



# INDUSTRIAL DIVISION

INTERCONNECTION SOLUTIONS

CONNECTORS / ACCESSORIES AND TOOLS  
/ ASSEMBLY



SCP Sintersa is a joint venture that combines experience and a strong competitive drive to guarantee the success of every project we are involved in. Our constant pursuit of innovation and product development has led us to satisfy thousands of customers, meet their exigent demands and gain their trust.





More than 400 projects  
in **42** countries



# INDEX

## INDUSTRIAL DIVISION

About us .....	Page 04
Divisions .....	Page 06
Connectors .....	Page 09
Accessories and Tools .....	Page 27
Connectors & Harnesses Assembly .....	Page 39

## About Us

We are a joint-venture conformed by **SCP** (Suministros de Conectores Profesionales S.A.) and **SINTERSA** (Sistemas de Interconexión S.A.).

**SCP Sintersa** is an **ALA** company, becoming the largest European provider of high-performance systems of electrical interconnection.

We design, manufacture, and supply components as well as subsystems for electrical/electronic interconnection systems for professional applications in harsh environments.

We have a range of services and products developed specifically to solve your electrical interconnections needs.



With the required certifications and experience to design, manufacture and produce components and interconnection electrical systems, our companies processes, and divisions are submitted to the most demanding quality controls available, to offer the best products and services on the market.

### QUALITY SYSTEM

UNE-EN ISO 9001 — Quality Management System.  
UNE-EN 9100 — Aerospace and Defence Requirements.  
AQAP/PECAL 2110 — Military Requirements.  
NATO CAGE — 267BB / 1199B.  
IPC — IPC/WHMA-A-620.





More than  
**35 years**  
experience.



**6.000 m<sup>2</sup>**



More than  
**200**  
employees.



## MAIN CUSTOMERS

THALES

ALSTOM

BOMBARDIER

CAF



HITACHI

renfe

SIEMENS

STADLER



FAGOR



CIRCONTROL  
Mobility & eMobility

Gamesa



Ingeteam

KNORR-BREMSE

AIRBUS  
DEFENCE & SPACE

BOEING

Indra

SENER  
The way to see the future

TECNOBIT

GENERAL DYNAMICS

LEONARDO

Navantia



## INDUSTRIAL DIVISION



Connectors for power up to 1500A and data transmission.  
Data transmission through copper and optical fiber.  
Cable strip and crimp tools.  
DC contactors.  
Cable glands, fittings, expandable sleeve, and corrugated tubing.  
Heat-shrinkable material and wire marking system.  
Electrical vehicle power connectors.



## AERONAUTICAL AND MILITARY DIVISION



A wide selection of military connectors (MIL-C-5015, MIL-DTL-26482, MIL-DTL-38999 Series I-II-III...).

Filtered, hermetic, weather-resistant, and coax connectors.

Halogen-free high-temperature MIL cables.

Heat-shrinkable components.

Connection tool kit.

Connector accessories (plugs, backshells...).

Technical Fiber Optic.

Military Relays.

Sealed and conductive couplings.

Identification systems.

Crimp and cut tools.

EMI/RFI shielding.

Design and documentation of sealed cable harnesses.

Manufacture of harnesses and boxes subject to PECAL 2110.

Certified by Airbus Space and Defense as well as Boeing for the manufacture of Aeronautical wire harness.

Laser cable marking.

On-Aircraft continuity and shield testing.

Connections and finishing on Aircraft mounted harnesses.

EMI protection and shielding.

Waterproofing and isolation testing.

## ▶ RENEWABLE ENERGIES



Interconnection solutions for electrical vehicles.  
DC Power contactors.  
Design and manufacture complete interconnection solutions:

- Power, signal and data harnesses.
- Interconnection boxes.
- Fiber optic cables.



## ▶ RAILWAY MARKET



Power and control wiring.  
Customized master controllers and driver desks.  
Supply of professional connectors, tools, and operating accessories.  
Supply of customizable electrical hoses and cables.  
Custom engineering development.  
Microswitches and end of line terminations.  
I+D Engineering.  
Electrical interconnection technical consulting.  
Manufacture of wiring and electromechanical subsystems.  
Crimp tool repair and calibration.  
Maintenance, overhaul, and modernization of rail systems.



## ▶ BROADCAST

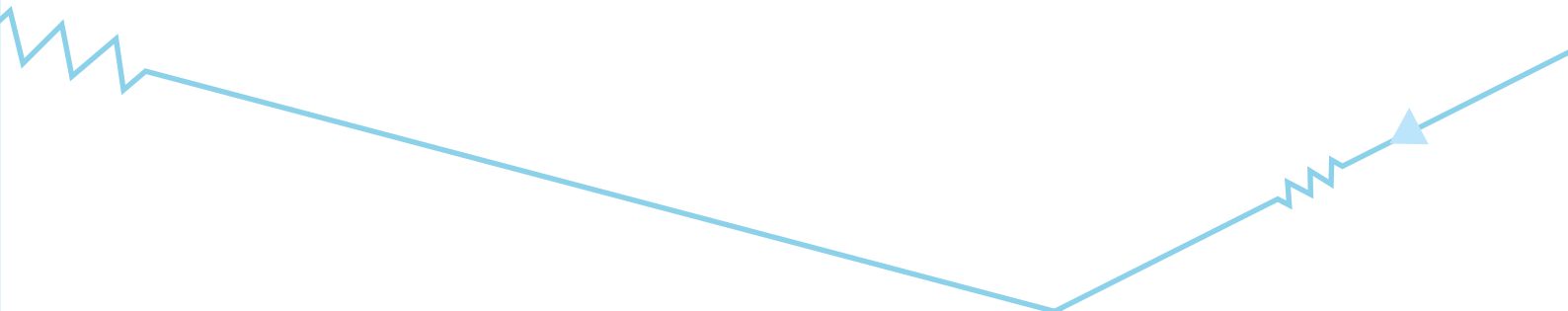


Coaxial and triaxial HDTV connectors.  
HDTV video and audio wiring.  
IP network wiring.  
Power connectors and wiring for lighting.  
Custom cables.  
Lighting and sound boxes.  
Tactical fiber optic units for mobile units and TV set.









# CONNECTORS

## INDEX

C016/Eco Mate .....	Page 10
Rectangular Connectors .....	Page 11
Automotive connectors .....	Page 12
Trident Series .....	Page 13
Hubbell .....	Page 14
Cam Lock Connectors .....	Page 15
REP Series .....	Page 16
Powerlock .....	Page 17
Metric connectors .....	Page 18
Industrial .....	Page 19
FCT D-Sub connectors .....	Page 20
PCB Connectors for all demands .....	Page 21
Push-Pull connectors .....	Page 22
Solutions for automated industrial processes .....	Page 24
RJ Field .....	Page 25

## CO16/ECO MATE



From design to conception, this series was made to meet the high requirements of industrial applications.

**Easy operation, reduced dimensions and a more robust design are only a few of the features of this series.**

Intended for field, installations and machine use.

### MAJOR FEATURES

- UL Certified connectors.
- Weld, crimp or 6+PE screwed contacts.
- Rated to IP67 standards.
- Color-coded.
- Up to 2.5mm<sup>2</sup> wiring.
- 400V rated voltage.
- 16A current rating.
- Max temp 125°C.
- UL94-V0 plastic coating.
- 500 mating cycles.

### ADVANTAGES AND APPLICATIONS

Circular Connectors with 3+PE and 6+PE contacts.

Housing components made from premium molding material.

Straight or angled cable housing (from 6 to 12.5mm diameter cable).

Rated IP 65/67 in mated condition under DIN EN 60526.

Antitraction system.

Easy and fast mounting.

Screwed O-ring.

Ergonomically designed product line for safe usage.

Pre-installed ground contact.

Environmental-proofing covers.



## RECTANGULAR CONNECTOR



Rectangular modular connector designed for heavy-duty applications in any industrial environment.



