



Multipole connectors

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18

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## THE TRADITION OF INNOVATION SINCE 1938

ILME designs and manufactures complete solutions for industrial connections.

Headquartered in Milan and with subsidiaries in the key countries driving the progress of automation, ILME is an industry leader in the main world markets.

People are vital to success and growth at ILME, sharing a passion for innovation, utmost responsibility and participation.

The Company is committed to developing technology in the areas that most impact the future of the industries it serves: high quality and safe cabling, research on the most suitable materials, rapid turnaround and readily available services while striving for energy saving and environmental safeguard.

## COMMITMENT TO INDUSTRY

Technological innovation is the main pillar of ILME competitiveness.

In the electrical connection sector of industrial automation, characterized by the need for top performance and reliability, ILME is an acknowledged leader with its own patents and a global benchmark supplier of major companies worldwide.

ILME offers a fully integrated range of high-quality products and services for every type of connection to suit any application requirements.



AUTOMATION



RAILWAY



ENERGY



NAVAL



FOOD  
& BEVERAGE



AGRONOMY



OUTDOOR



TRANSPORT



LIGHT  
& SOUND



PLASTIC



CHEMICAL



AIRPORT

# IMPORTANT NOTES

Strictly tied to our general conditions of sales

- 1 ILME designs and manufactures complete solutions for Heavy Duty electrical power connections.  
The connector (although offered to the user as a variety of elements, usually inserts and enclosures, to allow the selection of the ideal combination) has been **designed as a complete connector** and tested to be compliant with the essential safety requirements of the EU Low Voltage Directive 2014/35/EU and in particular the EN 61984 standard. The design of this "whole" system guarantees that every allowed combination of inserts, enclosures and accessories cannot result as improper.

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- 2 The products in this catalogue alone cannot guarantee the best functionality upon installation, as this depends also on their correct **"putting into service"** which must be performed in compliance with the applicable system safety standards and according to the "rule of the art". Therefore the effectiveness of the installation of the connector depends on the choices of the end user who must also take into account the following safety requirements.

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- 3 Connectors must **not be connected or disconnected when live or under load**.

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- 4 After wiring the inserts it is necessary **to verify the continuity of the protective earth connections**.

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- 5 The correct coupling of the inserts is guaranteed only if they are installed (with the four fixing screws supplied) inside the corresponding enclosures or onto compatible accessories in this catalogue. ILME S.p.A. is not responsible for any different application.

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- 6 Wiring of **screw-type terminal connections** must be carried out applying the correct tightening torque in order to avoid false contacts or damage to the conductor, the screw or the terminal.

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- 7 **Crimping tools** and contacts used should preferably be supplied by the same manufacturer to avoid difficulties with the insertion and retention or damaging of the contacts themselves.

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- 8 Correct wiring of spring-clamp connection inserts is guaranteed only when the correct screwdriver indicated in the specific catalogue, or possibly on the insert, is used.

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- 9 Avoid forcing the contacts during **connection and disconnection**. Connectors must be coupled and uncoupled in the axial direction with respect to the contacts, without bending and pulling the attached conductor bundles or cables.

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- 10 Installation of two **inserts side by side**, in enclosures with two bays, must respect the polarity drawing marked on the insert (or the contact side view, as shown in this catalogue) to avoid inverted coupling.

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- 11 Installation of two or more identical connectors side by side is recommended only with the use of coding pins in order to avoid mismatched couplings.

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- 12 In order to keep the declared degree of protection (IP code), enclosures must be completed with cable glands and/or other accessories with at least an equal degree of protection.

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- 13 Moreover, the IP degree of protection (according to EN 60529) is guaranteed when the enclosures, complete with inserts, are coupled and locked with their locking levers (or devices).

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- 14 Finally, Please note:
  - ILME cannot be held responsible for individual components in uses other than those described in this catalogue.
  - ILME cannot be held responsible for incorrect connector selection in relation to the environmental conditions of the application (e.g.: influence of ambient temperature, moisture, environmental pollution, etc.).

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- 15 Connector inserts and their enclosures are generally compatible with similar/equivalent products from other manufacturers, according to the last samples tested. Full compatibility cannot be guaranteed in the event of technical changes made by other manufacturers. In particular, maximum performance of IP68 enclosures (CG Series) cannot be guaranteed when coupled with other manufacturers' products.

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- 16 **Spare parts** are supplied in minimum quantities only with the purpose to allow replacement of damaged parts. To avoid invalidation of warranty, products should be modified or repaired only by ILME: the integrity of their functionality - e.g.: their degree of protection - can no longer be guaranteed if products are modified/repared by end-users. In any case, the liabilities for correct choice, assembly and use, are totally at charge of the installer and the end-user.

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- 17 ILME S.p.A. takes no responsibility in verifying whether the components herein contained comply with any specific regulations of fields of application.

## CE MARKING

As from 1<sup>st</sup> January 1997, in order to make available electrical products on the European market the manufacturer must ensure these bear the relevant CE marking, in line with the Low Voltage Directive 73/23/EEC\* (implemented in Italy as L. D. 18-10-1977 no. 791) and its modification 93/68/EEC\* (implemented in Italy as L.D. 25-11-1996 no. 626/96, published in the supplement to the Gazzetta Ufficiale of 14-12-1996).

The CE marking must be visible on the product or, if this is not possible, on the packaging, the instructions for use or on the warranty certificate. It acts as a declaration by the manufacturer that the product complies with all relevant EU directives regarding its field of application.

### **ILME products bear the CE marking on the actual product or its packaging.**

Almost all ILME products fall within the scope of the Low Voltage Directive. A declaration of conformity is required in order to be able to apply the CE marking. This declaration, to which the market is not directly entitled, must be made available to the controlling authorities (in Italy, the Ministry of Economic Development) at all times. In it, the manufacturer declares the technical safety standard(s) followed in the manufacture of the product. These standards must be, in decreasing order of preference:

- a European standard (EN prefix)
- a European harmonisation document (HD prefix)
- an international IEC standard
- a national standard
- in the absence of reference standards, the manufacturer's internal specifications guaranteeing compliance with the basic safety requirements of the directive.

Compliance with harmonised technical standards (i.e. ratified by CENELEC) also constitutes presumption of compliance with the basic safety requirements of the directives.

The CE marking of ILME products results from the declaration of conformity of the product to harmonised standards or international IEC standards.

Through the CE marking, ILME declares full compliance, not merely with the directive's basic safety requirements, but also with those international or national EU standards on which voluntary safety certification markings are based (e.g. IMQ and VDE). In this way, ILME intends to give the CE marking the value of self-certification in terms of safety, given the loss in legal value of voluntary certifications issued by third parties, ratified by directive 93/68/EEC\*.

Notwithstanding the above, practically all ILME products still bear voluntary conformity markings.

The above mentioned EU declaration of conformity becomes null and void when the assembly of products includes one or more components not manufactured by ILME and without CE marking.

On 29<sup>th</sup> March 2014, the Official Journal of the European Union published the new Low Voltage directive 2014/35/EU dd. 26<sup>th</sup> February 2014, a recast version of directive 2006/95/EC, which is in force since on 20<sup>th</sup> April 2016.

**▲ The information contained in this catalogue is not binding and may be changed without notice.**

\* **Note:** The next legal reference for the Low Voltage Directive was 2006/95/EC, as consolidation of the original Directive 73/23/EEC + Directive 93/68/EEC.



UNI EN ISO 9001: 2015  
Design, manufacture and distribution  
of industrial electrical equipment (IAF 19)  
Certificate No. 50 100 11133



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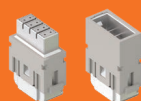
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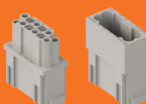
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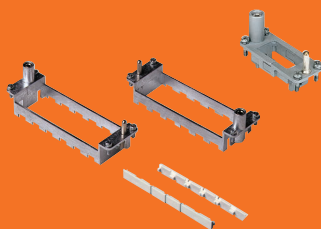
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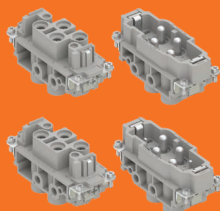
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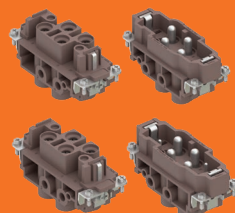
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# MIXO SERIES

## GENERAL OVERVIEW

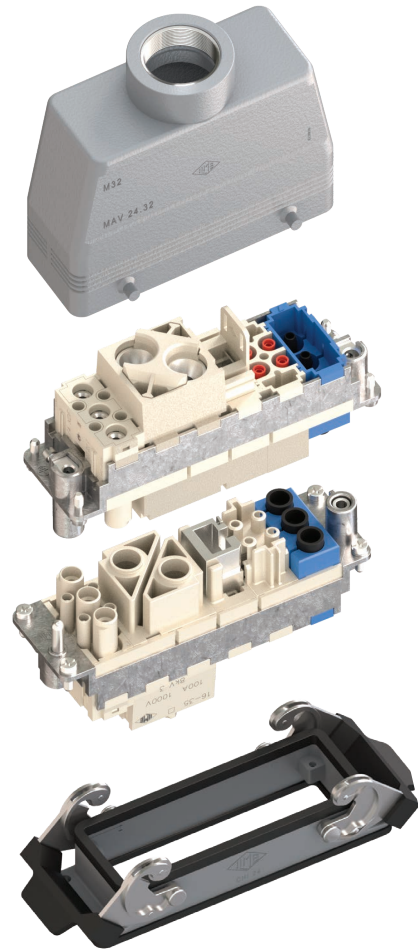
The MIXO series is a system of modular units for special applications that uses the traditional ILME enclosures. Each enclosure can house different types of connections such as: electric signals and contacts for the conduction of compressed air with pressure values of up to 8 bars.

The inserts are arranged side by side to form a single **compact block** which is inserted into metallic frames with mandatory housings. Once the modules have been inserted and locked with the special tabs, the connector can be placed into the enclosure.

The modular system makes it easy to access a series of contacts inserted in the frame (e.g., for substitution, check or the addition of signals with new inserts for needs not foreseen during the initial installation) without having to disassemble the entire connector.

ILME MIXO series of modular connectors is an open connector system that provides versatile configuration to the users' individual requirements, giving the **freedom to assemble a customized connector** from a range of almost 40 modules for electrical power, data transmission, optical signals or air. The module range is continuously expanded, allowing new configurations to be realised.

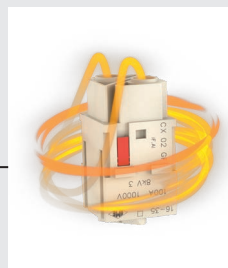
The use of enclosures provides the possibility of innumerable **applications**.



**POWER/  
SIGNAL**



**POWER**



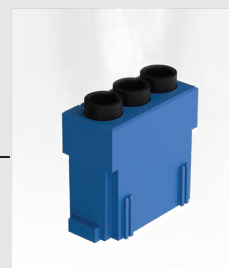
**DATA  
TRANSMISSION**



**FIBRE OPTIC**

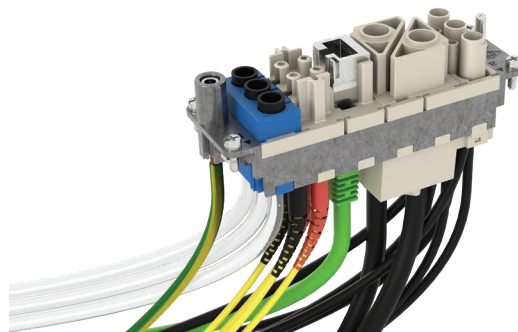


**PNEUMATIC**

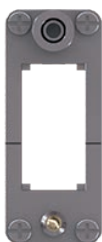


The MIXO series can be used with **5 different frame sizes:**

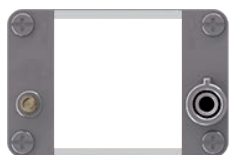
Frames	one or two-lever metallic enclosures
<b>CX 01 T</b>	size "49.16"
<b>CX 02 TM/TF</b>	size "44.27"
<b>CX 03 TM/TF</b>	size "57.27"
<b>CX 04 TM/TF</b>	size "77.27"
<b>CX 06 TM/TF</b>	size "104.27"
<b>CX 04 TM/TF</b> (x 2)	size "77.62"
<b>CX 06 TM/TF</b> (x 2)	size "104.62"



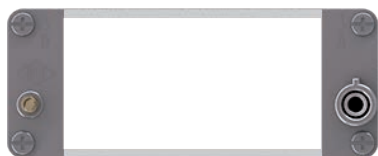
**CX 01 T**  
1 module



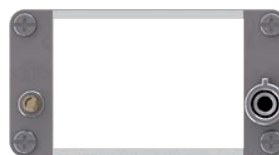
**CX 02 TF/TM**  
2 modules



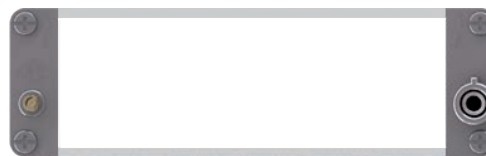
**CX 04 TF/TM**  
4 modules



**CX 03 TF/TM**  
3 modules



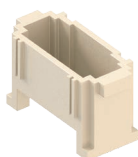
**CX 06 TF/TM**  
6 modules



Possibility – to be verified case-by-case – to use the recently added MIXO **HNM frames** (provided with special gold plated PE contacts) together with R series of crimp contacts and the relevant connector hoods and housings, to produce where

required an **HNM connector** (High Number of Matings, up to 10.000 cycles of operation). For more information refer to ILME News 2017 Catalogue.

Fill the unused frame slots with **CX FM dummy module**



In addition, the MIXO series can be used with the **COB series panel supports**.

Frames	COB panel supports part No.
<b>CX 02 TM/TF</b>	fixed: <b>COB 06 BC</b> and <b>COB TCQ</b>
	mobile: <b>COB TSF</b> , <b>COB TSFS</b> and <b>COB 06 CMS</b>
<b>CX 03 TM/TF</b>	fixed: <b>COB 10 BC</b> and <b>COB TCQ</b>
	mobile: <b>COB TSF</b> , <b>COB TSFS</b> and <b>COB 10 CMS</b>

Frames	COB panel supports part No.
<b>CX 04 TM/TF</b>	fixed: <b>COB 16 BC</b> and <b>COB TCQ</b>
	mobile: <b>COB TSF</b> , <b>COB TSFS</b> and <b>COB 16 CMS</b>
<b>CX 06 TM/TF</b>	fixed: <b>COB 24 BC</b> and <b>COB TCQ</b>
	mobile: <b>COB TSF</b> , <b>COB TSFS</b> and <b>COB 24 CMS</b>

## THE COMPLETE RANGE

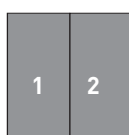
2018 products are marked with the **+** symbol.

