general insert index

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Spring connection 10A - 400V
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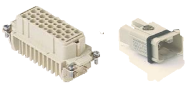

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Crimp connection 10A - 250V
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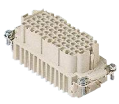
CT - CTS
Screw terminal connection 10A - 250 V
Spring connection 10A - 250 V
..... from page 54



CDD
Crimp connection 10A - 250V
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Crimp connection 10A/16A/40A
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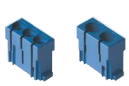

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Crimp connection
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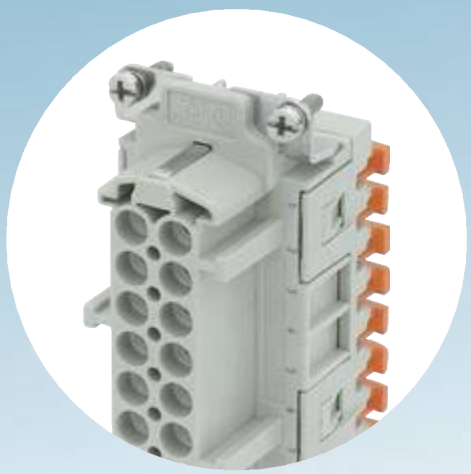
general overview

Inserts

Inserts are made of self-extinguishing thermoplastic resin UL 94 V-0, normally used for applications in a maximum ambience temperature of 125 °C. The special versions for use with a maximum ambience temperature of 180 °C are made of PPS. Different conductor connection techniques are available: screw, crimp or flexible spring connections. The contacts are in silver or gold plated brass. Inserts are numbered on both sides by laser printing or moulded. There is a large number of versions of inserts selected on the basis of the rated voltage (from 50V to 5000V), the rated current (from 5A to 200A max), the number of poles, the different load combinations required (power and signal poles within the same insert). Inserts are approved in accordance with the approval marks including UL, CSA, CC, GL and GOST. For certifications of each model/series refer to the summary statement (pages 14 and 16) and the respective pages of this catalogue.



CSH - SQUICH®
SPRING contacts
with actuator

CNE
SCREW contacts

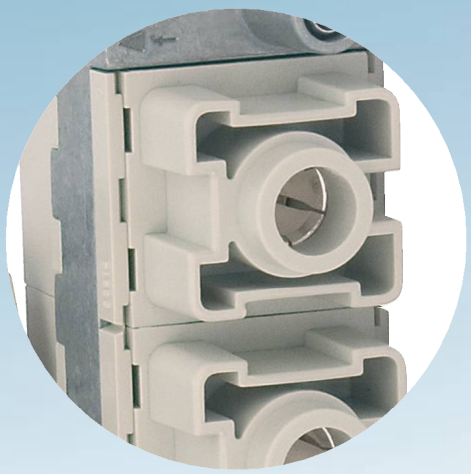
CD-CDD
CRIMP contacts

CSE
SPRING contacts

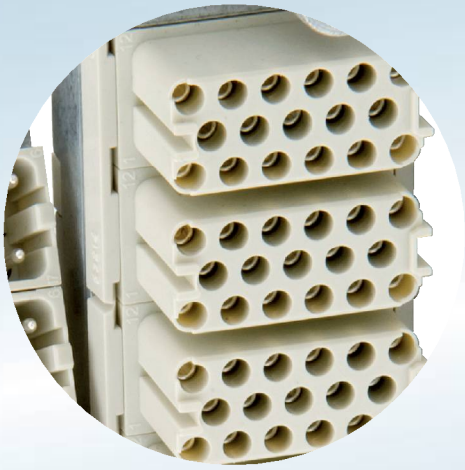
The heavy duty multipole connectors for industrial purposes are used in electric and electronic machinery, control units, electric panels, control equipment and wherever connections are required for power and signalling circuits (N.B. connectors must not be handled live). They comply with the European standard EN 61984 (derived from the German standard DIN VDE 0627) and the European standard EN 175301-801 (derived from the German standard DIN 43652) where applicable.

MIXO series inserts

The MIXO series is a system composed of modular units to satisfy specific application needs using traditional enclosures.
Inside a single enclosure various types of connections can be housed, for example electrical signals, contacts for conducting compressed air with pressures of up to 8 bars, fibre optics, Ethernet, USB and coaxial networks.
Insert compartments are composed by placing multiple modules side by side to form a single compact block; this is inserted on metallic frames with predetermined slots. Once the modules have been inserted on the frame and locked with special keys, the connector composed in this manner can be inserted into the enclosure.