### ADVANTAGES

- Rated to IP68 guarantees a high level of waterproofness.
- Corrosion resistant.
- Compatible with other brands (Weidmüller, HTS, Harting...).
- A wide variety of inserts allow for high multi-signal capacity in a contained space.
- High versatility due to its modular, robust metallic design.
- EMI protection if required.
- Mixed signal and power solutions.
- Secure locking mechanism.

### APPLICATIONS

RAILWAY  
MARKET.

RENEWABLE ENERGIES.  
MACHINE TOOLS.  
ROBOTICS, ETC.

### MAJOR FEATURES

- Hybrid interconnections.
- Economical.
- Rated up to 1000V.
- Rated up to 300A.
- VDE, UL, CSA approved.
- Vibration-proof.
- Inserts ranging from 6 to 216 contacts.
- Crimp, screw or sprung contacts.



## AUTOMOTIVE CONNECTORS

### ELECTRICAL VEHICLE IEC, SAE Y GB/T INTERCONNECTION SOLUTIONS



ITT Cannon's class-leading UL and CE certified coupler connector/plugs, inlets, outlets, and accessories offer recognized, trusted and proven charging solutions for today's e-mobility markets.

Built-in accordance with all key regional standards - IEC 62196 for Europe, SAE J1772 for the Americas and Japan and GB/T 20234 for China they provide a truly global portfolio.

Cannon offers a fully comprehensive range of AC charging options with an industry-leading amperage range from 10A to 80A, single and triple phase variants, low contact resistance and a minimum of 10k mating cycles.

In addition to off the shelf solutions, our EV offering is fully customizable to meet specific requirements and we are able to offer variants of color, harnesses and terminals.



### IEC PERFORMANCE DATA

Temperature range from -30°C to +50°C.

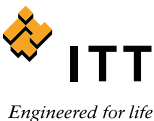
Tested to a minimum of 10,000 mating cycles.

Minimum sealing requirements of IP44 as per IEC 61851-1.

Tested in accordance with IEC 60525.

Connector Certifications: CE, ETL, IEC 62196-1 and IEC 62196-2.

Cable Certifications: DIN EN 50620.



### APPLICATIONS

HOME EV CHARGING UNITS.  
PUBLIC CHARGING STATIONS.  
ROADSIDE ASSISTANCE TRUCKS.  
FLEET TRUCKS.  
EV MASS TRANSIT VEHICLES.  
ELECTRIC WATERCRAFT.  
PASSENGER VEHICLES.  
ELECTRIC MOTORCYCLES.  
ELECTRIC AGRICULTURE VEHICLES.



## TRIDENT SERIES

### VERSATILITY, PERFORMANCE AND RELIABILITY

ITT Cannon's Trident series is an extremely versatile range of connectors for multiple harsh environment industrial and transportation applications.

From shielded metal circular connectors through to plastic circular and snap-together rectangular solutions, this diverse and globally proven range is engineered to deliver, when it matters most.

With mixed power and signal variants, sealing up to IP67, high voltage capability, UL 94 V-0 flammability performance and durability up to 500 mating cycles, Trident is a high performance and ruggedized connector series for the toughest conditions.

Ultra reliable, fully proven and delivering outstanding performance the Trident contact system is fully interchangeable and utilized throughout the Trident connector series. Both the two-piece T2P contacts and the three-piece T3P contacts feature three retention latches and an optimized body shape which provides excellent contact alignment and ultra-secure mating. Interchangeable contacts deliver a lower total cost of ownership by reducing tooling requirements and by both reducing the complexity and increasing the speed of contact insertion and removal.

Whatever the challenge, there is a Trident connector series engineered to meet it.

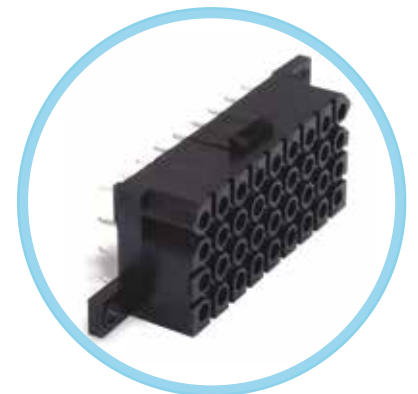


### FEATURES:

- Available in cost effective plastic to high performance shielded metal variants.
- Interchangeable contacts between series.
- Mixed power and signal layouts.
- Multiple shell styles including cable, PCB, flange mount, jam nut mount and panel mount receptacles.
- Sealing up to IP67.
- Durability up to 500 mating cycles. All ranges meet UL 94 V-0 flammability standard.
- Full range of tooling and accessories.

### APPLICATIONS

INDUSTRIAL EQUIPMENT AND MACHINERY  
HEAVY AND OFF-ROAD VEHICLES  
ROLLING STOCK AND RAIL  
INFRASTRUCTURE  
SENSORS AND TESTING EQUIPMENT  
FACTORY AUTOMATION AND ROBOTICS





## HUBBELL

For more than a century, Hubbell has offered the electrical and electronic wiring devices, wire management systems and specialized wiring products and solutions needed for industrial, institutional, commercial and residential markets.



### SOME PRODUCTS

- Twist-Lock® Devices.
- Insulgrip® Straight Blade.
- Weatherproof Device Boot.
- Midget Twist-Lock®.
- Locking Devices.
- Wallplates Weatherproof Covers for Receptacles.
- Electrical box/Switch boxes.
- Watertight Safety-Shroud® Flanged Inlet.
- Kellems Wire Management.
- Cord Connectors.
- Ship-to-Shore Devices.
- Switches.
- Extra Heavy Duty Industrial Switch.
- TrukTrak® Systems.
- More industrial interconnection solutions.



### APPLICATIONS

- RENEWABLE ENERGY.
- SERVICE SECTOR.
- INDUSTRIAL AUTOMATION.
- ROBOTICS, ETC.
- MARINE.



## CAM LOCK CONNECTORS

Single Pole connectors are made from a specially formulated thermoplastic elastomer (TPE) that resists cracking in cold, hot or oily conditions as well as any other harmful environments that may be found within the Entertainment Industry. The connectors have been designed so they are easy to assemble, requiring no special tools. A high strength, non-conductive retaining screw will securely lock the contacts to the insulated sleeves. These Single Pole connectors are completely interchangeable with other manufacturers single pole products. The product is UL Enclosure Type 3R, 4X and 12K Rated.

### FEATURES

- Insulgrip® style housing for superior gripping.
- Non-conductive retaining screw locks contacts in place.
- Turn and Lock symbol indicates devices are properly connected.
- Highly conductive brass contacts improve performance and extend life.



### SPECIFICATIONS

- Electrical:
  - Voltage Ratings: 600VAC Maximum, 250V DC Maximum.
  - Amperage Rating: 400A Maximum.
- Mechanical:
  - Terminal Accommodation: Plug- 300A - #4 to 2/0, Plug- 400A - 2/0 to 4/0, Recept.- 400A - #4 to 4/0.
  - Product Identification: Ratings are a permanent part of device.
  - Housing Compound: Thermoplastic Elastomer (TPE).
  - Contact Material: Brass.
  - Retaining Screw Material: Nylon.

### STANDARDS/LISTINGS/VERIFICATIONS

- UL and cUL Listed.
- UL Enclosure Types 3R, 4X, 12K.
- Flammability: HB per UL94 or CSA 22.2. 0.17.
- UL 498 for attachment plugs and receptacles.
- UL 1691 draft standard for single pin and sleeve devices intended for theatre, stage and studio applications.
- National Electric Code (NEC), ANSI/NFPA 70.

### APPLICATIONS

STAGE/STUDIO POWER  
PORTABLE POWER DISTRIBUTION  
LIGHTING  
"ON-LOCATION" FILMING  
CARNIVALS  
THEME PARKS

## REP SERIES

Our REP series of connectors can be found in both a cable-crimp variant and a 90° PCB variant. Both variants are available in 2, 6 and 12 contact configurations. All cable variants take 0.5mm<sup>2</sup> to 2.5mm<sup>2</sup> (24-12AWG) contacts in accordance with NFF 63-808 y EN 50-306 norms. These connectors have polarization guides that allow multiple configurations (Cable-to-Cable, front and posterior panel mount, etc.) and facilitate mounting.