Calculate the number of frame slots taken up by the required inserts (frame slot 1, 2 or 3 modules) and select the right frame according to the number of required modules (available 1, 2, 3, 4 and 6 modules).

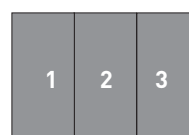
Inserts	Contact type	Signal type	Kind of connection	Rated current (A)	Rated voltage (V)	No. of frame slots
CX 01 YF/M	main	electric	crimp	200	1000	2
CX 01 YPEF/M	PE	—	crimp	200	—	2
<b>+</b> CX 01 GF/M	main	electric	crimp	100	830	1
CX 02 GF/M	main	electric	crimp	100	1000	2
CX 02 7F/M	main	electric	crimp	70	1000	1
CX 02 4AF/M	main	electric	axial screw	40	1000	1
CX 02 4BF/M	main	electric	axial screw	40	1000	1
CX 02 4F/M	main	electric	crimp	40	1000	1
CX 03 4F/M	main	electric	crimp	40	400/690	1
CX 03 4BF/BM	main	electric	crimp	40	500	1
CX 3/4 XDF/M	main	electric	crimp	40/10	830	1
CX 04 XF/M	main	electric	crimp	40	830	1
CX 05 SF/M	main	electric	spring	16	400	1
CX 06 CF/M	main	electric	crimp	16	500	1
<b>+</b> CX 06P CF/M	main	electric	crimp	16	830	1
CX 08 CF/M	main	electric	crimp	16	400	1
<b>+</b> CX 08 I6F/M	main	electric	crimp	5	50	1
CX 20 CF/M	main	electric	crimp	16	500	2
<b>+</b> CX 12 DF/M	main / auxiliary	electric	crimp	10	250	1
CX 17 DF/M	main / auxiliary	electric	crimp	10	160	1
CX 25 IBF/M	main / auxiliary	electric	crimp	4	50	1
CX 25 IF/M	main / auxiliary	electric	crimp	4	50	1
<b>+</b> CX 02 CHF/M	main	electric	crimp	16	2500	1
CX 02 HF/M	main	electric	crimp	16	2900/5000	2
CX 02 BF/M	seat for two shielded connectors (refer to CX 04 B, CX 01 B, CX 01 BC, CX 08 B)					2
CX 01 BCF/M	main / auxiliary + shield	electric	crimp	16	50	—
CX 01 BF/M	main / auxiliary + shield	electric	crimp	10	50	—
CX 04 BF/M	main / auxiliary + shield	electric	crimp	10	50	—
CX 08 BF/M	main / auxiliary + shield	electric	crimp	5	50	—
CX 03 P	pneumatic Ø 1,6 - 3,0 - 4,0 mm	air	push-in	—	—	1
CX 02 P	pneumatic Ø 6,0 mm	air	push-in	—	—	1
CX FM	none (dummy module)	—	—	—	—	1
CX 01 J8F/M/IM	RJ45	electric	crimp/IDC	---	—	1
CX 01 JF/M	RJ45 + auxiliary	electric	crimp	10	250	2
CX 02 JF/M	RJ45 + auxiliary	electric	crimp	10	250	3
CX 01 UF/M	USB	electric	—	—	—	1
CX 01 9VF/M	D-SUB	electric	crimp	5	50	1
<b>+</b> CX 01 9VTF	D-SUB	electric	screw	5	50	1
CX 04 LF/M	POF / MOST	optic	crimp	—	—	1
CX 04 RF/M	coaxial	electric	crimp	—	—	1
CX 04 SCF/M	SC fibre optic	optic	crimp/glue	—	—	1



size: 1 frame slot



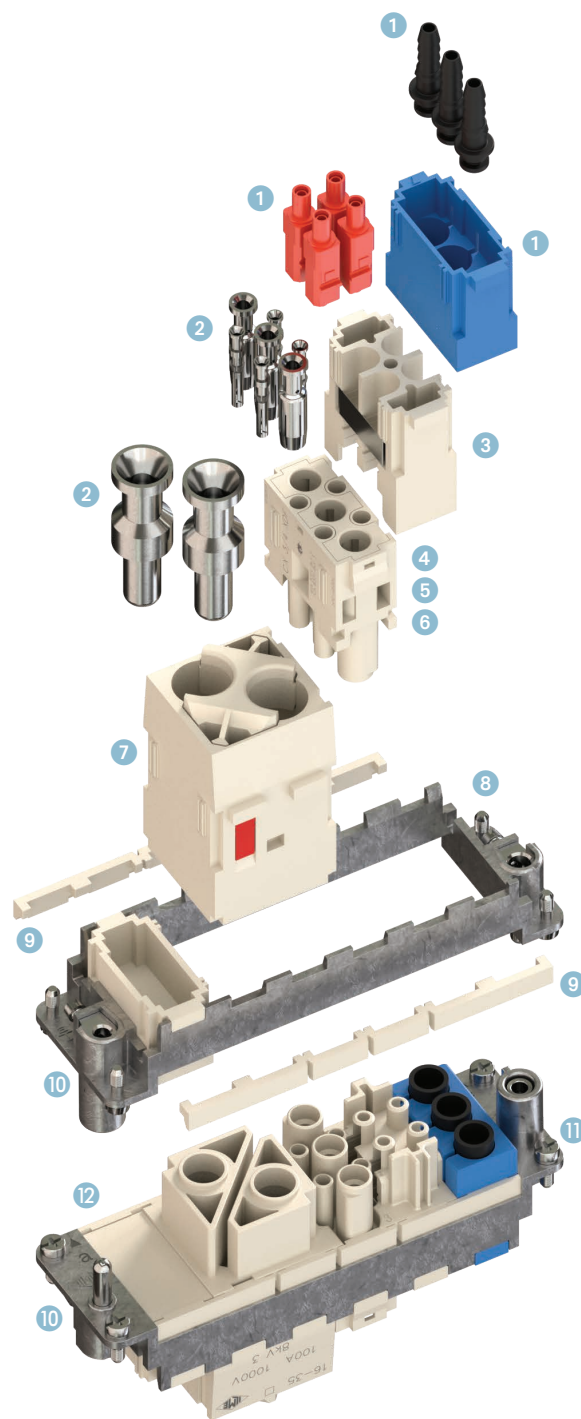
size: 2 frame slots



size: 3 frame slots

## TECHNICAL CHARACTERISTICS

- ❶ Pneumatic contacts in plastic with insertion tube connection.
- ❷ Electric contacts in silver-plated or gold-plated brass with connections to the conductors via crimping, spring clamp or axial screw.
- ❸ Modular inserts of identical size with insertion system for forming the complete module and frame lock tab.
- ❹ Inserts in self-extinguishing thermoplastic material, reinforced with glass fibre, UL 94V-0 approved, with a working temperature range of -40 °C to +125 °C.
- ❺ Inserts in conformance with the requirements of the EN 61984 standard and certified and marked with the UL, CSA, CQC, DNV-GL, EAC marks.
- ❻ Position of contacts identified with numbers or codes on both sides of every insert.
- ❼ Inserts with patented “swallowtails” to prevent incorrect coupling.
- ❽ Module carrier frames for hoods and housings with mandatory housings and polarity, in die-cast zinc alloy.
- ❾ Module lock tab, may be divided according to the number of modules used; it guarantees a perfect stability of the modules during wiring and coupling/uncoupling of the connectors.
- ❿ Asymmetric earth contacts (two for frame) with wide contact surface to prevent incorrect coupling; when two or more identical connectors of the MIXO series are used, coded pins prevent incorrect coupling (refer to pages 486, 487 and 491 catalogue CN.16).
- ⓫ Captive frame fastening screws, with flexible spring washer.
- ⓬ Dummy module for unused frame slots.



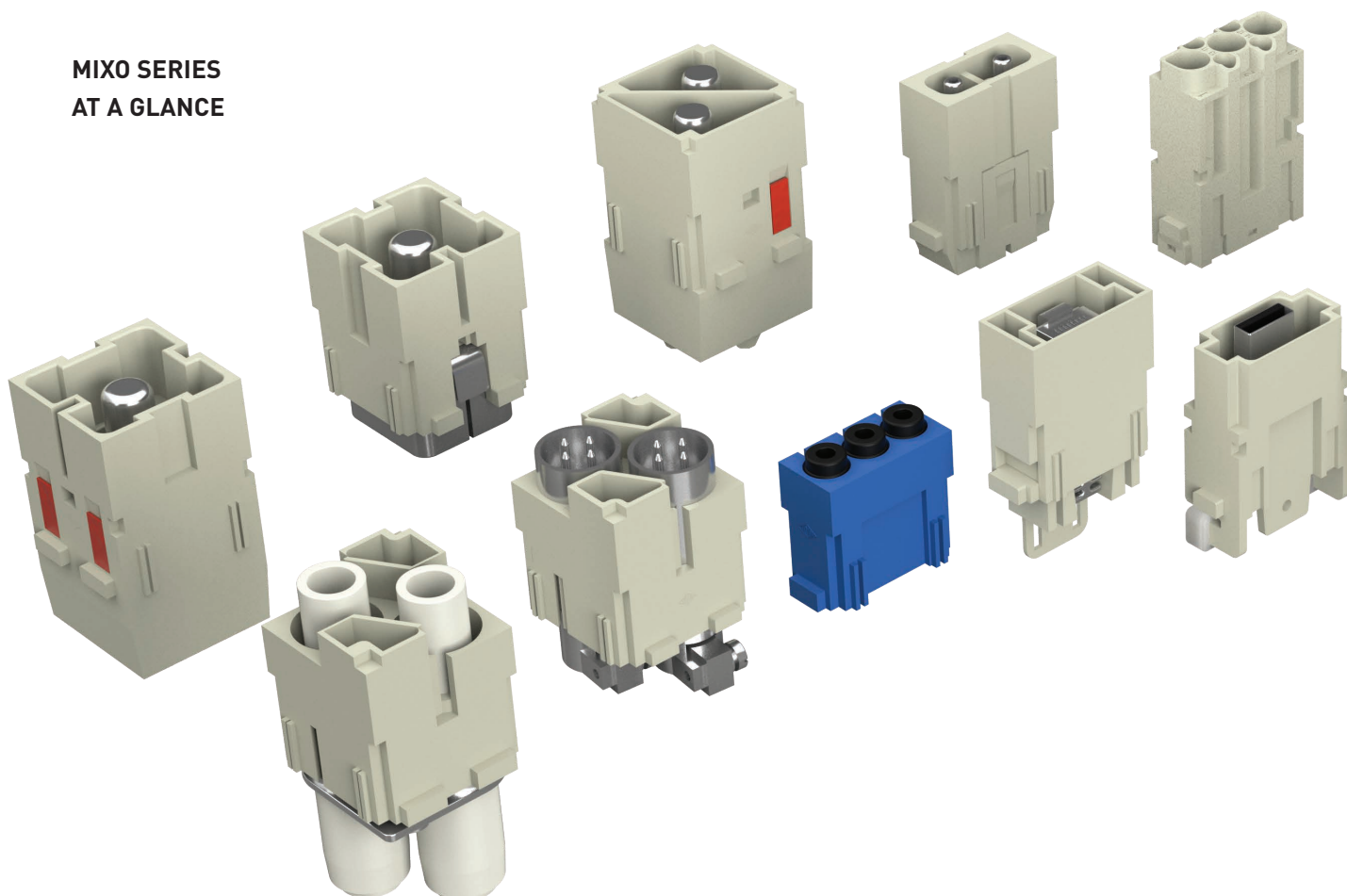
Watch  
our  
online  
tutorial

## MIXO NOVELTIES

The MIXO series, featuring a flexible modular design for an easy and safe installation, is now further expanded with the addition of 5 new single-sized modules and the upgrade of 1 module, widening the MIXO portfolio to 37 modules, as follows:

- **CX 08 I6F/I6M new MIXO Gigabit module**  
single-sized, 8 poles, 5A (crimp) – 50V 0,8kV 3 with relevant accessories
- **CX 06P CF/CM new MIXO 16A module**  
6 poles IP2X protected (crimp) for use up to 830V AC or DC, 16A 830V 8kV 3
- **CX 01 GF/GM new MIXO 100A module**  
1 pole (crimp) for use up to 830V AC or DC, 100A 830V 8kV 3
- **CX 01 9VTF new MIXO D-Sub 9-pole female module**  
for RS-485 T-connection, with cable clamp accommodation for 2 cables
- **CX 02 CHF/CHM 1 new MIXO High Voltage module**  
2 poles 16A (crimp) 2500V AC or DC
- **Upgrade of CX 12 DF/ DM MIXO module** to new 250V AC or DC rating in Pollution Degree 3 (was 160V in PD3, 250V in PD2)

### MIXO SERIES AT A GLANCE



## MIXO SERIES ADVANTAGES

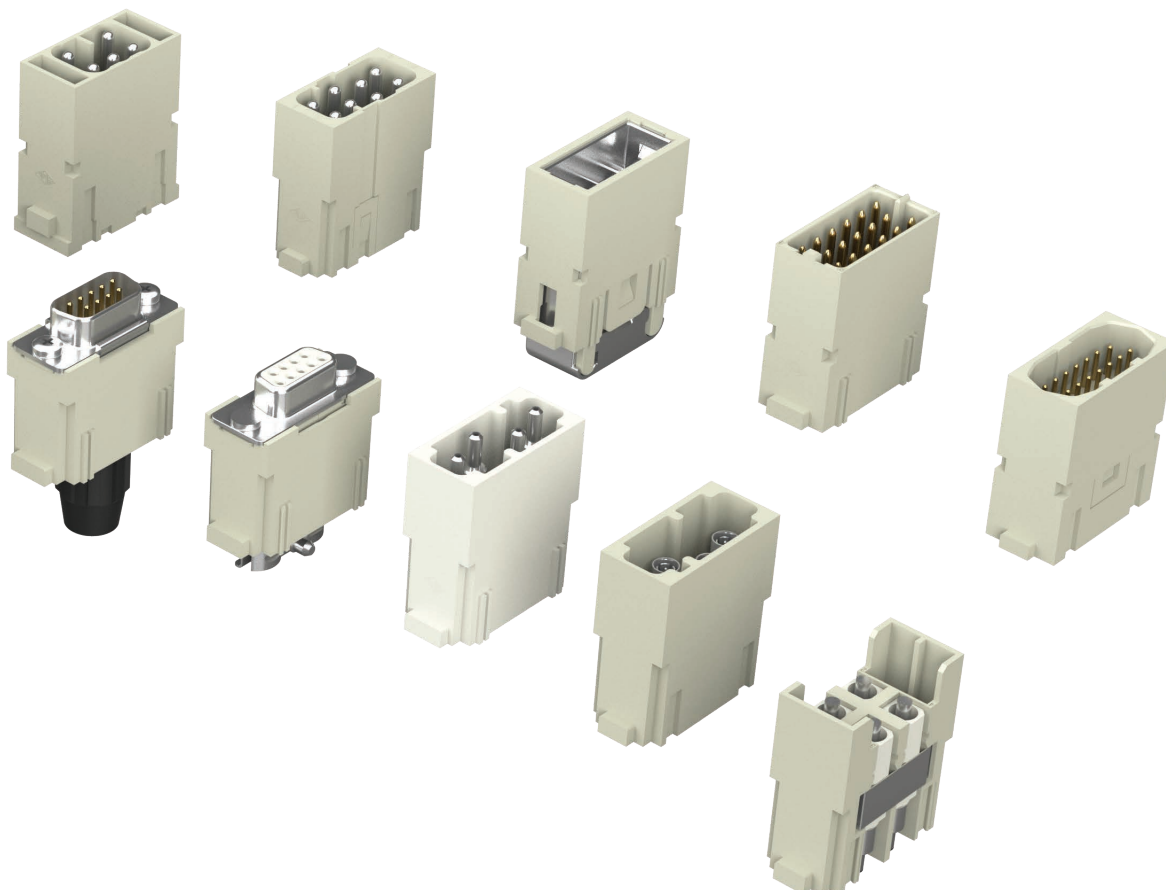
- Easy and user-friendly assembly of the complete multi-module insert before fixing it on the relevant sized metal frame;
- use of proprietary ILME technology providing each module with “swallowtail” lateral keys/keyways, for reciprocal locking of modules and overall assembly of the insert into rigid (non hinged) frames with snap-in locking strips;
- faster and easier assembly compared with competitor solutions (e.g. no need for additional, optional plastic stoppers to lock the hinge, no need for a hinged frame at all, easier handling of modules as a complete block than e.g. 6 independent parts);
- intermateability at “complete connector” (modules in frame) with other industry standard products;
- robust and long lasting prevailing crimp connection technology (largely preferred over screw type technology in high vibration and shock environments);
- possibility - to be verified case-by-case - to use the recently added MIXO HNM frames (provided with special gold plated PE contacts) together with crimp contacts R series and the relevant connector hoods and housings, to produce where required an HNM connector (High Number of Matings, up to 10.000 cycles of operation).