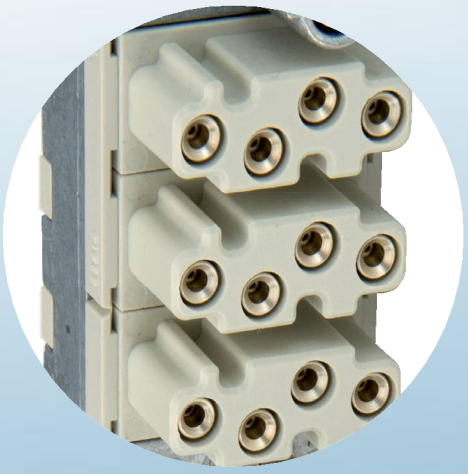


MIXO
200A - 100A - 70A
crimp contacts



MIXO
40A - 16A - 10A - 5A
crimp contacts
spring contacts
axial screw contacts

MIXO COAX, HT, RJ45
USB, PNEUMATIC
contacts for
coaxial cables
high voltage
connector adapters
RJ45 and USB
pneumatic



MIXO POF/MOST
contacts for fibre optics

conductor connections

description

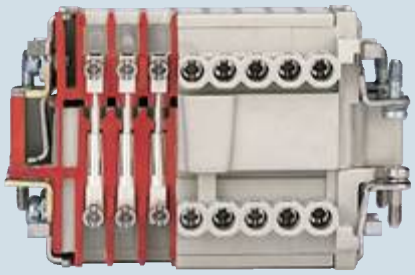
The different types of conductor connections to the male and female inserts are described on the right.
The types are summarised as follows:

- screw terminals
- spring connection terminals
- connectors with incorporated terminal block
- crimp terminals

N.B.:
for all inserts with screw terminals it is important that the right torsional torque is applied to the screws in order to prevent wrong contacts or damage to the conductor, the screw or the terminal (see data mentioned in the inserts pages).

The 10A and 16A crimp contacts are available either **silver** or **gold-plated**.
The gold-plated crimp contacts are recommended for applications with very low rated currents and rated voltages.
Thanks to the conduction characteristics of gold, the deterioration of signals is prevented and an excellent residence to the superficial oxidation of the contacts is obtained.
In particular, gold-plated contacts are recommended with signals with ≤ 5 mA current and ≤ 5V voltage.

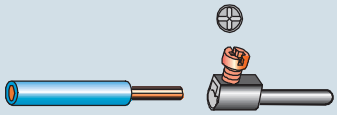
contacts with screw terminal connections with or without wire protection



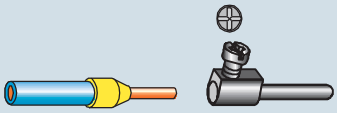
description

inserts: CK - CDA - CN - CNE - CME - CP - CX

The connections of the conductors to the female and male inserts is made via screws (in accordance with standard EN 60999-1).
Two different types of clamping are possible:
- with pressure plate for unprepared conductors
- without wire protection that requires the conductors to be prepared with bush terminals



with wire protection



without wire protection

inserts: CX..A / CX..B

The connections of the conductors to the female and male inserts is made via screws in accordance with standard.
Fully insert the wire in the back of the contact; insert a 2mm hexagonal key in the front of the contact and tighten by holding down the cable (page 21).

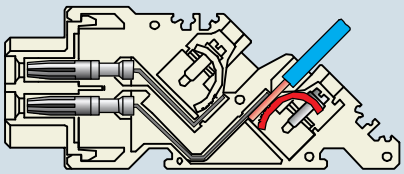
screw connected contacts in built-in terminal block

description

inserts: CTE

In this layout the wires are connected to the socket and plug insert contacts by means of a screw for all CTE inserts (in compliance with EN 60999-1).
The inserts contain:
- a terminal block at 45° for fixed installation on electrical panels or on built-in DIN EN 60715 rail, for easier wire cabling and identification operations
- screw connection with pressure plate which does not require the wires to be prepared (CTE inserts).