### MECHANICS AND ENVIRONMENT

- Connector retention force > 70N.
- Connector locking-clip retention force > 190N.
- Over 500 mating cycles.
- Operating temperature ranging from -55° to 110°C (up to 250°C in the panel mounted version).
- Vibration resistant as per EN 61-373, Cat.2 standard allow bogie installation.
- Flammability:
  - I2 F1, NF F 16-101.
  - Condition 4, NF F 16-102.
  - HL3 for R22, EN 45545-2.
  - 30s, EN ISO 11925-2.
  - Category 2, UNI CEI 111170-3.
  - UL94V-0.
- Salt-Spray >96 hours, ASTM-B-117.
- IP66-67 Fluid resistance to cleaning substances, gasoline, diesel, oil, and acids.



### ELECTRICAL FEATURES

Current rating: 18A.

Voltage rating: 230V (400V with dummy contacts) per EN 50124-1 Contamination Lv. 3.

Dielectric voltage resistance: 2725V per EN 50124-1.

Contact resistance ≤ 2.5mΩ.

Insulation resistance ≥ 5x10<sup>3</sup>mΩ.




**POWERLOCK**

ITT's VEAM PowerLock connector series for field installation **power distribution** systems offers the ultimate in safety and reliability under the most severe operating conditions. PowerLock connectors are plastic bodied **single pole electrical connectors** used in high current applications. For use in single and polyphase power distribution systems up to 660A, the range includes panel and cable mounted connectors, and associated accessories. PowerLock connectors are **moisture and impact resistant** and feature insulated contact tips to prevent accidental touching of electrically live parts.


**SPECIFICATIONS**

- Large cable range: copper cable 25 to 300mm<sup>2</sup>.
- Low insertion forces & minimal power loss.
- Multiple points of contact ensures maximum transfer of power.
- Balanced product range with accessories.


*Engineered for life*
**TECHNICAL FEATURES**

Voltage = 1000VAC / 1000VDC acc. to DIN EN 61984.  
 Current = 400A or 660A continuous.  
 Peak Current = 16KA for 1 second.  
 Temperature range = -30°C to +125°C.  
 IP Value = IP67 (when mated).  
 Cable = 25-120mm<sup>2</sup> (400A set screw) 35-300mm<sup>2</sup> (660A crimp).

Cable OD = Ø15mm to Ø32mm with M40 gland.  
 Number of couplings = Minimum 500.  
 Flammability = UL94-V0 (Flame retardant).  
 VDE approved.

## METRIC CONNECTORS

Hummel connectors are renowned for their exceptional quality, supported by international certifications. These connectors meet IP67 and IP69K standards when mated and have a high resistance to vibration in addition to 360° shielding ensures secure EMC protection.

M16, M23 y M40 connectors come with Hummel's Twilock system (TWILOCK-S). Twilock is a quick-connect system that is resistant to vibration leading to reduced connection times. TWILOCK-S is 100% intermateable with Speedtec systems.



### METRIC 12 POWER

3-11mm cable diameter.  
 Rated up to 630V and 16A.  
 Robust metallic housing, also available in stainless-steel.  
 EMI Shielding in its standard version.  
 K, L, S, T Coding.  
 Compact easy-connect design.

### METRIC 16

Compact housing (<20mm).  
 3-11mm cable diameter.  
 Industry capable design.  
 Power and signal-versions available up to 18 contacts.  
 Mounting and shielding in one single step.  
 TWILOCK Quick-connect system available.

### METRIC 23 SIGNAL AND POWER

Inserts: 5 + PE, 4 + 3 + PE, 5 + 3 + PE (Power);  
 6, 7, 8 + 1, 10, 12, 16, 17, 16 + 3 with multiple coding options integrated (Signal) and further Hybrid Solutions.  
 3-17mm cable diameter.  
 Intermateable inserts.  
 Crimp, solder and PCB contacts.  
 TWILOCK and TWILOCK-S quick-connect systems available.  
 TWILOCK-S is Speedtec intermateable.  
 Multiple coding possibilities.

### M40 POWER

M40 is available with 2+3+PE, 4+3+PE (55A/600V) to the Hybrid-Versions.  
 7-17mm cable diameter.  
 Crimp or solder contacts.  
 Easy to install and quick to connect.  
 TWILOCK-S quick-connect systems available Speedtec intermateable.



## INDUSTRIAL

Switchcraft/Conxall has a broad line of harsh environment connectivity solutions, made in Switchcraft's vertically integrated factories in the USA to the highest quality standards. Product lines included:

- Sealed circular plastic connectors rated up to IP68/IP69K.
- Rugged push-pull connectors.
- DC Power Jacks and Plugs.
- Audio jacks and plugs including 1/4" [6.35mm], 3.5mm and RCA.
- Panel mount data connectors including RJ45, USB, and HDMI.
- Connectors including XLR, Mini-XLR, and DIN.
- An extensive line of audio and video patch panels.



Switchcraft connectors and plugs are also available as standard or custom factory molded cable assemblies, typically requiring no NRE and very low minimums.



## APPLICATIONS

GPS/ DATA ACQUISITION  
 SAFETY & SECURITY  
 MEDICAL DEVICES  
 LIGHTING AND SIGNS  
 AGRICULTURE  
 AUDIO EQUIPMENT  
 TRANSPORTATION AND MARINE  
 FACTORY AUTOMATION  
 PRO AUDIO & BROADCAST  
 GENERAL ELECTRONICS

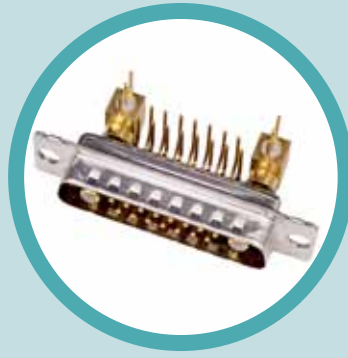


## D-SUB CONNECTORS

Wide range of connectors and shells available in multiple sizes and configurations.



D-SUB HIGH DENSITY



PCB



D-SUB CONNECTORS AND HOUSINGS

### D- SUB STANDARD CONNECTORS

Available from nine to fifty contacts.  
Nickel or gold plating for Aerospace applications.  
Crimp, weld or PCB versions.

### D-SUB HIGH DENSITY CONNECTORS

Designed for modern data transmission, telecommunications, control and regulation applications.  
High density of contact configuration (15, 26, 44, 62, 78).  
Trapezoidal shape avoids miss alignment or possible pin damage.  
Available in straight and right-angle configurations.  
Solder crimp or PCB configurations.  
Operating range from -55°C to 105°C.

### D-SUB MIXED CONNECTORS

Designed to handle power, data and even pneumatic transmission in the same connector.  
Low thermal resistance contacts.  
High corrosion resistance.  
High voltage applications.  
Solder or crimp contacts.

### D-SUB WATERPROOF CONNECTORS

Waterproof according to IP67.  
Available in several sizes.  
Mixed power and data versions available.  
Rust-resistant coating.

### D-SUB FILTER-CONNECTORS

Made to order filtered solutions.  
Capacitive and inductive filters.  
Solutions for standard and mixed Sub-D Connectors.

## PCB CONNECTORS FOR ALL DEMANDS

German manufacturer EPT is a world-leading designer, manufacturer and distributor of electronic PCB connectors and high-quality contact solutions.