In addition, each of the new inserts adds the following individual features:

- more robustness and an industrial-oriented solution for high speed Gigabit Ethernet data transmission (MIXO Gigabit);
- more safety during maintenance in applications where power is distributed and controlled through inverter-based drives (new protected, finger-proof male inserts CX 06P CM/CF);
- more versatility in:
  - forming high power connector modular combinations (new 100A single-sized module CX 01 GF/GM);
  - serving widely adopted PROFINET RS-485 data bus systems requiring T-connection (new D-Sub 9-pole female module CX 01 9VTF);
  - providing a single-sized solution for 2 poles high voltage applications with CX 02 CHF/CHM;
- higher operating voltage (upgraded CX 12 DF/DM).



Find more  
information on  
our products at  
[www.ilme.com](http://www.ilme.com)



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## MIXO Gigabit CX 08 I6F/I6M

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MIXO Gigabit module,  
single-sized, 8 poles,  
5A (crimp) – 50V 0,8kV 3  
with relevant accessories



Find more  
information on  
our products at  
[www.ilme.com](http://www.ilme.com)



## TECHNICAL FEATURES

### MIXO Gigabit - CX 08 I6F/I6M

- **8 poles shielded connector module** for 4-pair screened cables for high speed data transmission up to Cat. 6A;
- **5A rated current per pole**, more than twice compared with RJ-45 IEC 60603-7-xxx based connectors, with plenty of headroom for future power increase of “power over data transmission lines” technologies (e.g. PoE+);
- **robust and compact shielded connectivity solution** for high speed data transmission for harsh environment in industrial applications (e.g. Gigabit Ethernet for Cat. 6A transmission);
- relying on **solid machined gold plated crimp contacts CI series** (compared with the inferior mechanical robustness and current-carrying capacity of even the more sophisticated RJ-45 IEC 60603-7-xxx connectors);
- **combinability** of this module, in the same modular connector, with other power modules of the MIXO series;
- **robust zinc alloy shield incorporating seat** for a cable clamp, either screw-type or (optional) shield clamp for crimping;
- independent shield from the potential of the protective earth (PE) connection provided by the **MIXO metal frame**;
- **suitable for Profinet applications** and for actuator/sensor screened cable assemblies.

8 poles shielded  
connector module  
for 4-pair screened  
cables

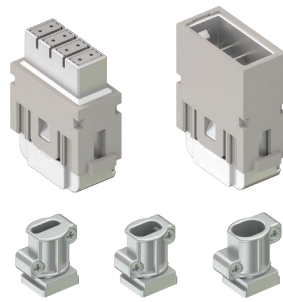


# Gigabit 8 poles 5A - 50V

The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

frames for modular units pages  
44-45

modular units,  
crimp connections



5A crimp contacts  
gold plated



- we recommend the use of CRF / CRM code pins

**AVAILABLE APRIL 2018**

description	part No.	part No.
without contacts (to be ordered separately) - female insert for female contacts - male insert for male contacts	<b>CX 08 I6F</b> <b>CX 08 I6M</b>	
cable clamp for 5-7 mm cable diameter cable clamp for 7-10 mm cable diameter cable clamp for 10-12 mm cable diameter	<b>CX 5/7 CA</b> <b>CX 7/10 CA</b> <b>CX 10/12 CA</b>	
5A female crimp contacts 0,08-0,21 mm <sup>2</sup> AWG 28-24 0,13-0,33 mm <sup>2</sup> AWG 26-22 0,33-0,52 mm <sup>2</sup> AWG 22-20		<b>CIFD 0.2</b> <b>CIFD 0.3</b> <b>CIFD 0.5</b>
5A male crimp contacts 0,08-0,21 mm <sup>2</sup> AWG 28-24 0,13-0,33 mm <sup>2</sup> AWG 26-22 0,33-0,52 mm <sup>2</sup> AWG 22-20		<b>CIMD 0.2</b> <b>CIMD 0.3</b> <b>CIMD 0.5</b>

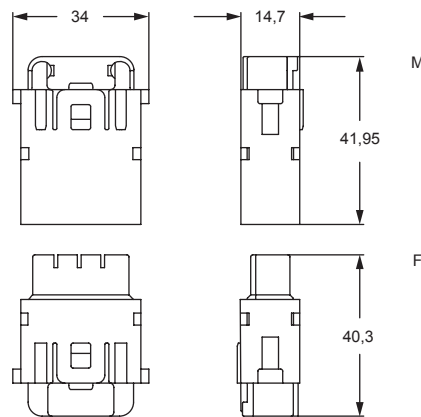
gold plated

- characteristics according to EN 61984:

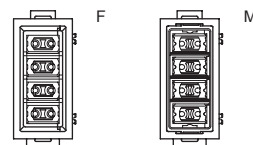
**5A 50V 0,8kV 3**

- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit:  $-40 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$
- suitable for bus signals, in particular for Ethernet Cat. 6A (Gigabit)
- shield electrically separated from the PE of the housings
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- for crimp contacts CI series use:  
**CIPZ D** crimping tool  
**CITP D** turret head

**CX 08 I6F, CX 08 I6M**

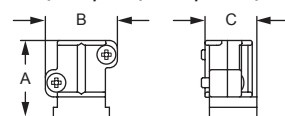


contacts side (front view)  
side with reference arrow ▲

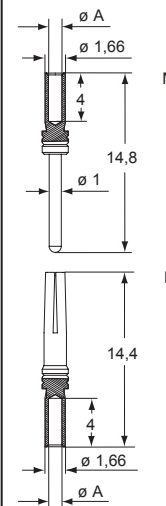


- 1 frame slot

**CX 5/7 CA, CX 7/10 CA, CX 10/12 CA**



part No.	A	B	C
<b>CX 5/7 CA</b>	19,1	18	12,95
<b>CX 7/10 CA</b>	19,1	18	12,95
<b>CX 10/12 CA</b>	19,1	20,8	12,95



**CIF, CIM contacts**

conductor section mm <sup>2</sup>	conductor slot $\varnothing A$ (mm)	conductors stripping length (mm)
0,08-0,21	0,64	4
0,13-0,33	0,90	4
0,33-0,52	1,12	4

## tools and accessories for crimp contacts

for contacts of insert series:

pages

MIXO (CI contacts)

18

manual crimping tool  
turret head



**N.B.:**  
CITP D turret head (to be ordered separately)

description	part No.
crimping tool for CI contacts DANIELS AFM8 model (turret excluded)	CIPZ D
turret head - for CI contacts (CIFD and CIMD series)	CITP D

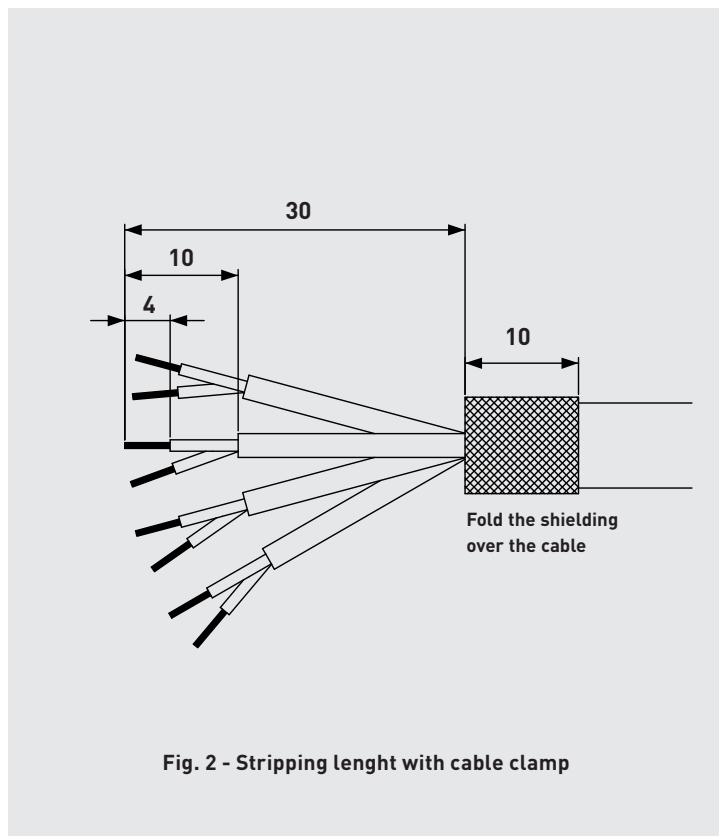
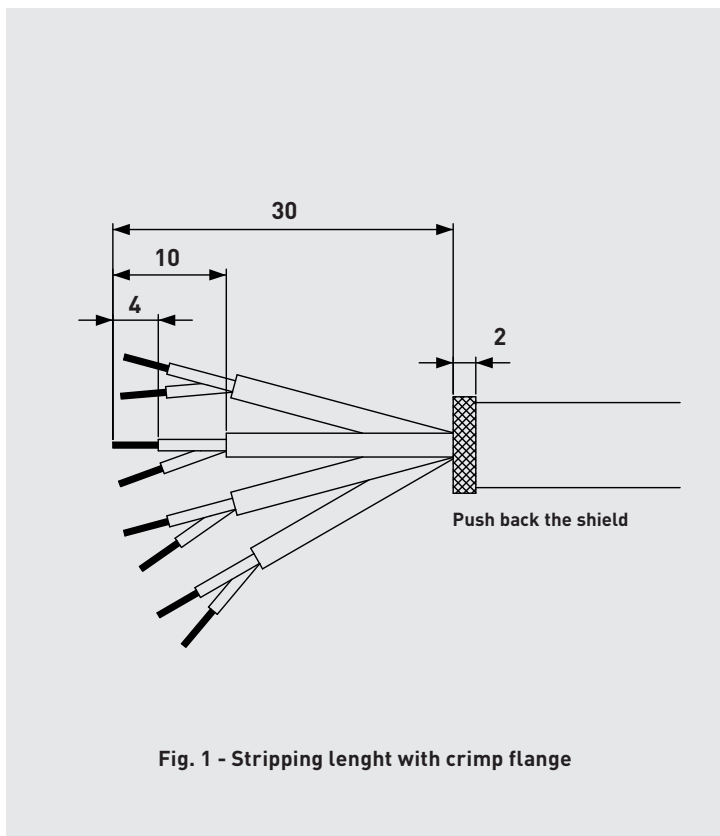
### ASSEMBLY INSTRUCTIONS

Please refer to pages 20-21.



Watch  
our  
online  
tutorial

ASSEMBLY INSTRUCTIONS



Connection				Application	
Colour code T568		PROFINET	RJ-45 PIN NO.	10BT/100BT	1 Gigabit/ 10 Gigabit Ethernet
A	B				
W - G	W - O	Y	1	✓	✓
G	O	O	2	✓	✓
W - O	W - G	W	3	✓	✓
BL	BL		4		✓
W - BL	W - BL		5		✓
O	G	BL	6	✓	✓
W - BR	W - BR		7		✓
BR	BR		8		✓

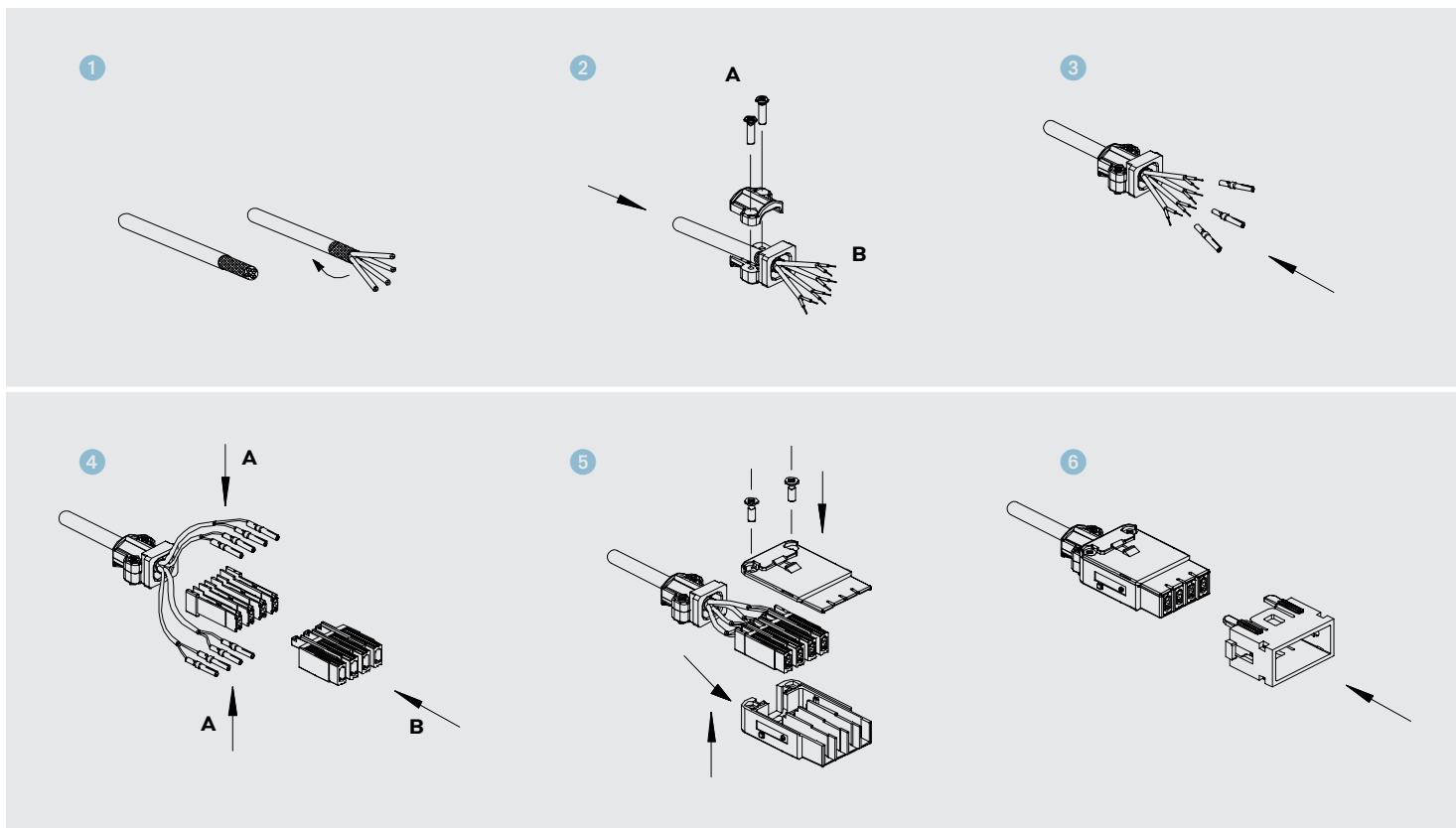
Legend  
 BL - Blue  
 G - Green  
 W - White  
 BR - Brown  
 O - Orange  
 Y - Yellow