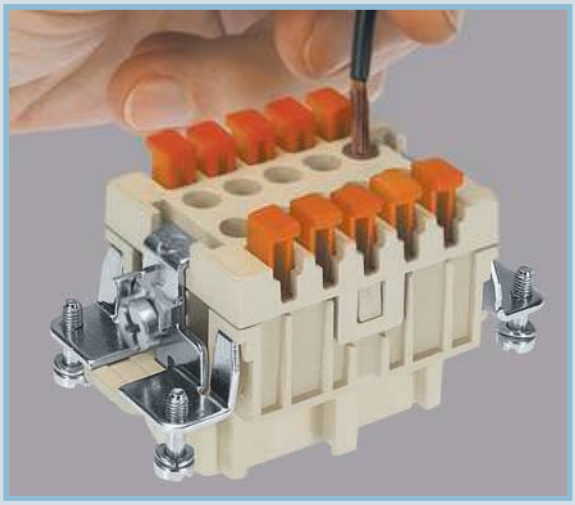
CTE insert connection



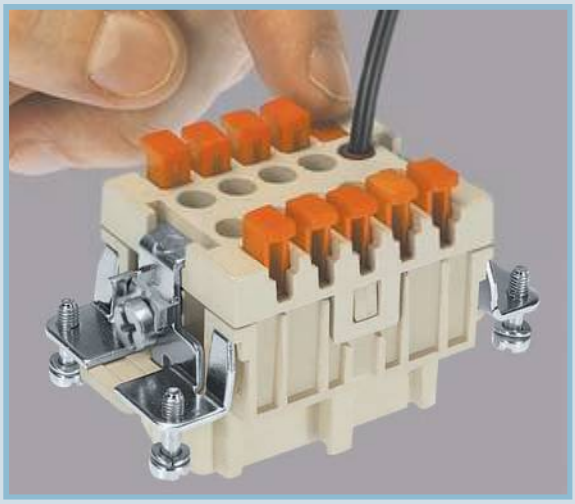
CSH Series

Connections without tools

SQUICH®



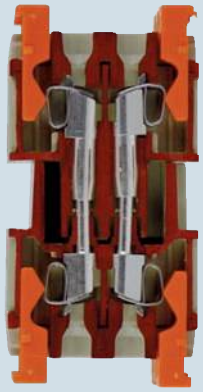
1) insert the wire



2) press

Cabling time:
50% quicker than the screw-type connection and
20% quicker than the conventional spring-type connection

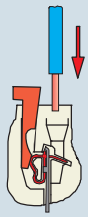
spring connected contacts with actuator button



description

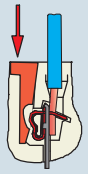
inserts: CSH

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal with actuator button.
This type of connection offers the following advantages:
- no special wire preparation **(other than stripping)**
- no cabling tool is necessary
- offers an excellent fastening solution and a great resistance to strong vibrations
- allows rigid and flexible wires with sections between 0.14 and 2.5 mm^2 (26 ÷ 14 AWG) to be used (both with non-prepared conductors and those prepared with ferrule)
- greatly reduces insert preparation and cabling times
- a screwdriver with a 0.5 x 3.5 mm blade is the only tool required to remove the wire from the contact.



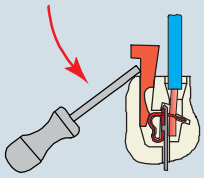
step 1

deep insertion of the conductor (with its insulation removed) in its own round seat.



step 2

press the actuator button to close the terminal.

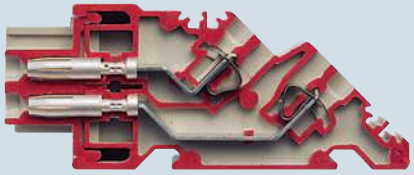


Re-opening

0.5x3.5 mm

conductor connections

contacts connected with in built-in terminal block

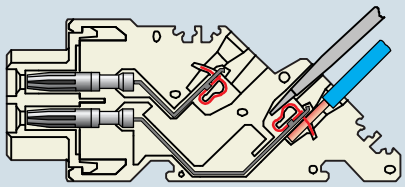


description

inserts: CTSE - CTS

With terminal block at 45° built-in for fixed installation on electrical panels or on built-in DIN EN 60715 rail, for easier wire cabling and identification operations.
Spring terminal connection which does not require wire preparation (CTSE inserts).
A screwdriver with a 3.5 x 0.5 mm blade is the only tool required to insert the wire in the contact.