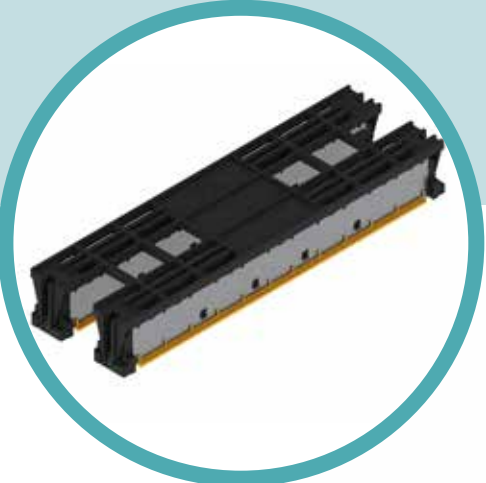
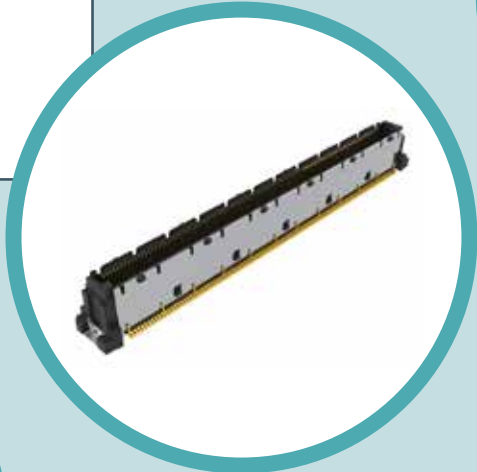
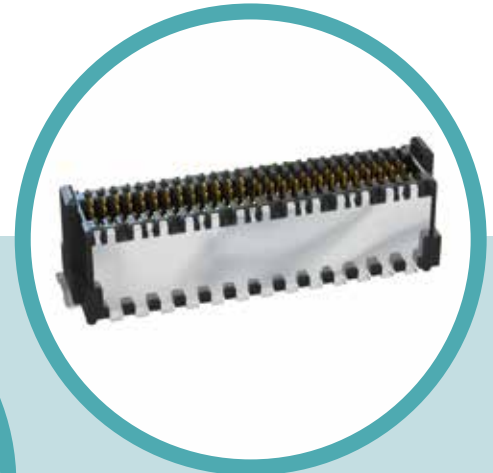
EPT offers SMT and press-fit connectors for various requirements like High Speed data transfers, harsh environments or small spaces.

### SERIES

- ZER08 - 0.8 MM SMT.
- COLIBRI - 0.5MM SMT.
- ONE27 - 1.27MM SMT.
- EC.8 - 0.8MM EDGE CARD SMT.
- DIN 41612 / IEC 60603-2.
- FLEXILINK PCB CONNECTORS.
- PC/104, PC/104-PLUS.
- HM2.0 HARDMETRIC.

### AREAS OF APPLICATION

- INDUSTRIAL AUTOMATION.
- MEASURING TECHNOLOGY.
- MEDICAL.
- ENERGY TECHNOLOGIES.
- TRANSPORTATION.
- AEROSPACE.



## PUSH-PULL CONNECTORS

Fischer Connectors offering:

- Interconnect solutions for multiple source sensors and data management.
  - High data speeds and multi-protocol management including Single Pair Ethernet.
  - Size, weight and power (SWaP) optimization for compact devices in space-constrained areas.
  - Maximized functionality with high density and hybrid signal & power options.
- Resistance to harsh conditions.
  - High corrosion resistance with up to 1,000 hours of salt mist.
  - Easy cleaning and maintenance with IP68/IP69 sealing (even unmated).
  - Operations in vacuum or pressurized environments with hermetic solutions.
  - Signal integrity with excellent 360° EMC shielding.
  - Long life cycles, durable materials and mechanical designs resisting up to 10,000 mating cycles.

### FISCHER CORE SERIES ROBUST

Plastic, aluminum, nickel-plated brass, stainless steel.

### FISCHER MINIMAX SERIES

Ultra-miniature up to 24 signal & power contacts in just Ø12 mm.

### FISCHER FREEDOM SERIES

Low profile, easy integration, optimized cable management.

### FISCHER FIBEROPTIC SERIES

Rugged fiber optics for long-term monitoring.

### FISCHER SINGLE PAIR ETHERNET SOLUTIONS

Smaller, lighter and more affordable version of the Ethernet with data transmission up to 10 Gbit/s.





Fischer Connectors offer dedicated, pioneering electronic development from initial evaluation and proof of concept, through design and industrial supply, to life cycle management. Expertise, responsiveness, customization: from passive electronic circuit components and active modules, to IP switches and USB hub systems interconnected with optical camera systems.

**FISCHER RUGGED FLASH DRIVES**

Safe storage and transportation of sensitive data in harsh and high-vibration environments.

**FISCHER UNMANAGED SWITCH (120W)**

Full gigabit Ethernet switch with 8 ports capable of providing up to 120 W.

**FISCHER ADAPTER MODULES**

Miniaturized inline adapters for protocol information conversion.

**FISCHER MANAGED SWITCH WITH TSN TECHNOLOGY**

Time Sensitive Networking (TSN) technology. IP68-sealed housing. Compact and lightweight (<1kg).

**FISCHER FLEX CIRCUITS**

Ultra-thin, flexible PCB connection ideal for multiple connections.

**AREAS OF APPLICATION**

- ELECTROMEDICINE.
- ROBOTICS.
- BROADCAST.
- INSTRUMENTATION.



## SOLUTIONS FOR AUTOMATED INDUSTRIAL PROCESSES

ETHERNET Infrastructure Components.  
 PROFIBUS Infrastructure Components.  
 POWER Distribution Components.  
 Sensors and Actuator Wiring.

PROFINET Industrial Communication Technology  
 and EtherNet/IP used as an industry standard by the  
 major automation companies.

**Complete harsh environment  
 automation infrastructure  
 solutions designed under for  
 European standards.**



### APPLICATIONS

AUTOMOTIVE AUTOMATION.  
 MATERIAL HANDLING.  
 FOOD AND BEVERAGE.  
 COMMERCIAL VEHICLES.  
 SOLAR APPLICATIONS.



### FIELD BUS COMMUNICATION SOLUTIONS

- Safe: CIP Safety, PROFI-safe, CC-Link IE Safety.
- Non-Safe: PROFIBUS, PROFINET, DeviceNet, EtherNet/IP, CC-Link, CC-Link IE, CanOpen, Modbus, EtherCAT, IO-Link.



M8 - M12 CONNECTORS



## RJ FIELD - RUGGED COMMUNICATION SOLUTIONS

A wide range of Ethernet solutions for defense, aerospace and industrial applications.

The patented RJStop system allows you to use standard RJ45/RJ11/USB wiring with a rugged, weather-proof metallic connector.

We have solutions Cat 5e, Cat 6, Cat 6e y Cat 7 Ethernet solutions.



### RJF

- Meets IEC 60603-7 variant 11.
- Bayonet coupling with visual and audible cues.
- IP68 environmental proofing.
- Tested to 500 mating cycles.
- Robust Metallic housings based on MIL-DTL-26482 H.
- Resistant to impact, vibration, and traction.
- Salt Spray: 48h Ni plating, 96h with BZN plating and 500h with Cd plating.
- Fire retardant and low smoke under UL94 V0 y NF F 16101 y 16102.
- Vibration tested up to 10-500HS, 10g, 3 axes with no discontinuity.
- Shock resistance: IK06.

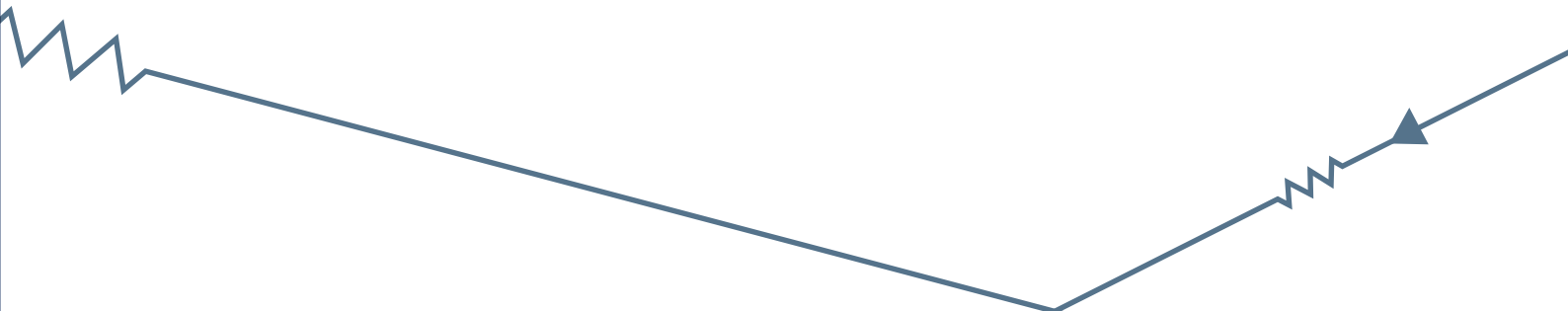
### RJF RB

- Bayonet Coupling.
- IP68 environmental proofing.
- Tested to 500 mating cycles.
- Fire retardant and low smoke under UL94 V0 NFF, 16102, and DIN 5510-2.
- Resistant to impact, vibration, and traction.
- Operating temperature from -40°C to +85°C.
- Corrosion-resistant up to 1000h.