Table. 1 - MIXO Gigabit wiring colours

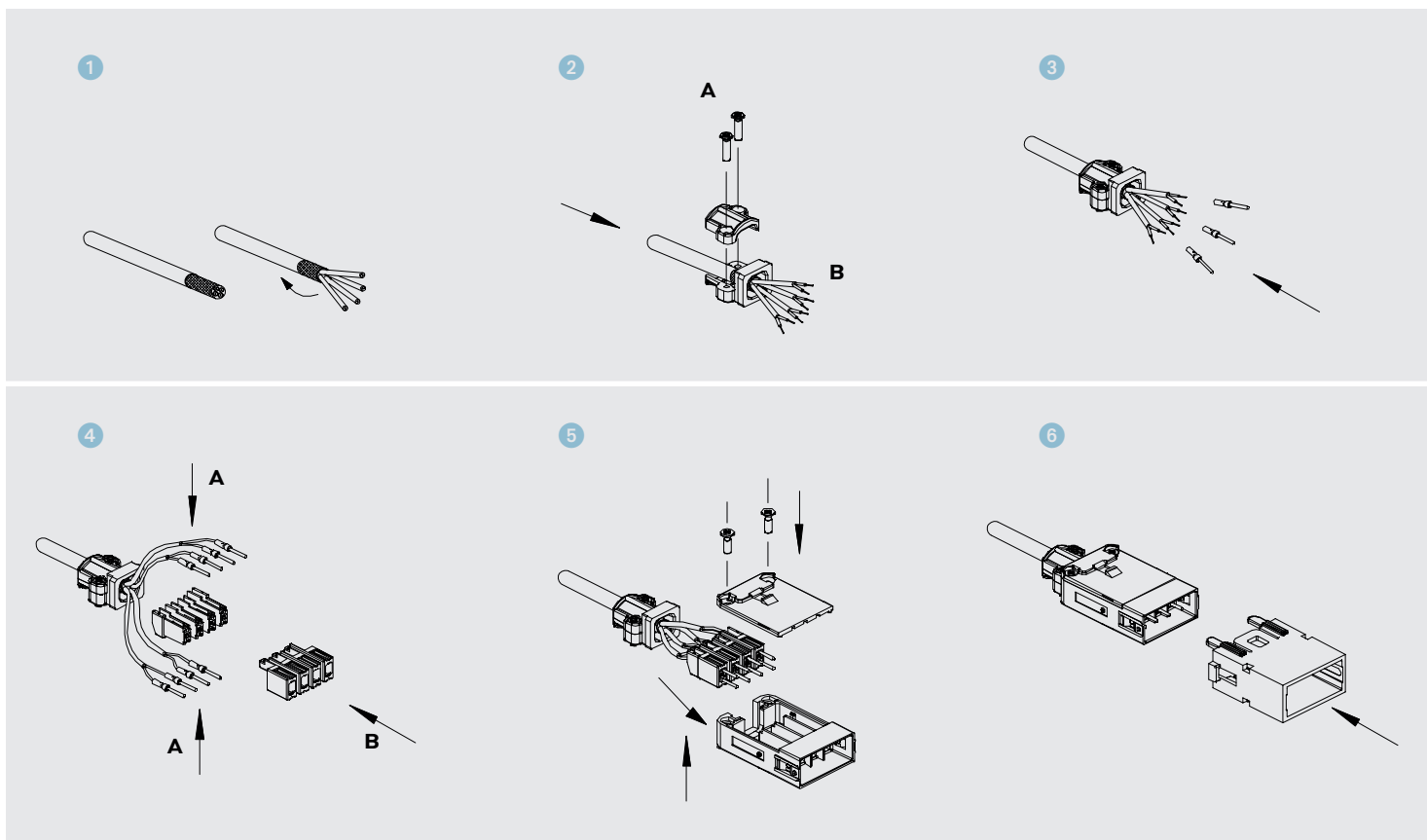
# Gigabit 8 poles 5A - 50V

## ASSEMBLY INSTRUCTIONS

### CX 08 I6F



### CX 08 I6M



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MIXO  
CX 06P CF/CM

---



MIXO 6 poles,  
IP2X protected (crimp),  
for use up to 830V AC or DC,  
16A 830V 8kV 3



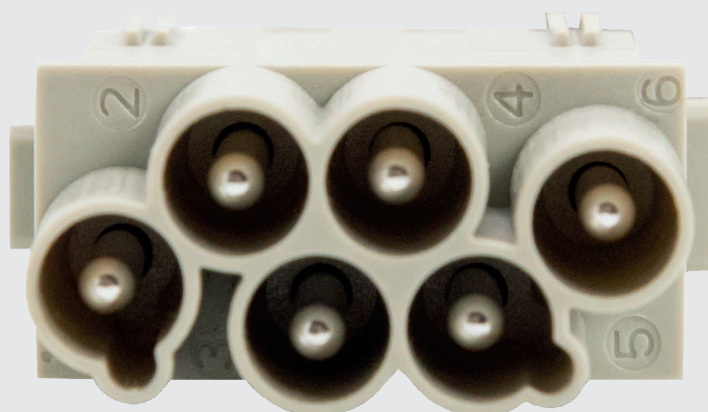
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## TECHNICAL FEATURES

### MIXO CX 06P CF/CM

- **finger-proof** male and female inserts on the mating side, for additional safety in applications where stored energy may be present on male contacts even after disconnection of the power line e.g. due to filters or drives on the motor side;
- **higher voltage rating** than CX 06 CF/CM (500V): for use at rated voltages up to **830V AC or DC** in industrial environment with pollution degree 3 according to IEC/EN 60664-1;
- **for up to 6 removable crimp contacts CC series**, suitable for use up to 16A rated current;
- in combination with removable crimp contacts RC series (for **HNM** – High Number of Matings, refer to ILME News 2017 Catalogue) and mounted inside MIXO frames for HNM, it may be used **as an HNM insert**, up to 10.000 mating cycles;
- **same tools** (crimping, removal) as per CX 06 CF/CM.

higher voltage rating  
than CX 06 CF/CM  
for use at rated  
voltages up to 830V  
AC or DC



# CX 06P CF/CM 6 poles protected 16A - 830V

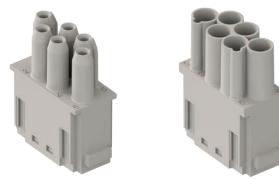
The modular inserts must be installed in suitable frames which are then mounted in traditional housings or COB panel support.

	pages
frames for modular units	44 - 45
frames for HNM modular units	89 *

\* refer to NEWS 2017 pages

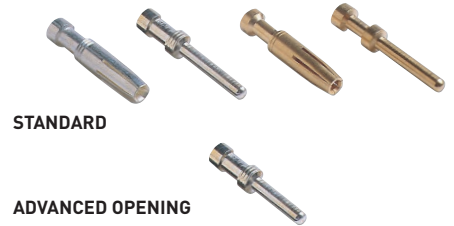
- we recommend the use of CRF / CRM code pins

modular units,  
crimp connections



**AVAILABLE JUNE 2018**

16A crimp contacts  
standard or for advanced opening  
silver and gold plated



STANDARD

ADVANCED OPENING

description

part No.

part No.

without contacts (to be ordered separately)

- female inserts for female contacts
- male inserts for male contacts

**CX 06P CF**  
**CX 06P CM**

16A female contacts

0,14-0,37 mm <sup>2</sup>	AWG 26-22	one groove
0,5 mm <sup>2</sup>	AWG 20	with no grooves
0,75 mm <sup>2</sup>	AWG 18	one groove (back side)
1 mm <sup>2</sup>	AWG 18	one groove
1,5 mm <sup>2</sup>	AWG 16	two grooves
2,5 mm <sup>2</sup>	AWG 14	three grooves
3 mm <sup>2</sup>	AWG 12	one wide groove
4 mm <sup>2</sup>	AWG 12	with no grooves

16A male contacts

0,14-0,37 mm <sup>2</sup>	AWG 26-22	one groove
0,5 mm <sup>2</sup>	AWG 20	with no grooves
0,75 mm <sup>2</sup>	AWG 18	one groove (back side)
1 mm <sup>2</sup>	AWG 18	one groove
1,5 mm <sup>2</sup>	AWG 16	two grooves
2,5 mm <sup>2</sup>	AWG 14	three grooves
3 mm <sup>2</sup>	AWG 12	one wide groove
4 mm <sup>2</sup>	AWG 12	with no grooves

16A male crimp contacts for advanced opening

0,5 mm <sup>2</sup>	AWG 20	with no grooves
0,75 mm <sup>2</sup>	AWG 18	one groove (back side)
1 mm <sup>2</sup>	AWG 18	one groove
1,5 mm <sup>2</sup>	AWG 16	two grooves
2,5 mm <sup>2</sup>	AWG 14	three grooves

**CCFA 0.3**  
**CCFA 0.5**  
**CCFA 0.7**  
**CCFA 1.0**  
**CCFA 1.5**  
**CCFA 2.5**  
**CCFA 3.0**  
**CCFA 4.0**

silver plated

**CCFD 0.3**  
**CCFD 0.5**  
**CCFD 0.7**  
**CCFD 1.0**  
**CCFD 1.5**  
**CCFD 2.5**  
**CCFD 3.0**  
**CCFD 4.0**

gold plated+

**CCMA 0.3**  
**CCMA 0.5**  
**CCMA 0.7**  
**CCMA 1.0**  
**CCMA 1.5**  
**CCMA 2.5**  
**CCMA 3.0**  
**CCMA 4.0**

**CCMD 0.3**  
**CCMD 0.5**  
**CCMD 0.7**  
**CCMD 1.0**  
**CCMD 1.5**  
**CCMD 2.5**  
**CCMD 3.0**  
**CCMD 4.0**

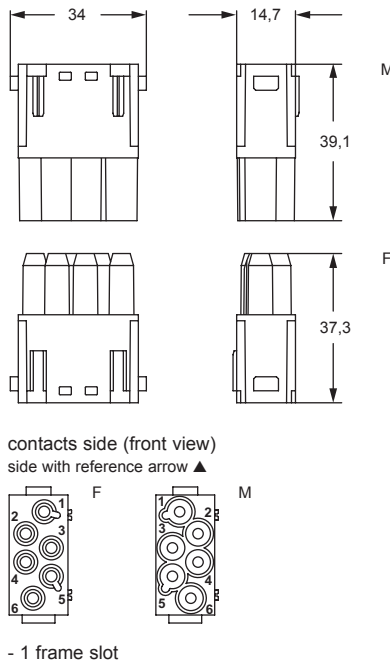
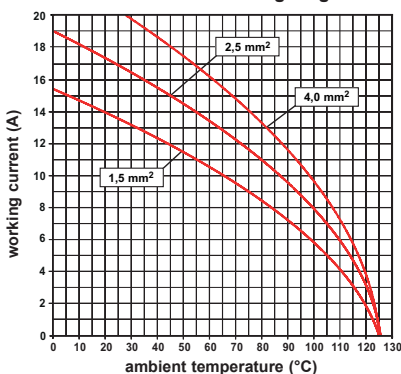
**CC 0.5 AN**  
**CC 0.7 AN**  
**CC 1.0 AN**  
**CC 1.5 AN**  
**CC 2.5 AN**

☑ for 16A HNM (High Number of Matings) contacts, please refer to page 78 of catalogue NEWS 2017

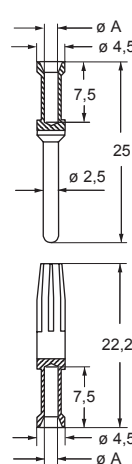
- characteristics according to EN 61984:

- 16A 830V 8kV 3**
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10$  G $\Omega$
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles \*
- \* with silver or standard gold plated contacts
- in combination with removable crimp contacts series RC and mounted inside MIXO frames for HNM, it may be used as an HNM insert, up to 10.000 mating cycles
- contact resistance:  $\leq 1$  m $\Omega$
- for contact crimping instructions, refer to the crimping tool section (16A contacts, CCF, CCM on pages 531-539, 544-549 and CC...AN series on pages 534-544, 546 catalogue CN.16)

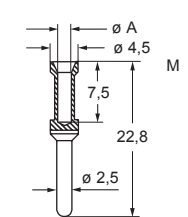
**CX 06 poles connector inserts**  
**Maximum current load derating diagram**



**CCF and CCM**



**CC...AN**



+ for basic or high thickness gold plating, please refer to page 481 of catalogue CN.16

**CCF, CCM and CC...AN contacts**

section	conductor	
	slot	stripping length (mm)
mm <sup>2</sup>	$\phi A$ (mm)	
0,14-0,37	0,9	7,5
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5



