General overview of the multipole connector product range for railway applications

Tests

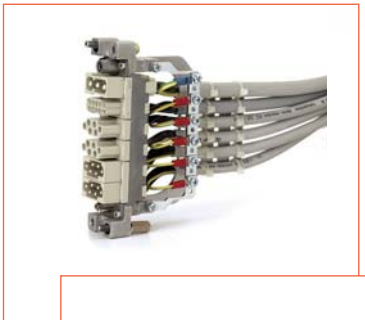
In 2006, we carried out laboratory tests approved by the French Railways SNCF, according to the above mentioned French standards **NF F 16-101** and **NF F 16-102**, the material we use in our connectors, which has been found to belong to **class F1** (Index Fumée **I.F.** ≤ **20**) as well as a toxicity index (Index Toxicité Fumée) **I.T.C. = 20**.
Both these values meet the requirements set out by the French standards and by the Italian standard UNI CEI 11170-3 schedule 2, which relates to electrical connectors.
We have also commissioned a qualified North American laboratory to carry out tests compliant with American standards, which have confirmed compliance with the requirements set out by the US Federal Transit Administration "Recommended Fire Safety Practices for Rail Transit Material Selection" for methods ASTM E 662 (NFPA 258) (fume specific optical density), ASTM E 162 (ASTM D3635) (surface inflammability ➧ flame propagation index) and Bombardier Transportation SMP 800-C (fumes and gases toxicity).
Test reports are available on request (please contact our Sales Offices).
All requirements have been met.
Our connectors work under AC as well as DC current.

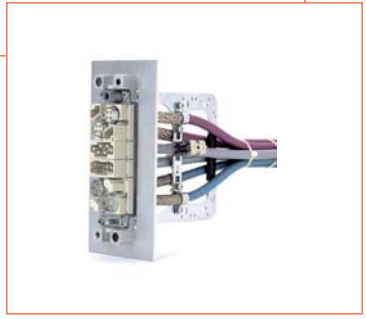
HOODS

IP68
The hoods with IP68 protection rating are particularly suitable for applications in the railway industry and any application requiring high resistance to pressure, impact and corrosion.
They also ensure a good screening for electromagnetic compatibility, resistance to vibrations in compliance with EN 61373 standard and to pressurised water.

STANDARD
A large number of enclosure versions are available with different combinations of component materials, each one suitable to a specific installation: normal environmental conditions, high temperature environments, aggressive environments and environments that require electromagnetic compatibility. The coupling stability and protection against accidental opening are assured by single or double closing devices comprising levers, springs and pegs in stainless steel or entirely in plastic (CK and MK series). Sealing is assured by special gaskets that protect the contact groups inside the enclosures against dust and aggressive agents. In general, the coupled enclosures with the appropriate connections guarantee an IP66 (CEI EN 60529) degree of protection. Furthermore, the majority of enclosures successfully complete the high pressure hot water jet test required by standard DIN 40050 - 9 with **IP69K** classification.
Enclosures for applications with aggressive external agents (e.g. salt atmospheres or ambient pollutant) are available - green or black (upon request) coated.

ACCESSORIES FOR MULTIPOLE CONNECTORS





The CR..FS Series anchorages are designed for use with connector inserts (normal or MIXO modular) without enclosures and enable securing cables with clamps to prevent transmitting friction forces to contacts.
CR..SS anchorages (with grip to facilitate detachment) are used for earth connecting several conductors and/or of the screen of shielded cables.

INSERTS

MIXO 100A and MIXO 200A
Advantages of the crimping solution compared with traditional screw contacts:
- Greater **resistance to mechanical stress** such as vibrations and cable traction;
- Greater **resistance to corrosion** (gastight);
- Greater **speed of connection** and **constancy of execution** (independent of operator intervention);
- Improved **electrical efficiency** of the connection (less current drop).

The contacts may be disassembled with a simple screwdriver, **without the need for specific tools**. The crimping process is carried out rapidly and successfully due to **the specific oil-pressure tool**, pre-fitted with the necessary positioner and with the die (upon request).

MIXO BUS
4 poles + shield – 10A, 50V.
MIXO COAX
1 pole + shield – 10A, 50V.
CR GND
Shielding terminal plate.

Inserts CDD 24-42-72-108 poles
Signal – 10A, 250V.
Better density of contacts.

MIXO HT
High voltage – 16A, 5000V.

Inserts CQE 10-18-32-46 poles
Up to 16A, 500V.

CX 20 C
Better density up to 16A, 500V.
Up to 60 poles max.
Coding up to 20 combinations possible with the CR CPQ pins.

Crimp contacts CD-10A, CC-16A, CG-100A, CY-200A
Silver and gold plated.

CQ 12
Better density up to 12 poles.
Size 21.21.

Spring terminal connections CKS, CSE, CSS, CSH
This type of connection offers the following advantages:
- no special wire preparation **(other than stripping);**
- no cable tool is necessary (series CSH). A screwdriver is the only tool required to remove the wire from the contact;
- it offers an excellent fastening solution and a great resistance to strong vibrations;
- allows rigid and flexible wires with cross-sections between 0.14 and 2.5 mm^2 (26 - 14 AWG) to be used.