### APPLICATIONS

- RAILWAY.
- WIRELESS BASE STATIONS AND REMOTE ACCESS.
- CCTV VIDEO CONTROL.
- ROBOTICS.
- INDUSTRIAL PROCESSES AND CNC MACHINE CONTROL.
- MOTION SENSORS.
- REMOTE MAINTENANCE.





# ACCESSORIES AND TOOLS

## INDEX

AC/DC Contactors .....	Page 28
Contactors .....	Page 29
Mechanical shielding .....	Page 30
EMI / EMC expertise and know-how .....	Page 31
ID solutions and printers .....	Page 32
Thermoretractives .....	Page 33
PMA conduits and fittings .....	Page 34
Electrical shielding .....	Page 35
Crimp tools .....	Page 36
Strip and crimp tools .....	Page 37

## AC/DC CONTACTORS

Contactors for industrial applications, rolling stock, and battery-powered vehicles. Emergency disconnect switches. Schaltbau DC contactors are excellent at extinguishing electrical arcs.

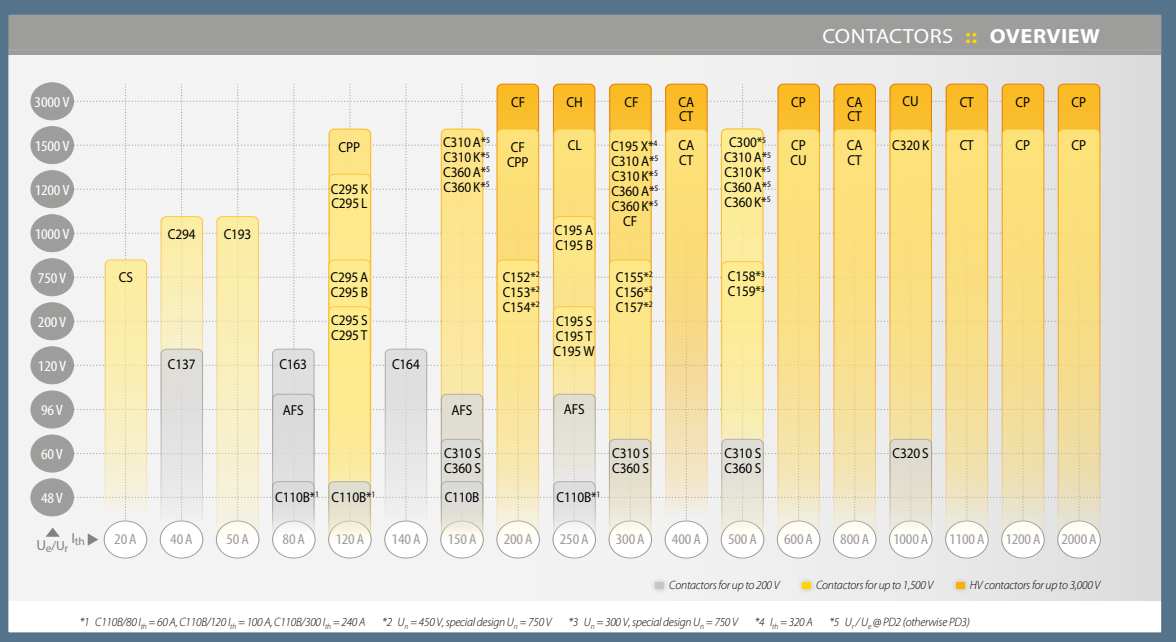
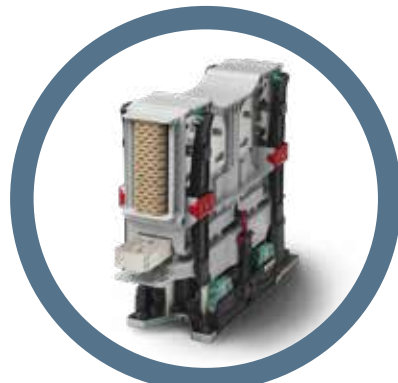
Schaltbau has developed sophisticated and efficient contactors for power applications.

### FEATURES

- Compact, rugged design.
- Double-break contacts.
- Magnetic blowout.
- Suitable for years of continuous service.

### APPLICATION

- Solar power systems.
- Wind power systems.
- Railway systems.
- Electrical vehicles, hybrid vehicles, trolley busses, DC charging station/HPC, and E-Mobility test benches.



## DC CONTACTORS

### CF

Multipole AC power contactors for loads up to 600 A and 3,000 V.  
 Multipole AC power contactors for 300 A or 600 A with NO or NC switching chambers and a rated operating voltage up to 3,000 V.



### C320

1 pole bi-directional DC NO contactors up to 1,800 volts.  
 Compact single-pole NO contactors for AC and DC up to 1,800 volts rated insulation voltage. Making current up to 3,000 amps; conventional thermal current up to 1,000 amps; short-time current up to 4,500 amps.

### C360

Compact single-pole NO contactors for AC and DC up to 1,500 volt rated insulation voltage. Making current up to 2,500 amps; conventional thermal current up to 500 amps; short-time current up to 3,000 amps. Approved for railway applications in accordance with EN 45545-2.



## CONNECTORS

High-quality connectors for industry, transportation and telecommunications. Connecting reliably under extreme conditions.

## SNAP-ACTION SWITCHES

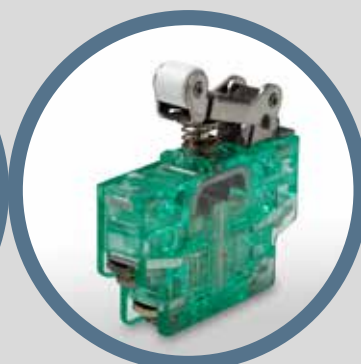
Our snap-action switches comply with high standards for safety circuits. Switching with precision when it really matters.

## DC AND AC CONTACTORS

Users in industry and the rail sector benefit from our know-how in switching high currents. Reliably extinguishing the electric arc.

## CONTROL DEVICES

Our electrics for rolling stock make railway vehicles both safe and comfortable. Arriving punctually.



## MECHANICAL SHIELDING

TENNECO (Formerly Federal-Mogul) offers a wide range of products such as:

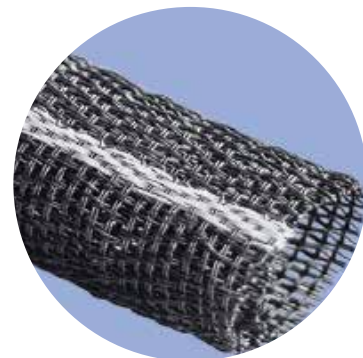
- Abrasion, EMI, electrical insulation and Fire/thermal protection of electrical wiring.
- Temperature range from -65°C to +260°C.
- Easy to install.
- Fluid resistant.

### ABRASION 2000 FR

Open sleeves mechanical protection based on VO class materials.

Extreme abrasion resistance.

To save time on maintenance, can be installed even with connectors already in place.



### EMI-FMJ

Flexible Faraday protection against high voltage disturbance or to enhance shielding efficiency on data transmission cable to reduce high frequency noise.