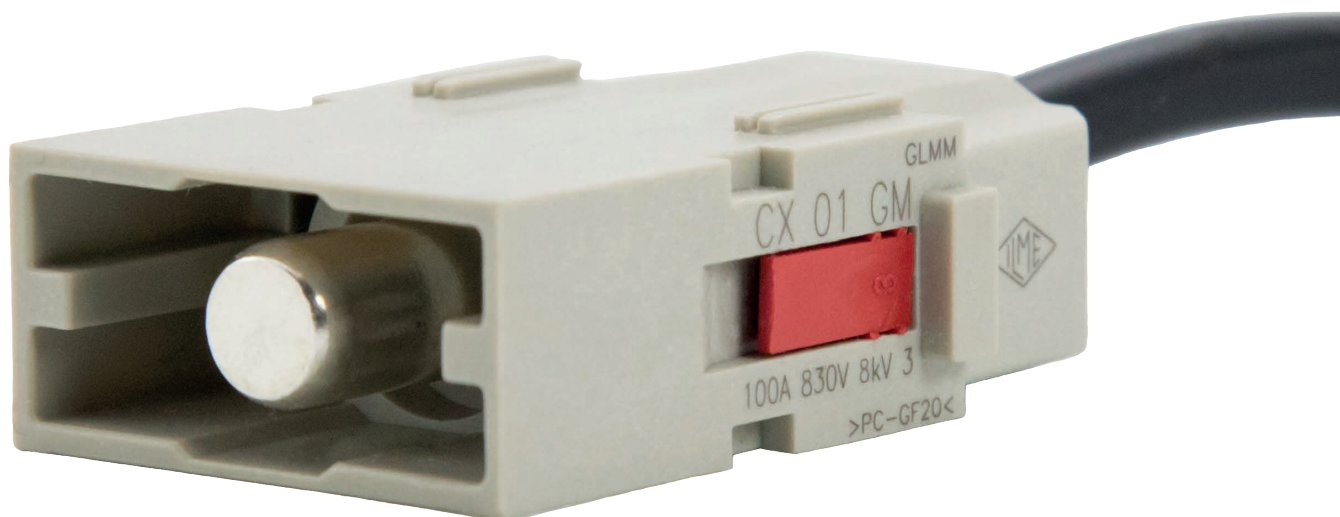
**MIXO CX 06P CM 830V**



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MIXO  
CX 01 GF/GM

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MIXO 100A module,  
1 pole (crimp) for use  
up to 830V AC or DC,  
100A 830V 8kV 3



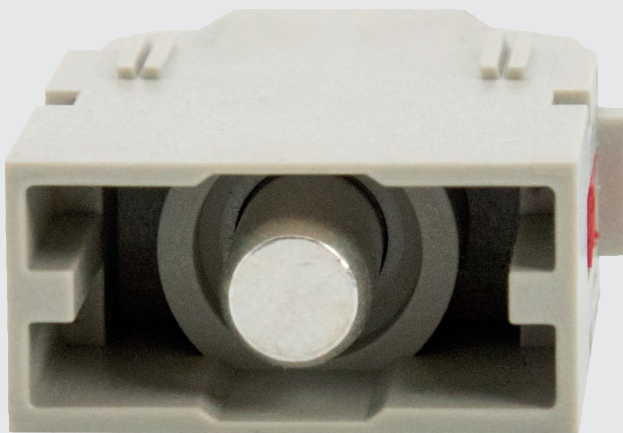
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## TECHNICAL FEATURES

### CX 01 GF/GM

- **Single-sized module**, for removable crimp contacts CG series;
- allows use of a **single power line up to 100A – 830V AC or DC** in a multi-module modular connector (e.g. for DC power applications like in solder robots);
- allows composition of a **3-phase + PE connector 100A – 830V AC or DC** in a compact size “57.27” housing e.g. for 3-phase feeding of large power applications;
- **contact captively secured** in the insert employing ILME proprietary technology by contact holders kept in place through suitable stopper keys (already implemented in MIXO power modules CX 02 GF/GM, CX 01 YF/YM YPEF/YPEM and CX 02 7F/7M);
- **easy contact removal** unlatches the contact holders by removing the two stopper red keys (reusable) with a simple flat screwdriver;
- for contact sizes larger than CGFA/ MA 10 it requires the use of the **cable earthing adapter** CGT 16, in order to accommodate a PE connection 16 mm<sup>2</sup> (6 – 5 AWG), suitable to cover a power wiring 16 mm<sup>2</sup> (6 – 5 AWG) through 35 mm<sup>2</sup> (2 AWG) according to IEC/EN 61984 and IEC/EN 60364 installation wiring rules.

single-sized module,  
for removable crimp  
contacts CG series



# CX 01 GF/GM 1 pole 100A - 830V

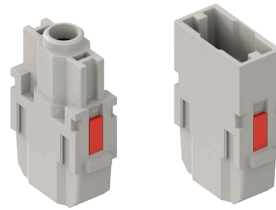
The modular inserts must be installed in suitable frames which are then mounted in traditional housings\* or COB panel support.

frames for modular units\*

pages  
44-45

\* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units,  
crimp connections



100A silver plated crimp contacts,  
PE adapter



AVAILABLE MAY 2018

description

part No.

part No.

without contacts (to be ordered separately)

- female inserts for female contacts
- male inserts for male contacts

**CX 01 GF**  
**CX 01 GM**

100A female contacts

8-10 mm <sup>2</sup>	AWG 8-7
16 mm <sup>2</sup>	AWG 6-5
25 mm <sup>2</sup>	AWG 4-3
35 mm <sup>2</sup>	AWG 2

**CGFA 10**  
**CGFA 16**  
**CGFA 25**  
**CGFA 35**

silver plated

100A male contacts

8-10 mm <sup>2</sup>	AWG 8-7
16 mm <sup>2</sup>	AWG 6-5
25 mm <sup>2</sup>	AWG 4-3
35 mm <sup>2</sup>	AWG 2

**CGMA 10**  
**CGMA 16**  
**CGMA 25**  
**CGMA 35**

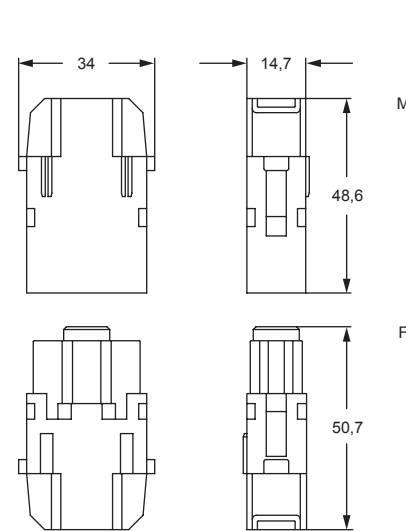
cable earthing adapter 16 mm<sup>2</sup> (AWG 6-5)

**CGT 16**

- characteristics according to EN 61984:

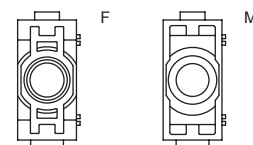
**100A 830V 8kV 3**

- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:  $\leq 0,3 \text{ m}\Omega$
- for contact crimping instructions, please refer to the crimping tool section (100A contacts, CGF and CGM series on pages 531-539 and 544-549 catalogue CN.16)
- contact removal only using a screwdriver
- for maximum current load refer to the connector inserts derating diagram below



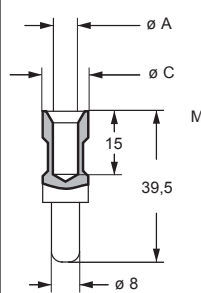
contacts side (front view)

side with reference arrow ▲

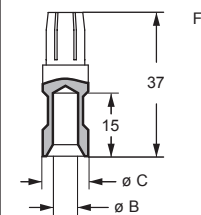
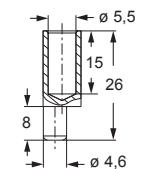


- 1 frame slot

**CGF and CGM**



**CGT 16**



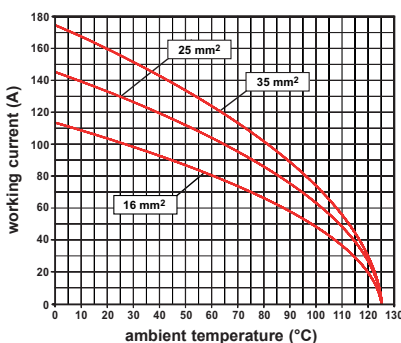
**CGF and CGM contacts**

conductor section (mm <sup>2</sup> )	conductor slot ø A (mm)	conductor slot ø B (mm)	conductor slot ø C (mm)	conductor stripping length (mm)
8-10	4,3	4,3	13	15
16	5,5	5,5	13	15
25	7,0	7,0	13	15
35	7,9	8,2	12,5	15

**How to use the PE adapter (CGT 16):**

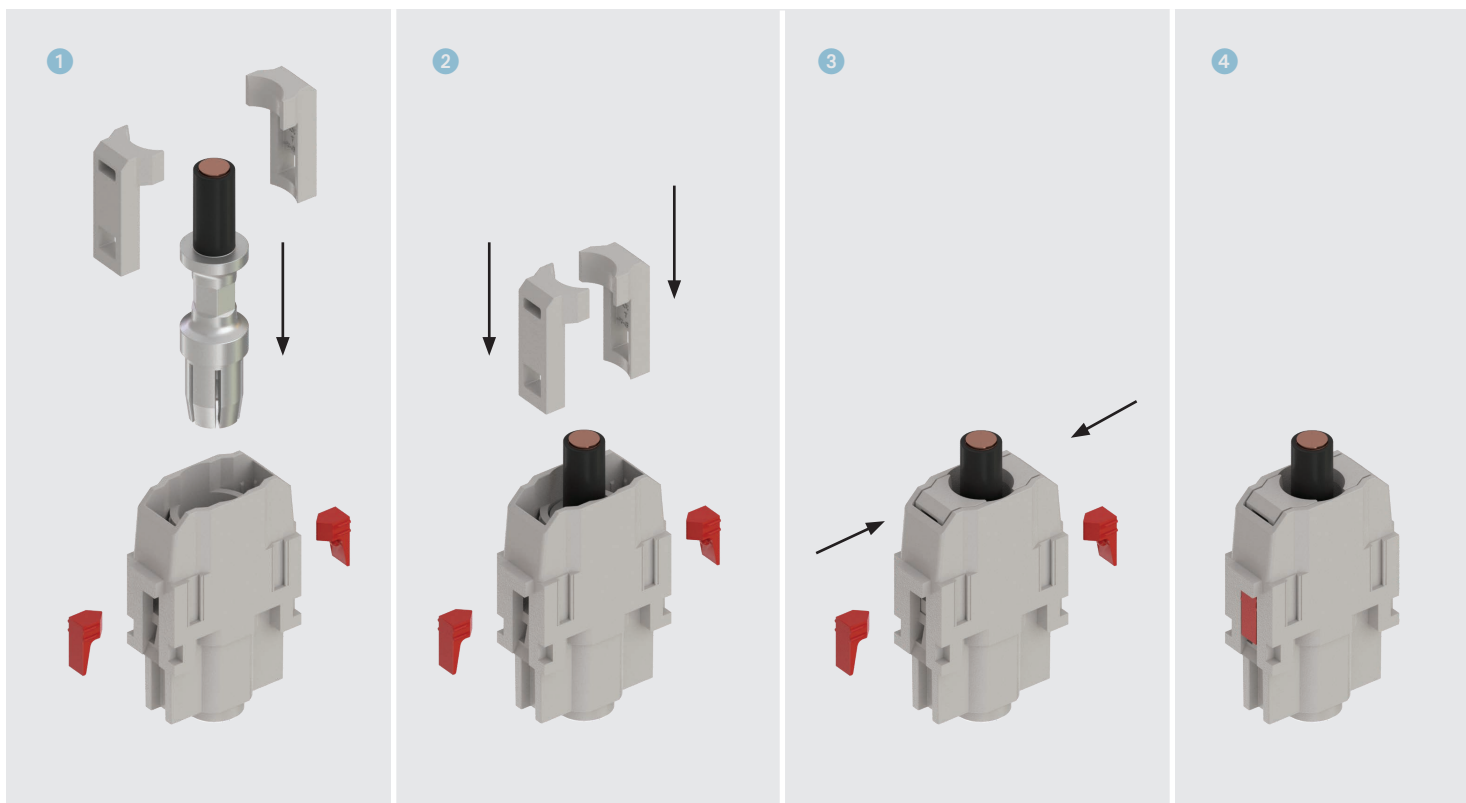
- 1) Strip 15 mm of flexible PE protective cable
- 2) Crimp the cable on the CGT 16 adapter by using the CGPZ pliers with the CGD 16 C matrix
- 3) Fix the adapter tip in the larger earth terminal (6 mm<sup>2</sup>) of frames CX...TM/TF
- 4) To be used with bulkhead mounting housings or high construction hoods
- 5) Cannot be used with T-TYPE series

**CX 01 poles connector inserts**  
**Maximum current load derating diagram**

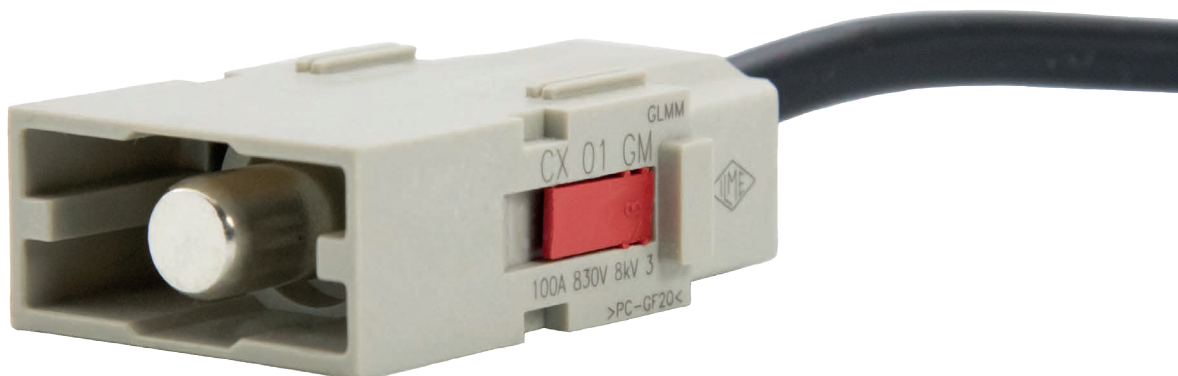


## ASSEMBLY INSTRUCTIONS

### MIXO CX 01 GF/GM 100A



### MIXO CX 01 GM 100A



Watch  
our  
online  
tutorial

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MIXO  
CX 01 9VTF

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MIXO D-Sub,  
female module  
for RS-485 bus  
T-connections



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## TECHNICAL FEATURES

### CX 01 9VTF

- **shielded module** with 9-poles D-Sub female connector equipped with a printed circuit with 2x2 screw terminals for the connection of two RS-485 bus screened cables;
- poles no. 3 and 8 are made available in parallel to two cables (incoming bus line, outgoing bus line) for the so-called **T-connection** foreseen by RS-485 bus protocol, in order to maintain the integrity of the bus ring even when the derivation by the corresponding plug connector is absent;
- connector shield with **cable clamp** adapted to clamp the shields of two RS-485 bus screened cables;
- to be mated with 9-poles D-Sub male connector shielded module **CX 01 9VM**.

shielded module with  
9-poles D-Sub female  
connector



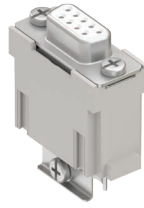
# CX 01 9VTF 9-pole crimp D-SUB RS-485 BUS connector

The modular inserts must be installed in suitable frames which are then mounted in traditional housings\* or COB panel support.

frames for modular units\* pages  
44-45

\* enclosures: housings or high construction hoods

modular unit  
for 1 D-SUB RS-485 connector



**AVAILABLE JUNE 2018**

modular unit  
for 1 D-SUB connector



**ALREADY AVAILABLE**

description

part No.

part No.