CTSE insert connection

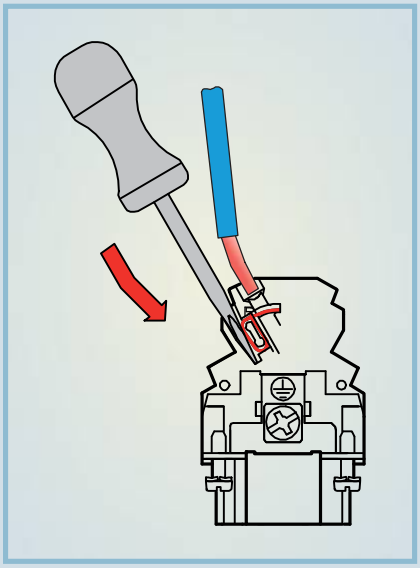


contacts connected with dual spring terminal

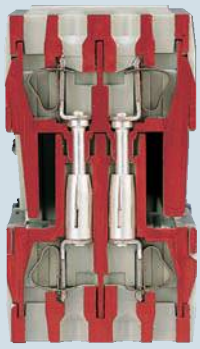
description

inserts: CSS

Equipped with two terminals per contact.
This type of connection allows a circuit to be branched off.
A screwdriver with a 3.5 x 0.5 mm blade is the only tool required to insert the wire in the contact.



contacts connected with spring terminal

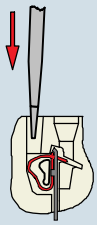


description

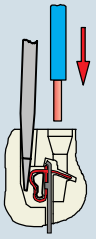
inserts: CSE - CMSE

In this layout the wires are connected to the socket and plug insert contacts by means of a spring terminal.
This type of connection offers the following advantages:
- no special wire preparation
- a screwdriver with a 3.5 x 0.5 mm blade is the only tool required to insert the wire in the contact
- offers an excellent fastening solution and a great resistance to strong vibrations
- allows rigid and flexible wires with sections between 0.14 and 2.5 mm^2 to be used (both with non-prepared conductors and those prepared with ferrule)
- allows conductibility tests under load to be carried out through the screwdriver insertion section, without splitting the insert
- greatly reduces insert preparation and cabling times

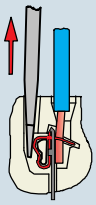
Spring terminal connection operating principles



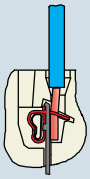
step 1
when the screwdriver is inserted in the square housing provided, the wire housing in the spring is opened.



step 2
the wire is pushed all the way in the round housing provided.



step 3
when the screwdriver is removed, the spring is held down on the inserted wire.



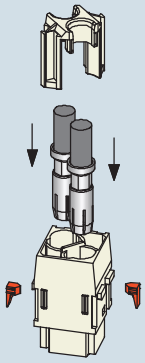
step 4
the connection is complete; pull on the wire to make sure that the spring firmly holds down the wire.

removable crimp contacts (with retainer device)

description

inserts: MIXO 100A - 200A

This layout enables the wires to be connected to the socket and plug insert removable contacts by crimping them with a crimp tool and its locating turret.
This innovative insert design, **patented by ILME,** allows crimped contacts to be quickly fitted and removed.
The special plates provided fasten the contact holder; after the insert has been mated to the other inserts and is inserted in the MIXO frame, connection is ensured and is **extremely resistant even to the most insidious** strains, such as vibrations. Contacts can be removed **without having to use any specific tools,** but by simply using a screwdriver.



100A max contacts

conductor section (mm^2)	AWG	identification
16	6 - 5	hole Ø 5.5 mm
25	4 - 3	hole Ø 7.0 mm
35	2	Ø hole 7.9 / 8.2 mm

Contacts are supplied in the silver plated version only

200A max contacts

conductor section (mm^2)	AWG	identification
16	6	
25	4	
35	2	
50	1	
70	2/0	

Contacts are supplied in the silver plated version only

removable crimp contacts (with retainer device on contacts)

description

inserts: CD - CDD - CX - MIXO

This layout enables the wires to be connected to the socket and plug insert removable contacts by crimping them with a crimp tool and its locating turret.
The crimped connections are then inserted (with a fitting tool for sizes 1 and 2, without any tools for sizes ②, 3, 4 and 5) in the above mentioned sizes and are kept firmly in place by means of the flexible device fitted on the contacts.
The wire housing entry on the contact is tapered to facilitate wire insertion and to avoid any damages occurring after the crimping operation.
To remove connections, a special extractor tool must be used.