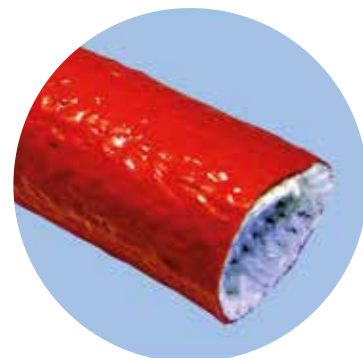
Open sleeve solution to wrap cable harnesses with 2 turns per meter to get along with high bend radius.



### ELECTRICAL INSULATION GES 100

Tubular and open sleeves based on fiber glass and Silicone to increase insulation up to 10kV.

Auto-amalgamated silicone tape 67BT with a blue tracer to get 2 layers of protection so 10kV.



### FIRE/THERMAL PROTECTION FYREJACKET HL

Tubular and open sleeves protection made of braided fiberglass and silicone.

Extreme heat resistance that helps prevent fire T°1100°C 15mn.

Long-lasting insulation and protection against molten metals. Several combined solutions with Nextel (T°1200°C) to create a thermal barrier inside/outside.



## EMI / EMC EXPERTISE AND KNOW-HOW

### Expertise in trouble shooting to solve data transmission cross talk.

#### CHALLENGE

Lack of communication between 2 active components, bit lost, bit error, integrity of the signal, lightning strike exposure of sensitive systems:

- Difficulty to shield when harnesses are already connected.
- Excess of space and weight generated by standard shielding solutions.
- Difficulty to easily ground shielding solutions.
- Compatibility with metals used for coating of backshells and raceways.

#### SPECIFICATION

EMI/EMC:

- EN3475-301
- IEC62153-4-3
- EN61000-4-21

Environmental tests:

- EN6059-302: Heat ageing.
- EN6059-306: Rapid change of temperature.
- EN6059-402: Bending.
- EN2591-307: Salt Mist Exposure.
- EN2591-214: Lightning Strike.

#### SOLUTION

Ability to test, benchmark solutions and filter the right product that meets EMC requirements and environmental constraints. Ability to offer solutions that can be installed even on pre-connected wire harnesses.

- Lightweight solutions that do not increase the overall wire harness diameter while keeping a maximum of flexibility to the bundle for final integration.
- Integrated grounding solution.

#### EN3475-301

Ohmic resistance per unit length. This standard specifies a method of measuring electrical resistance per unit length.

#### IEC62153-4-3

Surface transfer impedance - Triaxial method which determines the screening effectiveness of a cable shield by applying a well-defined current and voltage to the screen of the cable and measuring the induced voltage to determine the surface transfer impedance.

#### EN61000-4-21 ANNEXE F

Testing and measurement techniques reverberation chamber test methods. IEC 61000 here relates to emission and immunity test methods for electrical and electronic equipment using various types of transverse electromagnetic (TEM) waveguides.

#### BENEFIT

- Low wall thickness: Typical wall thickness <1.5 mm.
- Low weight: [ 40; 250].
- Inclusive solution: PTFE integrated tape.
- Rework: Reopenable solutions.
- Low and high voltage: Can protect the victim or shield the aggressor.
- Low fray: Stable woven construction.
- Integrated grounding: Grounding strap can be pulled from the construction.
- Different material grades: Cu/Ni C4 and C27; CuSn wires, stainless steel.

#### APPLICATION

Faraday protection.

## ID SOLUTIONS AND PRINTERS



SCP Sintorsa offers complete cable and wiring identification and labeling solutions across industries and applications.

Designed for the most rigorous indoor or outdoor use, you can choose from an array of flexible options including adhesive-backed labels, heat-shrinkable sleeves, cable markers and hardware/software systems for onsite customization.

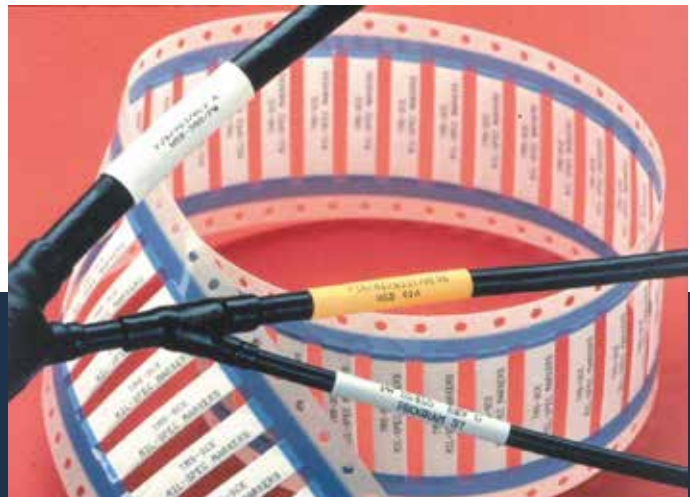
Heat-shrinkable printable markers when used in conjunction with our printing system can assure a reliable solution that will stand up to the harshest environments.

### HEAT-SHRINKABLE LABELS

- RPS | TMS-SCE | D-SCE | HT-SCE | HX-SCE.

### PRINTER SOLUTIONS

- Wintotal Software.
- T200-Ident Printer, TE3112 Printer.





### HEAT-SHRINK MATERIAL

#### SHRINKING TO THE CHALLENGES

Heat-shrinkable harness sealing components was developed for a wide range of extreme applications.



#### PRODUCT FEATURES

- Abrasion resistance.
- Self-sealing for waterproofing (sealant coated parts only).
- Mechanical protection.
- Heat shrinkable for size range variability.
- Ease of installation.
- Temperature and solvent resistant.
- Strain relief for cable break-outs.
- Available in several sizes.



## PMA CONDUITS AND FITTINGS

### PROTECTIVE CONDUITS AND FITTINGS FOR DEMANDING CABLE APPLICATIONS

Cable protection systems are key to ensuring a reliable electrical system. Conduits, fittings, and accessories all work together to provide optimum protection in the most severe environments.

In a range with sizes from 6 to 125mm of diameter, PMA offers cable protection solutions per each demanding application. Wherever cables are installed and exposed to mechanical stresses and environmental hazards PMA has a specific solution to protect it.

### CERTIFICATIONS

CSA, UL, EN 45545-2, NF, NSF, ECOLAB, ATEX, etc.

All conduits have REACH and RoHS. certifications.

### APPLICATIONS

RAILWAY AND INFRASTRUCTURE.  
 POWER GENERATION.  
 ROBOTICS.  
 FOOD INDUSTRY.  
 REFINERIES.  
 SEWAGE TREATMENT.  
 MINNING.  
 WIND TURBINES.  
 SOLAR PANELS.  
 AND MANY MORE...

### SPECIFIC SOLUTIONS PER APPLICATION

- Safe, reliable, and easy to install systems.
- Vibration-proof connections.
- System connection strength.
- Waterproof to industry standards.
- High impact strength even at low temperatures.
- High compression resistance (Maximum Load).
- Resistant to long-duration continuous flexing.
- Good chemical resistance.
- Fireproof and smoke-proof.
- Great weather resistance.
- Long lasting.

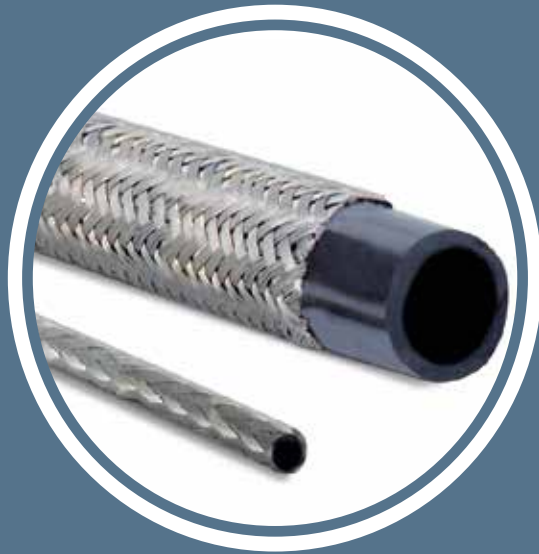
### TECHNICAL FEATURES

Our conduits and fittings offer solutions for:

- Harsh and corrosive environment cable protection.
- Rated IP66, IP67, IP68, or IP69K.
- Highly volatile environment protection.
- Operational continuity.
- Cost and time reduction during the installation period.