MIXO D-Sub 9-pole female module for RS-485 T-connection, with cable clamp accommodation for 2 cables

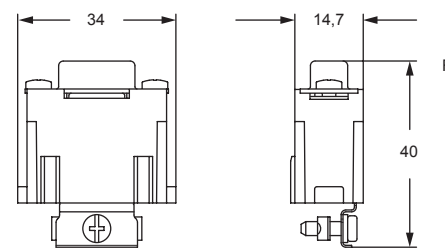
**CX 01 9VTF**

seat for 1 D-SUB crimp contacts connector and shield (included)  
- male insert with connector

**CX 01 9VM**

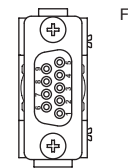
**We recommend the use of CRF CX / CRM CX code pins**

- characteristics according to EN 61984: **5A 50V 0,8kV 3**
- "T" functionality with connection of two RS-485 bus cables (screw terminal)
- to be coupled with CX 01 9VM module
- for wires 0,14-0,5 mm<sup>2</sup> - 26-20 AWG
- cable screen max outer diameter 6 mm

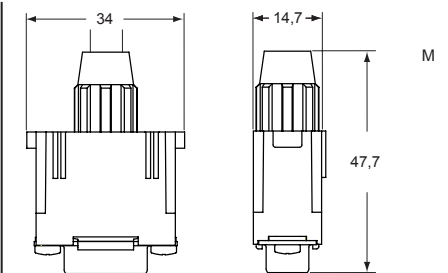


contacts side (front view)

side with reference arrow ▲

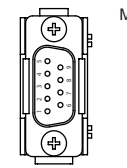


- 1 frame slot



contacts side (front view)

side with reference arrow ▲



- 1 frame slot

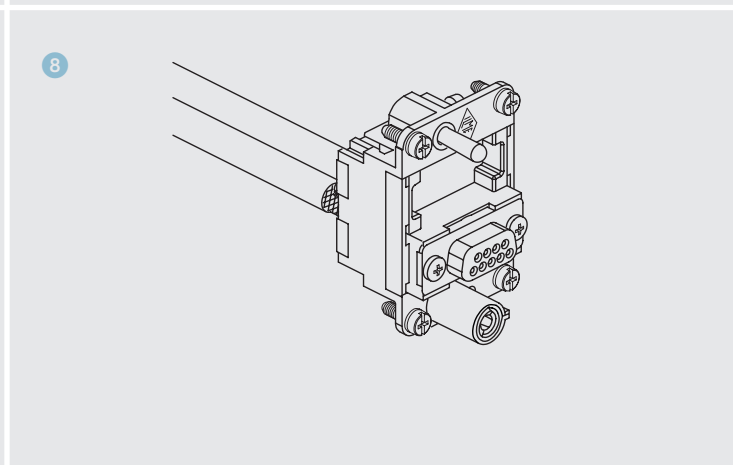
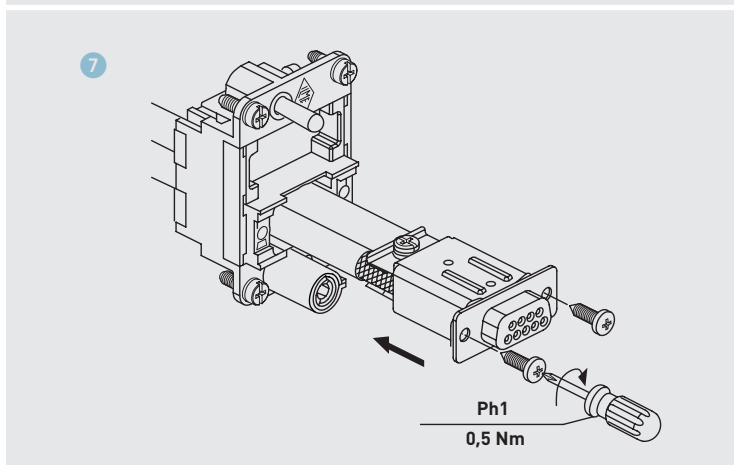
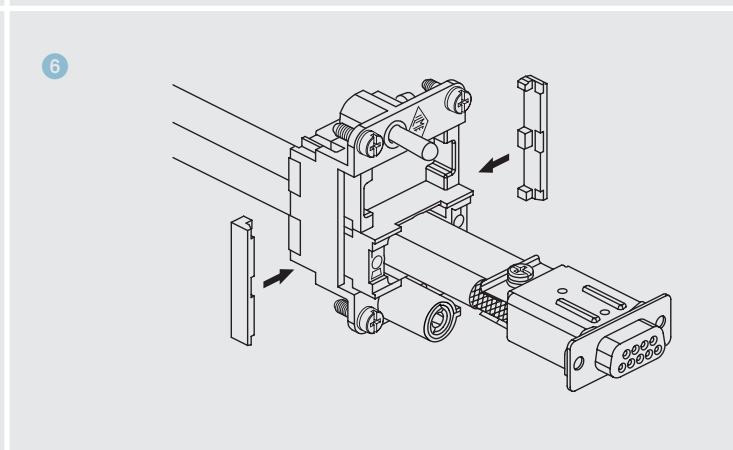
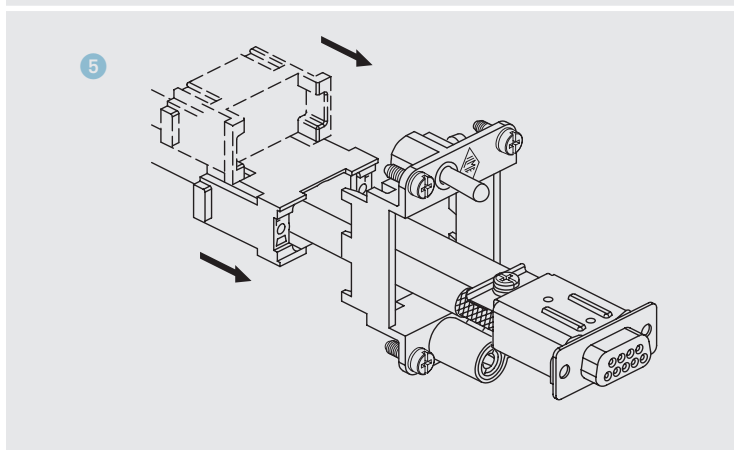
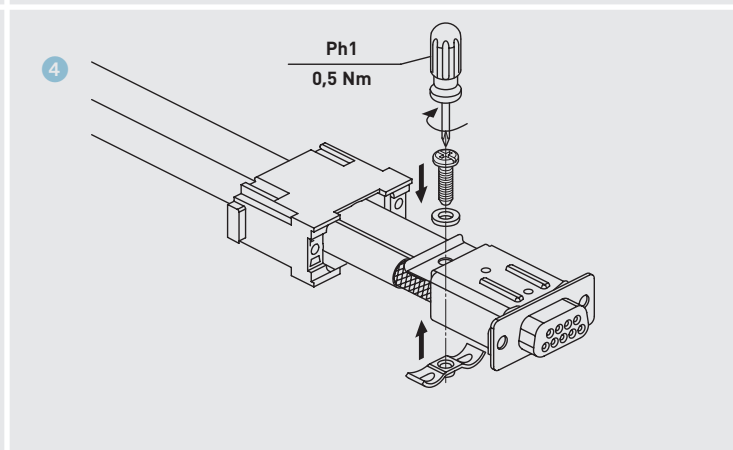
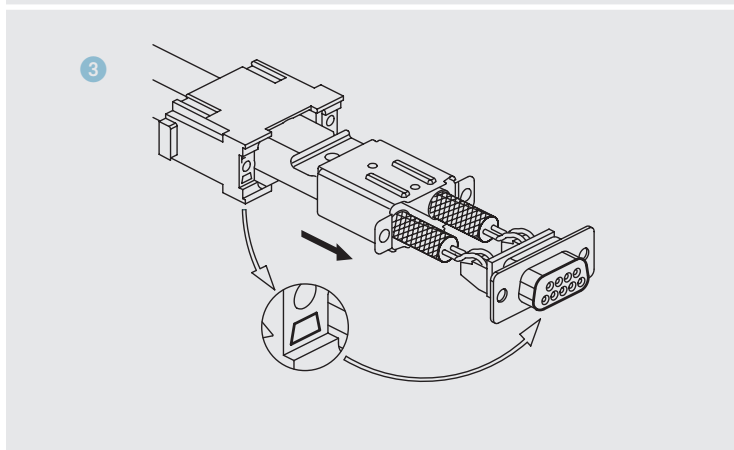
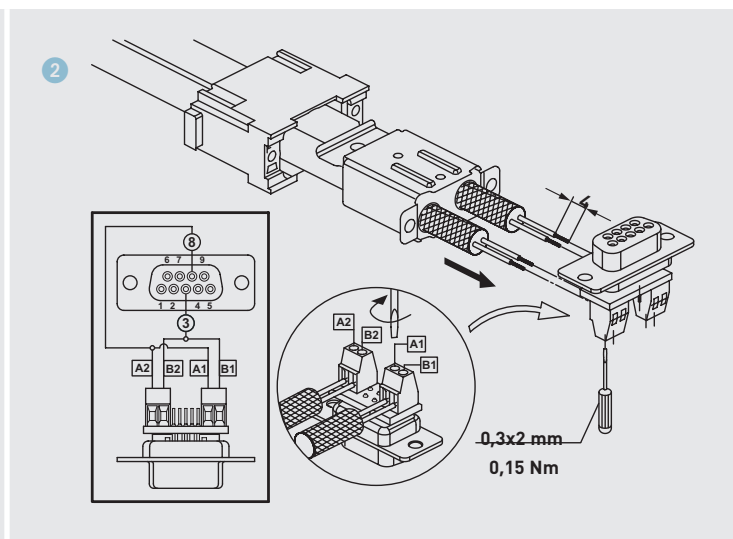
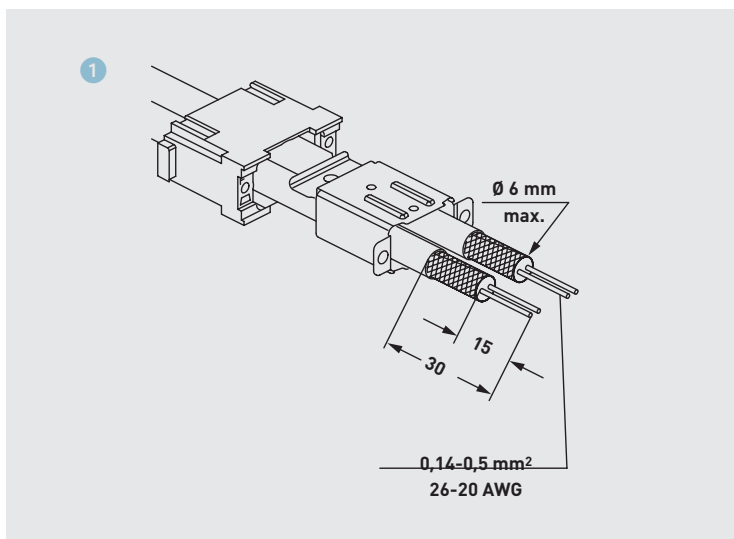


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online  
tutorial



# ASSEMBLY INSTRUCTIONS

## MIXO CX 01 9VTF



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MIXO  
CX 02 CHF/CHM

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MIXO High Voltage  
2 poles single module,  
16A (crimp),  
2500V AC or DC



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## TECHNICAL FEATURES

### CX 02 CHF/CHM

A new **high-voltage single module** has been added to the ILME MIXO series of modular industrial connectors, allowing the transmission of power up to 16A rated current at very high working voltage of 2500V AC or DC with half space requirement compared with the previously available solution.

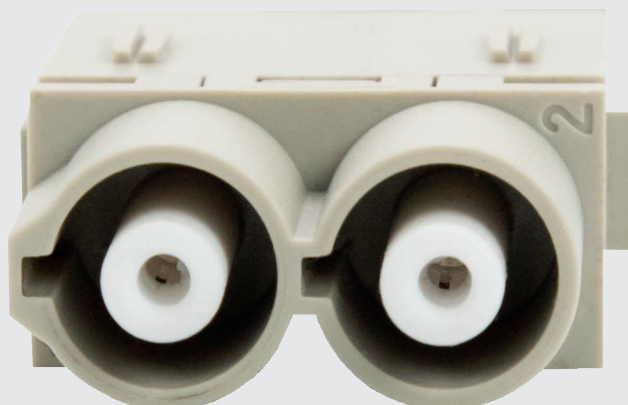
The new ILME **MIXO HV single module CX 02 CHF/CHM** is based on the space-saving design of MIXO 70A modules CX 02 7F/ 7M, with two power contacts per module, incorporating in that module two contact holders made of PTFE that provides outstanding high-voltage insulation, for the installation of two removable crimp contacts **CC series**, that can handle stranded copper conductor connection with cross-sections 0,5 mm<sup>2</sup> (20 AWG) through 4 mm<sup>2</sup> (12 AWG).

This new **MIXO HV single module** allows – for example – to design a MIXO size “104.27” connector equipped with up to 12 power contacts rated 16A – 2500V AC or DC. The module can also be combined with other power modules (200A, 100A, 70A, 40A) for use at lower rated voltage (e.g. 500V or 690V or 1000V) or signal modules (10A, 5A), pneumatic modules and optical or data transmission modules.

