mini USB
- Full size USB
- A, B, AB types

**Modular Jack connectors**
- 4-8 positions
- 4-8 positions loaded
- Right angle or vertical
- THT or SMD style

**Board-to-board connectors**
- 0.8, 1.0, 1.27, 2.0, 2.54 mm pitch
- Headers, elevated headers, sockets, elevated sockets
- Horizontal, parallel, perpendicular
- THT or SMD style

**DC Power Jacks**
- THT and SMD
- 0.65 mm, 2.00 mm, 2.35 mm & 2.50 mm center pin diameters
- Current ratings from 1.5 A to 8.0 A
- Shielded variations in both straight and right angle orientation

**Miscellaneous Connectors**
- PCB connectors - male and female headers, contact strips
- IDC connectors male & female headers, one & two rows
- D-SUB connectors
- DIL, PGA, PLCC, transistor sockets
- Flat ribbon cables

**Board to Board Connectors**
- Centerline 1.27, 2.00, 2.54 mm
- SMD & THT

**RJ45 & RJ11, RJ12 Jacks**
- THT & SMD versions
- Shielded & unshielded
- Single & multiport
- With integrated magnetics and/or LED indicators

**USB Jacks**
- THT & SMD versions
- Type A, B & microB

**M12 Jacks**
- D coded or X coded types
- 4 or 8 pins
- THT or panel mounted
- Sealing level up to IP68
Currently the Microdis Group employs over 100 people, with a large number of electronic engineers, mostly involved in sales and application support. As a company with an extensive experience in the distribution of electronic components, and a purchasing center in Germany for many years, we are able to offer almost any product from a wide variety of electronic components. We offer also the production of cable harnesses and programming of crystal oscillators for a customised frequency. Cooperation with a catalogue distributor provides fast deliveries (2 days) of a wide range of catalogue products. We have certificates of quality management DIN EN ISO 9001:2015 for the distribution of electronic components.