## ELECTRICAL SHIELDING



### SITBRAID

The cost-efficient way of shielding your harnesses from EMI.

Supplied over plastic tubing to preserve its shape and facilitate installation. Available in tinned copper and provides a minimum of 90% optical coverage, ensuring minimal internal and external interference.

#### ADVANTAGES

- Provides EMC such as electromagnetic, electrostatic, and radiofrequency to sensitive wiring.
- Typical attenuation from 100MHz 65-75dB.
- Each size adapts to a wide range of diameters.
- Temperature ranges from -65°C to +150°C.
- Maximum flexibility without deforming.

Part no.	FORMER O/D mm.	Minimum Optical Coverage	Wire Dia. Mm.	Usable Dia. (mm)		Approx. Weight Kg per 100m (Ex-former)	Resistance Value Max. Ohm per Km
				Min.	Max.		
SITBRAID-3.0	3.0	95%	0.10	2.5	5.0	1.25	17.0
SITBRAID-4.0	4.0			3.5	7.5	2.20	10.0
SITBRAID-6.0	6.0			4.5	9.5	2.80	8.0
SITBRAID-7.5	7.5			7.0	14.0	4.40	5.5
SITBRAID-10.0	10.0			8.0	22.0	5.00	4.0
SITBRAID-12.5	12.5			11.0	24.0	7.50	3.5
SITBRAID-20.0	20.0			16.0	38.0	10.00	2.5
SITBRAID-25.0	25.0		22.0	38.0	11.25	1.7	
SITBRAID-30.0	30.0		0.16	27.0	40.0	19.30	0.90

### SIT-SHIELDTAPE

Flat braided EMI shielding tape allows for easy attachment to backshells.

#### FEATURES

- Material: Tinned copper.
- High flexibility easily adapts to a multitude of shapes.
- High temperature resistant braided design.
- Resistant to oils and hydrocarbons.
- Nominal Dimensions:
  - Width: 25mm.
  - Length: 4.5m.



#### APPLICATIONS

Used to reinforce and ensure an adequate transition between shielded cables and backshells.

## CRIMP TOOLS

Ergonomic solutions for wiring manufacturing.



### PRODUCTS

- Crimp Tools.
- Go/No Go Gages.
- Safe-T-Cable™ tools & Components for fastener security.
- Tensile test equipment.
- Banding tools.
- Contact retention testers.
- Connector and backshell torque tools.
- Contact installation and removal tools.
- Fiber optic tools.
- Maintenance support tool kits.
- Turrets.
- Positioners.

### INDUSTRIAL INTERCONNECTION CRIMP TOOLS

- Hand operated.
- Battery powered.
- Pneumatic powered.
- Hydraulic crimping tools.



## STRIP TOOLS

### PRODUCTS

- Stripmaster®: fast and precise manual strip tool.
- Ergo-Elite Stripmaster®: lighter and more ergonomic version of the Stripmaster® strip tool.
- Coaxial cable strip tool.
- MiniLite-Strip™ Fiber optic strip tool.
- Stripmaster® 950: Pneumatic strip tool for AWG30 to AWG10.
- STP strip system for braided cables.
- Ringer strip tool: precision strip for most shielded and non-uniform cross-section cables including Teflon insulation.
- STP strip tool: Braided pair exterior insulation strip solution.
- Pneumatic strip tools: designed for operator comfort while still supporting a wide range of cable diameters.
- Heat Elite: Hot-air guns.
- Professional-grade cutting pliers.



STRIPMASTER

## CRIMP TOOLS

### PRODUCTS

- Crimp Tools.
- General Hand Tools.
- IDC Hand Tools.
- Insertion and Extraction Tools.
- Heavy-Duty Hand Tools.
- Hydraulic Crimp Tooling.
- Wire Strippers and Cutters.
- Testers.
- Hand Tools for Mass Termination.
- Servicing Tools.
- Hand Tool Kits.







# CONNECTORS & HARNESSES ASSEMBLY

## INDEX

ITT Veam-CIR Series Connectors .....	Page 40
SCP/SCPB Connectors .....	Page 41
SCPT Connectors .....	Page 42
SCPTV Connectors .....	Page 43
Industrial and Rail Wiring .....	Page 44
Manufacturing Installations .....	Page 45

## ITT VEAM-CIR SERIES CONNECTORS

Sintersa is an authorized value-added distributor for ITT VEAM, this allows us to assemble CIR series connectors with an estimated two-week delivery time.

### MAIN FEATURES

Certified EN45545-HL3-R22-R23 and conform to NFPA130.

Bayonet Coupling.

Gold or silver plated crimp contacts from 26 AWG to 240mm<sup>2</sup>.

RoHS certified surface treatment allows for up 500h salt spray resistance.

From 7.5 to 350A.

IP67 when mated and accompanied by the correct accessories.



**2**    
WEEKS  
SHIPMENT

**EXPRESS**  
DELIVERY  
SERVICE





## SCP CONNECTORS

### CIRCULAR THREADED COUPLING (SCP)

Designed and manufactured in accordance with MIL-C-5015 specifications.

All materials and components are up to the MIL specifications.

Compatible and interchangeable with other manufacturer's MIL-C-5015 connectors, guaranteed.

#### APPLICATIONS

INDUSTRIAL.  
RAILWAY.  
DEFENSE.  
AUDIOVISUAL.



### CIRCULAR BAYONET COUPLING (SCPB)

SCPB connectors are based on the MIL-C-5015 standard but come with a bayonet coupling.

Significantly reduces coupling times and facilitates connection in awkward positions.

SCPB connectors use standard MIL-C-5015 and VG95234 inserts.

#### ADVANTAGES

- 256 configurations.
- From 1A to 950A contacts.
- Weatherproof and shockproof.
- Operating temperature from -55°C to 125°C.
- Threaded or bayonet coupling.
- Sold, crimp, or PCB contacts.
- Zinc-Cobalt anti-corrosion treatment.

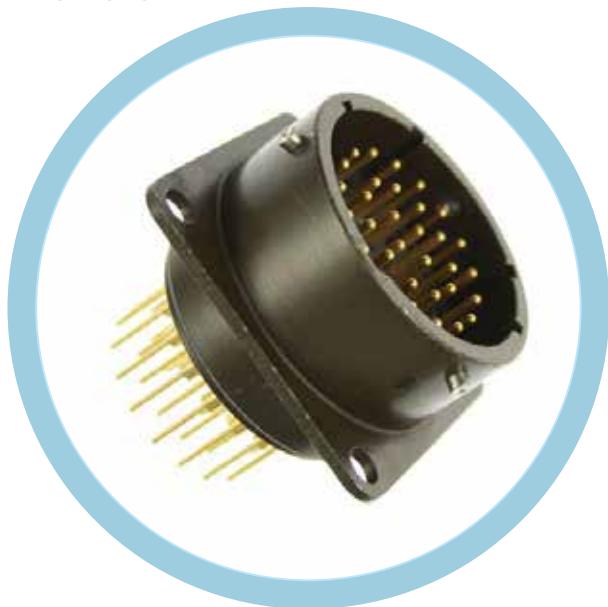


#### APPLICATIONS

INDUSTRIAL.  
RAILWAY.  
DEFENSE.  
AUDIOVISUAL.

## SCPT CONNECTORS

### MIL-C-26482



SCPT connectors are designed and manufactured as per MIL-C-26482 series I specifications.

Known for its efficiency, reliability, and interchangeability with other manufacturer's equivalent series.

MIL-C-26482 standard modifications are available including crimp and PCB contacts in different sizes and distributions.



#### ADVANTAGES

Efficient and reliable.  
Interchangeable with other manufacturer's equivalent series.

#### MATERIALS

QQ-A-591 Aluminum alloy.  
Stainless Steel guides.  
Crimp and PCB contacts.  
Copper alloy with gold over nickel plating.