#### The main features of the new MIXO HV single module CX 02 CHF/CHM are:

- single-sized module: halves the space required for power & high voltage for operating voltages ≤ 2500V AC or DC (CX 02 CHF/CHM double-sized module offers the same number of poles for 16A – 2900/5000V AC or DC);
- up to 16A rated current at up to 2500V AC or DC rated operating voltage, pollution degree 3 per IEC/EN 60664-1;
- contact holders and seats made of PTFE for outstanding dielectric withstand properties, external module support made by glass fibre reinforced polycarbonate;
- for 2 removable crimp contacts CC series; same crimping tools for these contacts;
- heat shrinking tube provided for the two contacts CC series to be applied after crimping on a suitably rated medium voltage wire, to establish the required insulation on the cable entry side;
- dedicated extraction tool **CH1ES** for contact removal;
- suitable for connection to appliances requiring high voltage even transient, e.g. starters for high power discharge lamps, storage capacitors, high voltage testing equipment, etc.

two power contacts per module incorporating PTFE contact holders for an outstanding high-voltage insulation

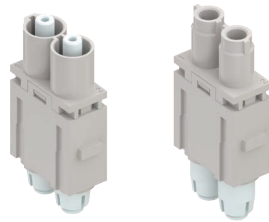


# HV 2 poles single module 16A - 2500V

The modular inserts must be installed in suitable frames which are then mounted in traditional housings\* or COB panel support.

frames for modular units\* pages  
44-45

high voltage modular units, crimp connections



16A crimp contacts silver and gold plated



\* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

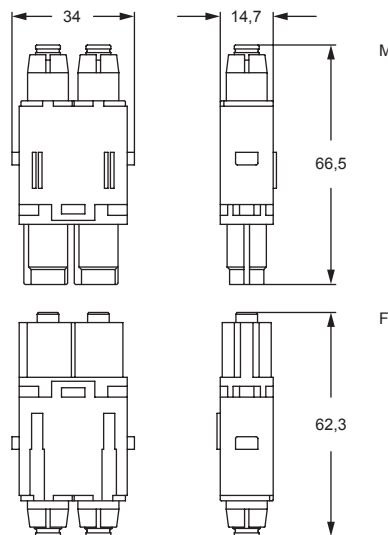
AVAILABLE JUNE 2018

description	part No.	part No.
without contacts (to be ordered separately)		
- high voltage female inserts for female contacts	<b>CX 02 CHF</b>	
- high voltage male inserts for male contacts	<b>CX 02 CHM</b>	
contact holder removal tool	<b>CH1ES</b>	
16A female contacts		
0,5 mm <sup>2</sup> AWG 20 with no grooves		<b>CCFA 0.5</b> <b>CCFD 0.5</b>
0,75 mm <sup>2</sup> AWG 18 one groove (back side)		<b>CCFA 0.7</b> <b>CCFD 0.7</b>
1 mm <sup>2</sup> AWG 18 one groove		<b>CCFA 1.0</b> <b>CCFD 1.0</b>
1,5 mm <sup>2</sup> AWG 16 two grooves		<b>CCFA 1.5</b> <b>CCFD 1.5</b>
2,5 mm <sup>2</sup> AWG 14 three grooves		<b>CCFA 2.5</b> <b>CCFD 2.5</b>
3 mm <sup>2</sup> AWG 12 one wide groove		<b>CCFA 3.0</b> <b>CCFD 3.0</b>
4 mm <sup>2</sup> AWG 12 with no grooves		<b>CCFA 4.0</b> <b>CCFD 4.0</b>
16A male contacts		
0,5 mm <sup>2</sup> AWG 20 with no grooves		<b>CCMA 0.5</b> <b>CCMD 0.5</b>
0,75 mm <sup>2</sup> AWG 18 one groove (back side)		<b>CCMA 0.7</b> <b>CCMD 0.7</b>
1 mm <sup>2</sup> AWG 18 one groove		<b>CCMA 1.0</b> <b>CCMD 1.0</b>
1,5 mm <sup>2</sup> AWG 16 two grooves		<b>CCMA 1.5</b> <b>CCMD 1.5</b>
2,5 mm <sup>2</sup> AWG 14 three grooves		<b>CCMA 2.5</b> <b>CCMD 2.5</b>
3 mm <sup>2</sup> AWG 12 one wide groove		<b>CCMA 3.0</b> <b>CCMD 3.0</b>
4 mm <sup>2</sup> AWG 12 with no grooves		<b>CCMA 4.0</b> <b>CCMD 4.0</b>

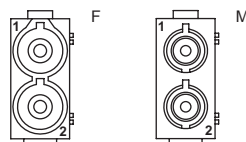
- characteristics according to EN 61984\*\*:
- 16A 2500V 15kV 3**
- \*\* used for guidance as applicable
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 1 mΩ
- for contact crimping instructions, please refer to the crimping tool section (16A contacts, CCF and CCM series on pages 531-539 and 544-549 catalogue CN.16
- contact holder removal tool: **CH1ES**



CH1ES

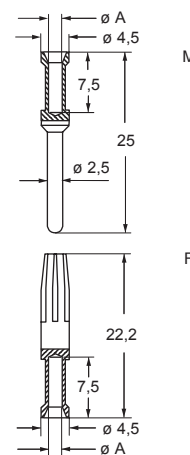


contacts side (front view)  
side with reference arrow ▲



- 1 frame slot

**CCF and CCM**



**CCF and CCM contacts**

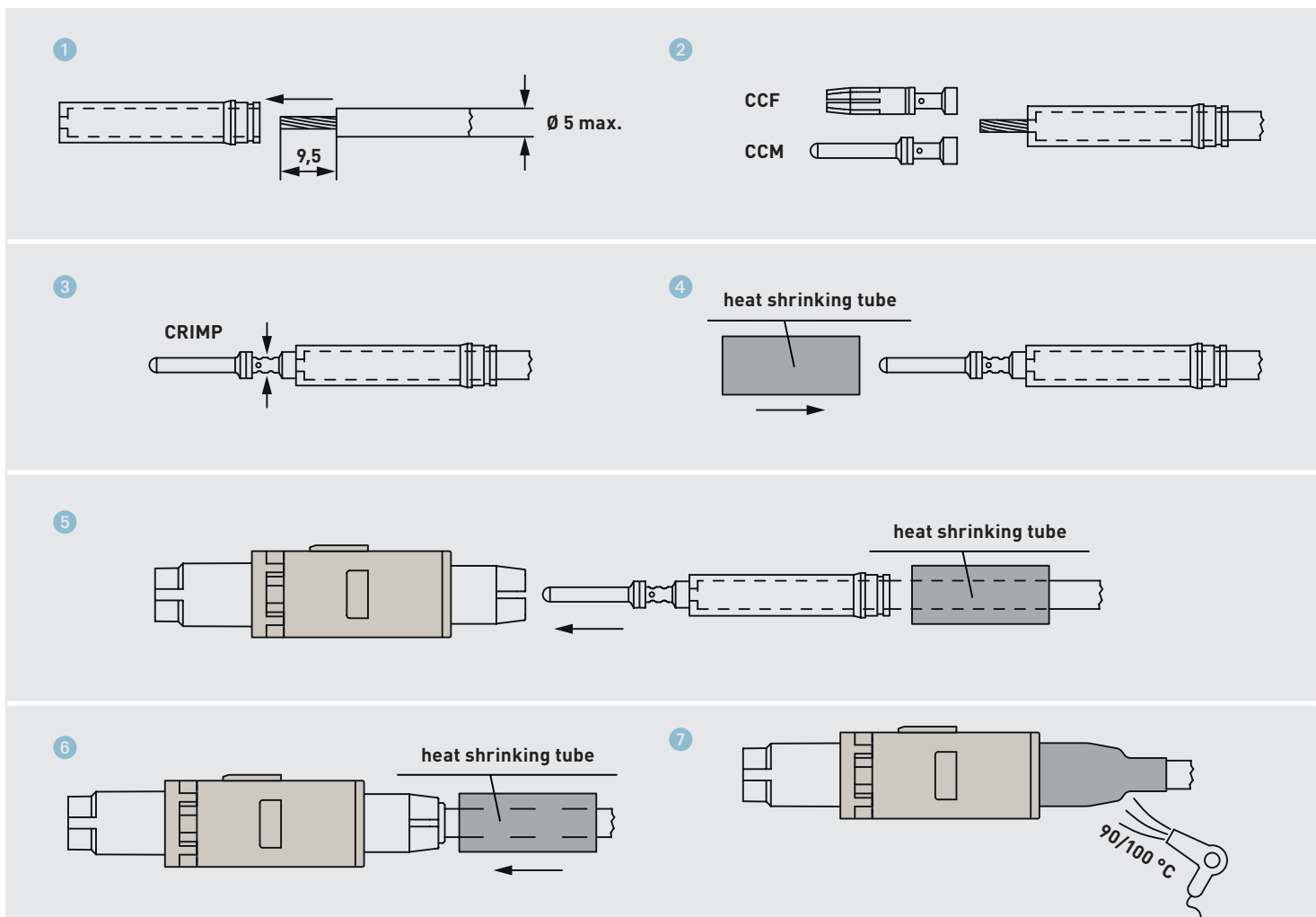
conductor section	conductor slot	conductors stripping length
mm <sup>2</sup>	ø A (mm)	(mm)
0,5	1,1	7,5
0,75	1,3	7,5
1,0	1,45	7,5
1,5	1,8	7,5
2,5	2,2	7,5
3	2,55	7,5
4	2,85	7,5

+ for basic or high thickness gold plating, please refer to page 481 of catalogue CN.16

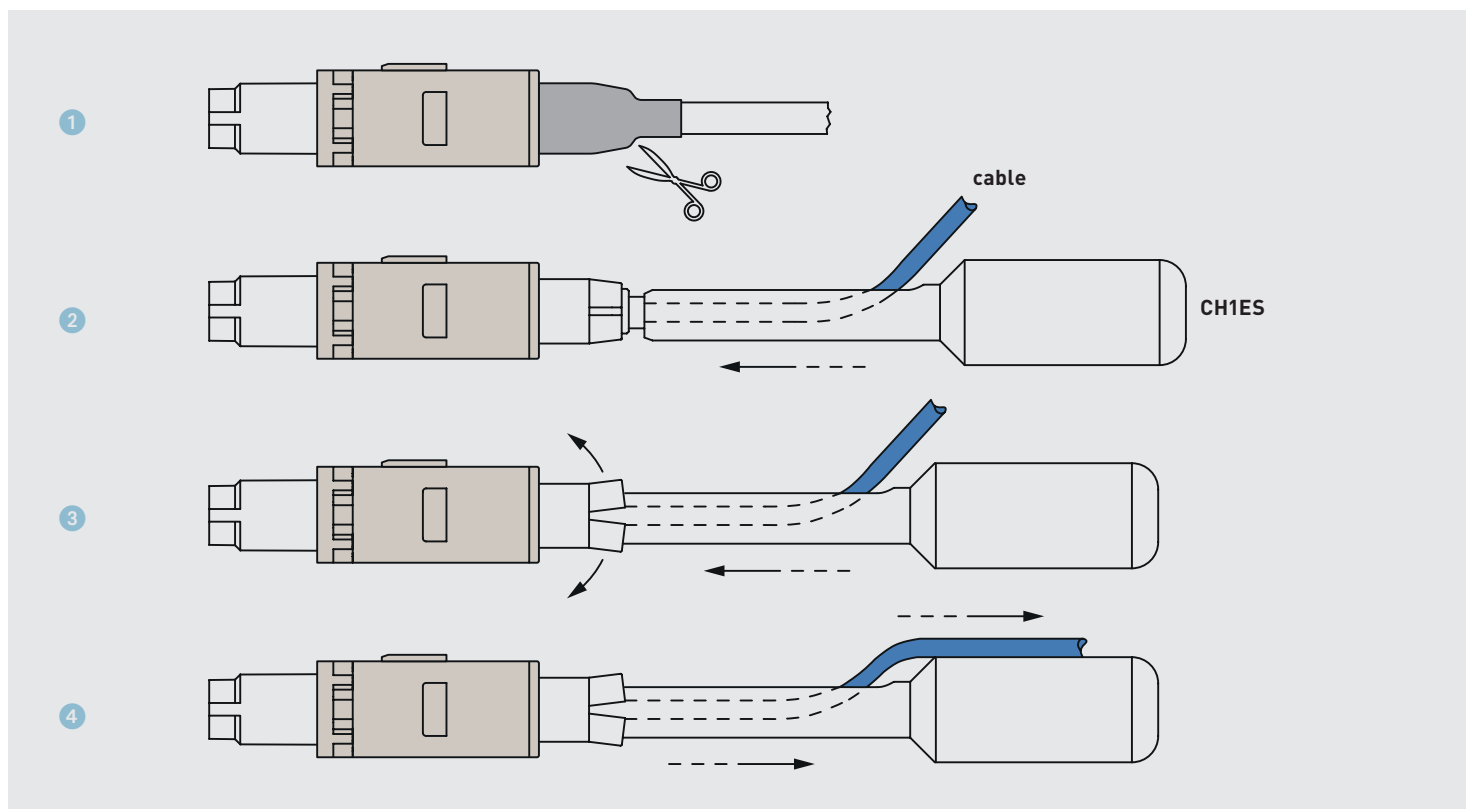
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## ASSEMBLY INSTRUCTIONS

### CX 02 CHF/CHM



### CONTACT HOLDER REMOVAL

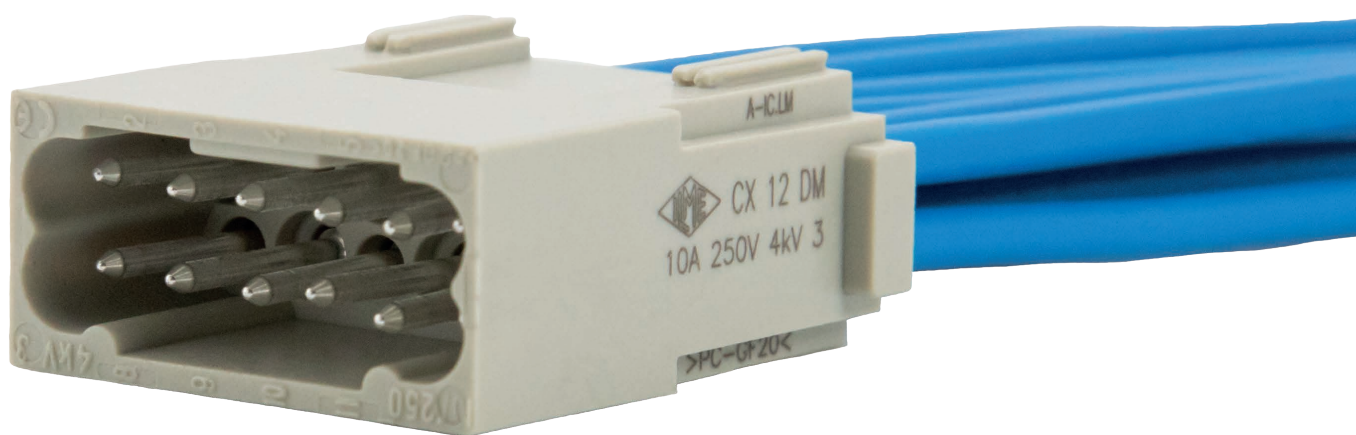


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# MIXO

## CX 12 DF/DM

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MIXO module 12 poles,  
10A 250V 4kV 3,  
AC or DC rating,  
in Pollution Degree 3  
(was 160V in PD3, 250V in PD2)