5A max contacts

conductor section (mm^2)	AWG	number identification
0.08 ÷ 0.21	28 ÷ 24	hole Ø 0.64 mm
0.13 ÷ 0.33	26 ÷ 22	hole Ø 0.90 mm
0.33 ÷ 0.52	22 ÷ 20	hole Ø 1.12 mm

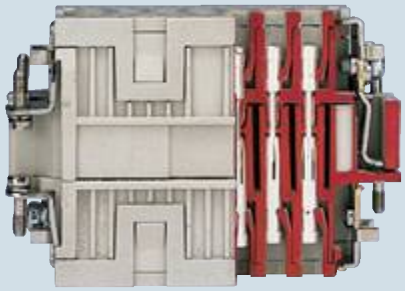
Contacts can be supplied in the silver or gold plated version

10A max contacts

conductor section (mm^2)	AWG	number identification
0.14 ÷ 0.37	26 ÷ 22	
0.5	20	
0.75	18	
1	18	
1.5	16	
2.5	14	

Contacts can be supplied in the silver or gold plated version

removable crimp contacts (with retainer device inside insert)



description

inserts:
CQ - CQE - CCE - CDC - CMCE - CX - MIXO

The connections of the conductors to the removable contacts of the male and female inserts are made via crimping with a crimping tool and locator.
The crimped connections are then introduced in the inserts of the above mentioned series and are firmly held in place by means of a retainer device fitted on the insert which holds down the contact.
The contact can be removed by simply using a flat head 3mm screwdriver through the openings provided in the inserts (CDC, CMCE 16+2, CX 8/24 series) or by means of special extractor tools, to unlock the retainer device and release the contact (CQ, CCE, CMCE, CQE, CX, MIXO series).
The wire housing entry on the contact is tapered to facilitate wire insertion and to avoid any damages occurring after the crimping operation.

16A max contacts

conductor section (mm^2)	AWG	throat identification
0.14 ÷ 0.37	26 ÷ 22	
0.5	20	
0.75	18	
1	18	
1.5	16	
2.5	14	
4	12	

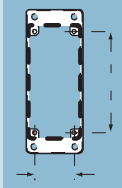
Contacts can be supplied in the silver or gold plated version.
Male contacts can also be supplied in the “advanced” version (shortened contact)

40A max contacts

conductor section (mm^2)	AWG	identification
1.5	16	hole Ø 1.75 mm
2.5	14	hole Ø 2.25 mm
4	12	hole Ø 2.85 mm
6	10	hole Ø 3.5 mm

Contacts are supplied in the silver plated version only

Enclosures and inserts combinations



rated current

enclosures size	10A	10A	10A	10A	16A	40A 16A 10A	16A	16A	16A	16A	16A	16A	35A	16A 10A	40A 10A	80A 16A	200A 100A 70A 40A 16A 10A 5A	16A
	insert series																	
	CK, CKS	CD	CT, CTS	CDD	CDA, CDC	CQ, CQE	CCE	CNE	CSE, CSS, CSH	CTE, CTSE, CT	CME	CMSE, CMCE	CP	CX	CX	CX	MIXO	JCNE, JCSE
	insert polarity + ⏚																	
21.21	3 4	7 8#				12 5												
32.13						8 4/2												
49.16		15			10												①*	
66.16		25		38	16													
66.40		50		76	32													
44.27				24		10	6	6	6	6✻							②*	6
57.27				42		18	10	10	10	10✻	3+2	3+2		8/24			③*	10
77.27		40	40✻	72		32	16	16	16	16✻	6+2	6+2	6		6/36 12/2	4/0 4/2	④*	16
104.27		64	64✻	108		46	24	24	24	24✻	10+2 16+2	10+2 16+2★				4/8	⑥*	24
77.62		80		144		64	32	32	32	32✻	12+4	12+4	12				⑧*	32
104.62		128		216		92	48	48	48	48✻	20+4 32+4	20+4 32+4★					⑫*	48

\# = polarity without earth contact
✻ = can only be mounted in bulkhead housings (6/10/16/24 polarity, also usable with BIG series hoods)
◯* = number of modular inserts that may be inserted in the enclosures
★ = polarity not available in CMSE version

The polarity values in "**red**" are obtained using double inserts
The polarity values in "**green**" must be mounted exclusively in insulated enclosures (CM - CMA and MM - MMA versions) or T-Type series
The polarity values indicated as exponentials in the CME, CMCE and CMSE inserts identify the pilot contacts for advanced opening