#### PLATING

Olive green QQ-P-416 cadmium.  
Black Anodized.  
White Cadmium.  
Black Zinc-Nickel.

#### SERVICE QUALIFICATION

Class I-Operating voltage: AC 500/DC 700.  
Class II-Operating voltage: AC 900/DC 1250.

#### CONTACT SPACE

Class I-Leak distance 2.38mm/mechanical separation 1.19mm.  
Class II-Leak distance 3.18mm/mechanical separation 1.98mm.

#### CONTACT SIZE

20 Nominal current 7.5A/Test current 7.5A.  
Voltage drop 25mV.  
16 Nominal current 22A/Test current 13A.  
Voltage drop 21mV.

## SCPTV CONNECTORS

### MIL-DTL-38999 SERIE III y TV INDUSTRIAL

Military and aeronautical applications.  
Vibration resistance.  
High-density connectors.  
Interchangeable with other manufacturers.

#### ADVANTAGES

High-density inserts.  
Scoop-proof (Connections without short-circuiting).  
Fast coupling (360° rotation).  
Anti-vibration de-coupling system.  
MIL-DTL-38999 Serie I interchangeable base.

#### MATERIALS

Aluminum (Standard).  
Composite (Light and corrosion resistant).  
Marine Bronze (Robust and corrosion resistant).  
Stainless steel (Extremely robust and heat resistant).

#### PLATING

Olive green Cadmium.  
Nickel.  
Passivated (for Steel).  
RoHS compliant.  
Black Zinc Nickel.



#### SIZES

8, 10, 12, 16, 20, 22D, 23.  
Signal, power, Twinax, coaxial, Quadrax and optical applications.  
Size 8 contacts for power, coaxial, Triax and Quadrax applications.  
Accessories for interconnection solutions.  
Protective covers.  
Adaptors.  
Thermoretractable boots.  
EMI-proof junctions.  
Crimp Tools.  
Coaxial contacts.  
Filtered Connectors.  
Ethernet connections.

### MECHANICAL CHARACTERISTICS

#### Thermoplastic Inserts

Durability: 500 cycles and up to 1500 cycles with composite CTV connectors using type H and J contacts.

Shock-resistance: 300G for 3ms as per EIA364.27.

**Sinusoidal Vibration:** -60G from -55°C to +175°C (for Olive Green Cadmium)/-60G from -55°C to 200°C (for Nickel plating and Firewall/High Temperature).

#### Random vibrations as per EIA364.28:

1G2/Hz at 175°C (for Olive Green Cadmium).  
1G2/Hz at 200°C (for Nickel plating and Firewall/High Temperature).  
5G2/Hz at Ambient temperature.



## INDUSTRIAL AND RAIL WIRING

SCP SINTERSA designs, manufactures and supplies electrical interconnection components and systems for professional applications in harsh environments.

Our team has more than 35 years of experience in the aerospace, military, naval, railways & industrial markets.

With our Know-How, we offer customized solutions to fulfill your electric interconnection needs.

We guarantee the highest level of quality thanks to our automated production systems.



## DESIGN AND MANUFACTURE OF INDUSTRIAL WIRE HARNESSES

- Special industrial application harnesses.
- Coaxial communication harnesses.
- Mounting of coax, triax, and cuadrax connectors.
- Power cables.
- EMI/RFI protected control cables.
- Sealed boxes and harnesses subject to pressure.
- Ruggedized fiber optic solutions.
- Vibration-proof harnesses.
- Brading.

- UIC homologated material.
- Cero-Halogen low smoke harnesses.
- Power contact and terminal crimping.
- Multiple Rail-Manufacturer certifications.
- Control harnesses.
- Power harnesses.
- Brake/traction master controllers.
- Safety and signaling control for the railway sector.

## MANUFACTURING INSTALLATIONS



At SCP-SINTERSA we have a combined 6.000m<sup>2</sup> between our Madrid and Seville facilities.

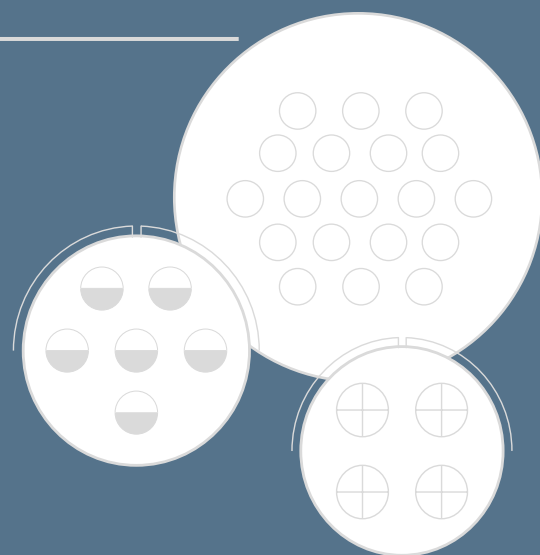
Lean Manufacturing | Quality | Design |  
Prototype | Know-how | Professionalism.





# INTERCONNECTION SOLUTIONS

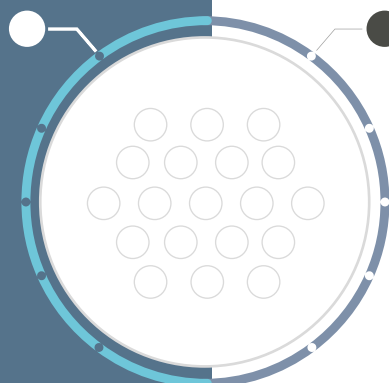
PRODUCT KNOWLEDGE.  
MANUFACTURING CAPACITY.  
ELECTRICAL ENGINEERING.  
FINAL ASSEMBLY.



Reliability, quality and expertise.  
A benchmark company in the interconnection world.  
Leading projects.

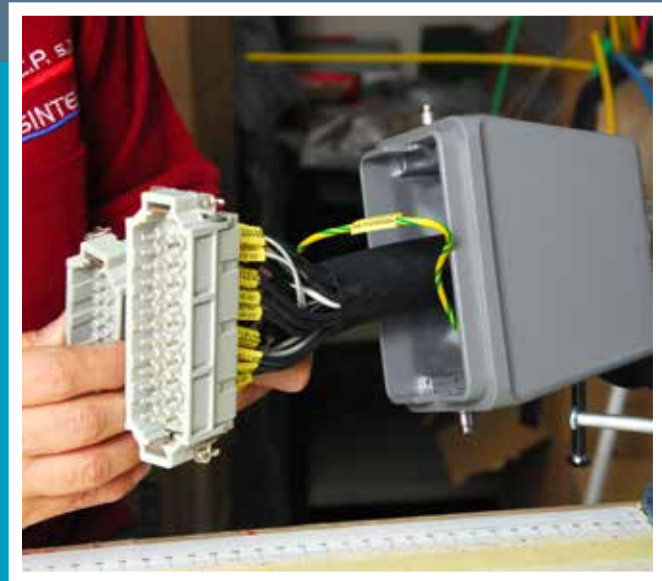
## INDUSTRIAL DIVISION

Railway market.  
Electrical cars.  
Machine tools.  
Renewable energies.  
Broadcast.  
Telecommunications.



## MILITARY/ AERONAUTICAL DIVISION

Military market.  
Aeronautical market.  
Naval market.  
Space.



## QUALITY SYSTEM

UNE-EN ISO 9001 — Quality Management System  
UNE-EN 9100 — Aerospace and Defence Requirements  
AQAP/PECAL 2110 — Military Requirements  
NATO CAGE —267BB / 1199B  
IPC —IPC/WHMA-A-620



## EUROPEAN REGIONAL DEVELOPMENT FUND



EUROPEAN UNION A WAY TO MAKE EUROPE



## PARTNERSHIPS



### HEADQUARTERS

📍 MADRID  
☎ (+34) 91 361 00 41

### BRANCH OFFICES

📍 SEVILLE  
☎ (+34) 95 531 09 99

📍 BARCELONA  
☎ (+34) 93 172 06 97

📍 LISBON  
☎ (+351) 211 319 832