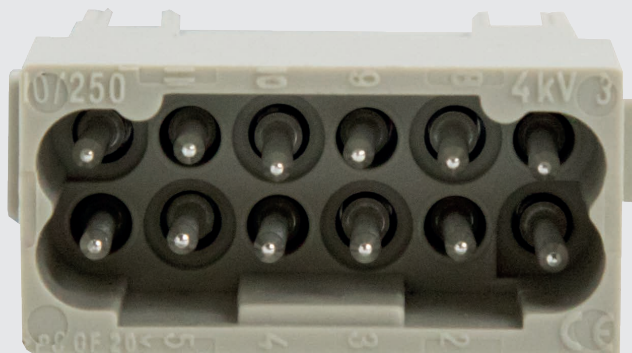
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## TECHNICAL FEATURES

### CX 12 DF/DM

- by subtle reshaping of the mating surface, insulation distances have been **increased** so as to fulfil the requirements for a rated voltage **250V in pollution degree 3** (formerly 250V for PD2 or 160V for PD3, usable at PD3 for 250V inside connector housings >IP54);
- replaces as **upgrade** the available CX 12 DF/DM (no code change);
- suitable for use also with newly introduced contacts for **POF** (polymer optical fibre) Ø 1 mm CL series (CLF DD, CLM DD); refer to further in this catalogue;
- in combination with removable crimp contacts **RD series** (for **HNM** – High Number of Matings, refer to ILME News 2017 Catalogue) and mounted inside MIXO frames for HNM, it may be used as an HNM insert, up to 10.000 mating cycles.

upgrade of  
CX 12 DF/DM MIXO  
module to new 250V  
AC or DC rating in  
Pollution Degree 3



# CX 12 DF/DM 12 poles 10A - 250V

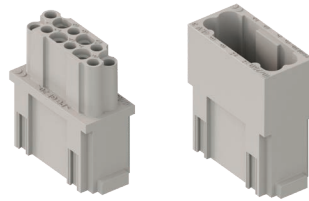
The modular inserts must be installed in suitable frames which are then mounted in traditional housings\* or COB panel support.

frames for modular units\* pages 44 - 45  
frames for HNM modular units\* 89 \*\*

\*\* refer to NEWS 2017 pages

\* enclosures: bulkhead mounting housings, high construction housings or high construction hoods

modular units, crimp connections



10A crimp contacts, silver and gold plated

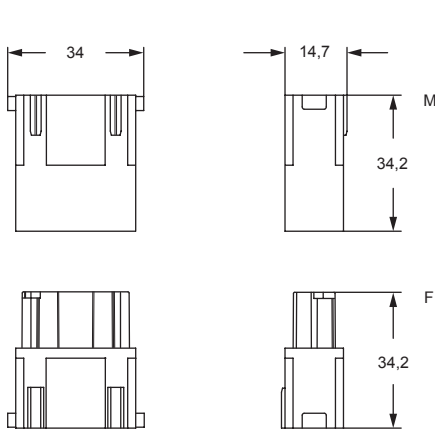


**NEW RATING 250V**  
 **AVAILABLE JANUARY 2018**

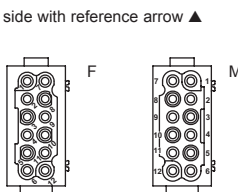
description	part No.	part No.
without contacts (to be ordered separately)		
- female inserts for female contacts	<b>CX 12 DF</b>	
- male inserts for male contacts	<b>CX 12 DM</b>	
<b>10A female contacts</b>		
0,14-0,37 mm <sup>2</sup> AWG 26-22 identification No. 1		<b>CDFA 0.3</b>
0,5 mm <sup>2</sup> AWG 20 identification No. 2		<b>CDFA 0.5</b>
0,75 mm <sup>2</sup> AWG 18 identification No. ②		<b>CDFA 0.7</b>
1 mm <sup>2</sup> AWG 18 identification No. 3		<b>CDFA 1.0</b>
1,5 mm <sup>2</sup> AWG 16 identification No. 4		<b>CDFA 1.5</b>
2,5 mm <sup>2</sup> AWG 14 identification No. 5		<b>CDFA 2.5</b>
<b>10A male contacts</b>		
0,14-0,37 mm <sup>2</sup> AWG 26-22 identification No. 1		<b>CDMA 0.3</b>
0,5 mm <sup>2</sup> AWG 20 identification No. 2		<b>CDMA 0.5</b>
0,75 mm <sup>2</sup> AWG 18 identification No. ②		<b>CDMA 0.7</b>
1 mm <sup>2</sup> AWG 18 identification No. 3		<b>CDMA 1.0</b>
1,5 mm <sup>2</sup> AWG 16 identification No. 4		<b>CDMA 1.5</b>
2,5 mm <sup>2</sup> AWG 14 identification No. 5		<b>CDMA 2.5</b>
		<b>CDMD 0.3</b>
		<b>CDMD 0.5</b>
		<b>CDMD 0.7</b>
		<b>CDMD 1.0</b>
		<b>CDMD 1.5</b>
		<b>CDMD 2.5</b>

<b>silver plated</b>	<b>gold plated<sup>+</sup></b>	

- characteristics according to EN 61984: **10A 250V 4kV 3**
- UL, CSA, CQC, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance: ≥ 10 GΩ
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ
- PCBs interface, refer to article CIF 2.4
- for contact crimping instructions, please refer to the crimping tool section (10A contacts, CDF and CDM series on pages 531-539 and 544-549 catalogue CN.16)
- for maximum current load refer to the connector inserts derating diagram below

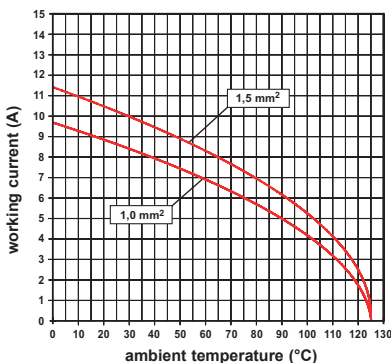


contacts side (front view)

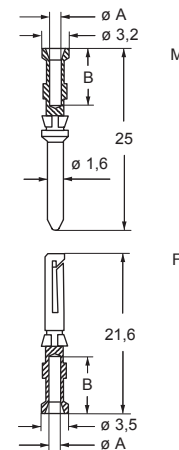


- 1 frame slot

**CX 12 poles connector inserts**  
**Maximum current load derating diagram**



**CDF and CDM**



**CDF and CDM contacts**

section	conductor	
	slot mm <sup>2</sup>	stripping length B (mm)
0,14-0,37	0,9	8
0,5	1,1	8
0,75	1,3	8
1,0	1,45	8
1,5	1,8	8
2,5	2,2	6

for 10A HNM (High Number of Matings) contacts, please refer to page 72 of catalogue NEWS 2017

<sup>+</sup> for basic or high thickness gold plating, please refer to page 481 of catalogue CN.16

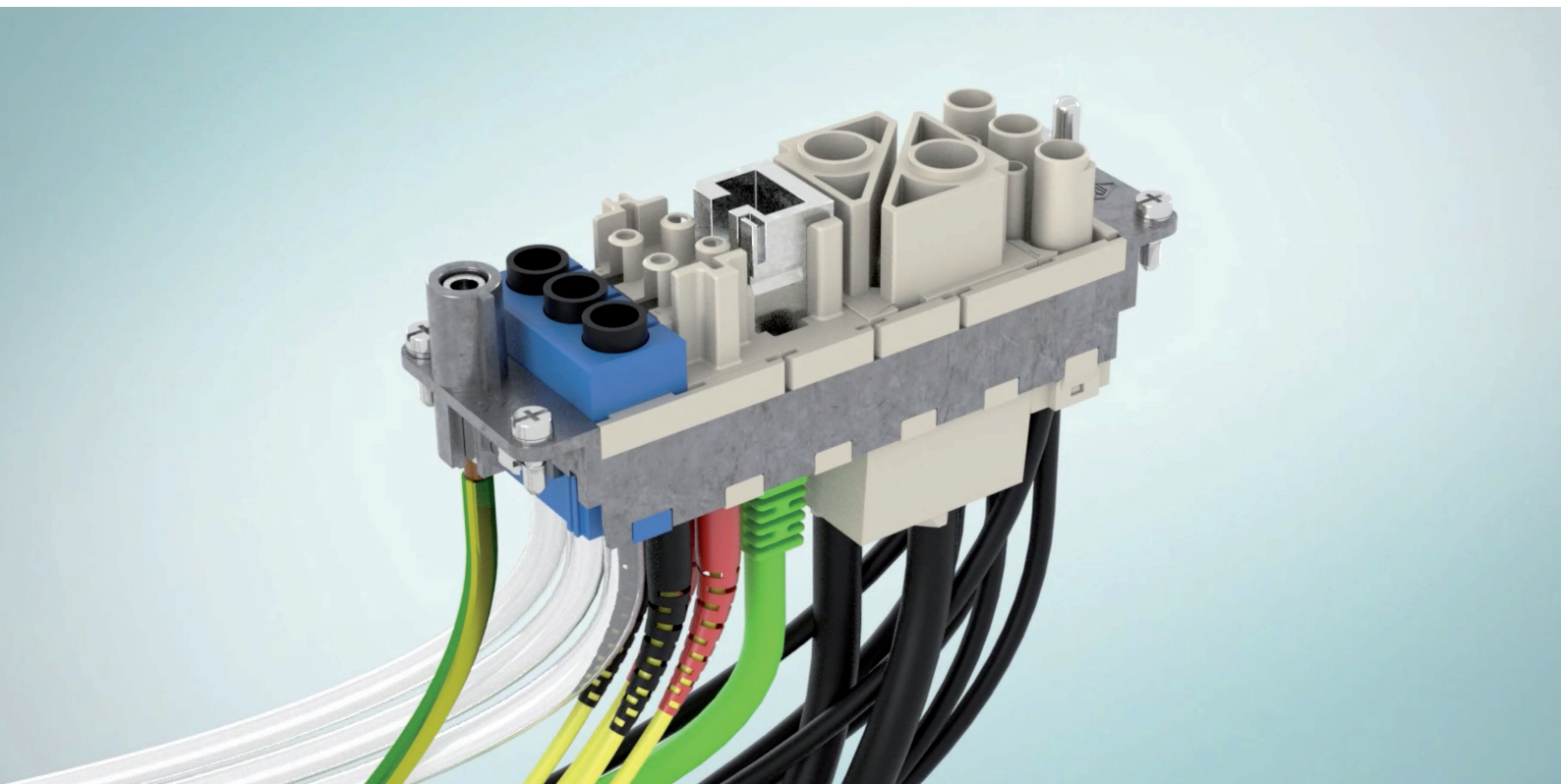


**MIXO CX 12 DM 250V**

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# MIXO FRAMES

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MIXO frames  
made of die-cast zinc alloy  
with protective earth (PE)  
contacts



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information on  
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# TECHNICAL FEATURES

## MIXO FRAMES

- die-cast zinc alloy frames;
- protective earth (PE);
- possibility of mounting female and male modular units on the same frame;
- polarisation on frames;
- when two or more identical connectors of the MIXO series are used, coded pins prevent incorrect coupling (CR...CX series).

### HOW TO SELECT FRAMES

1 **Calculate** the number of frame slots taken up by the required inserts (frame slot 1, 2 or 3 modules).



size: 1 frame slot

	No. of frame slots
CX 01 9VF/M	1
CX 01 9VTF	1
CX 01 GF/M	1
CX 01 J8	1
CX 01 UF/M	1
CX 02 4AF/M	1
CX 02 4BF/M	1
CX 02 4F/M	1
CX 02 7F/M	1
CX 02 CHF/M	1
CX 02 P	1
CX 03 4F/M	1
CX 03 4BF/M	1
CX 03 P	1
CX 3/4 XDF/M	1
CX 04 LF/M	1
CX 04 RF/M	1
CX 04 SCF/M	1
CX 04 XF/M	1
CX 05 SF/M	1
CX 06 CF/M	1
CX 06P CF/M	1
CX 08 CF/M	1
CX 08 I6F/M	1
CX 12 DF/M	1
CX 17 DF/M	1
CX 25 IBF/M	1
CX 25 IF/M	1
CX FM	1



size: 2 frame slots

	No. of frame slots
CX 01 JF/M	2
CX 01 YF/M	2
CX 01 YPEF/M	2
CX 02 BF/M	2
CX 02 GF/M	2
CX 02 HF/M	2
CX 20 CF/M	2



size: 3 frame slots

	No. of frame slots
CX 02 JF/M	3

2 **Select** the right frame according to the number of required modules (available 1, 2, 3, 4 and 6 modules).

CX 01 T  
1 module



CX 02 TF/TM  
2 modules



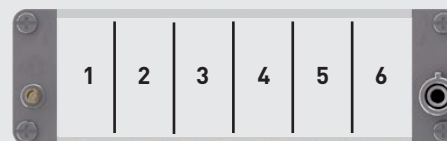
CX 03 TF/TM  
3 modules



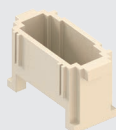
CX 04 TF/TM  
4 modules



CX 06 TF/TM  
6 modules



Fill the unused frame slots with CX FM dummy module



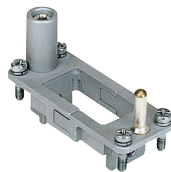
Possibility – to be verified case-by-case – to use the recently added MIXO **HNM frames** (provided with special gold plated PE contacts) together with R series of crimp contacts and the relevant connector

hoods and housings, to produce where required an **HNM** connector (High Number of Matings, up to 10.000 cycles of operation). For more information refer to ILME News 2017 Catalogue.

# CX 01 T

enclosures: size "49.16"	page:	frames for modular units
IL-BRID	230 - 232	
W-TYPE	370	
EMC	390	
panel supports: COB + adaptor	462 - 464	

refer to CN.16 pages

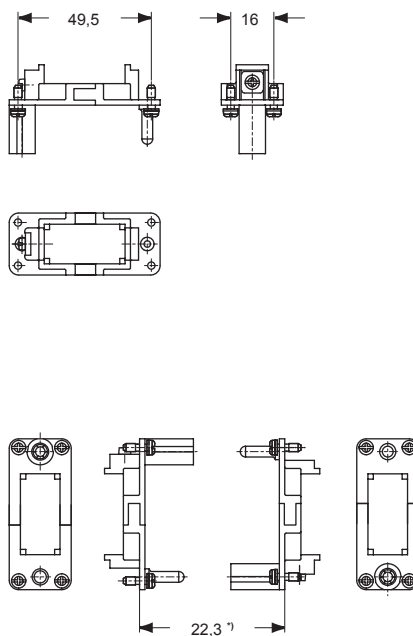


description	part No.
-------------	----------

for CZ enclosures

CX 01 T

- die-cast zinc alloy frames
- protective earth (PE)
- possibility of mounting female and male modular units on the same frame
- polarisation on frames
- code pins CR..CX



\*) distance for electric contacts: max 24 mm  
distance for pneumatic contacts: max 23,5 mm

- small earth terminal for cables from 1-2,5 mm<sup>2</sup>, AWG 18-14

# CX 02 TM/TF, CX 03 TM/TF, CX 04 TM/TF, CX 06 TM/TF

enclosures:

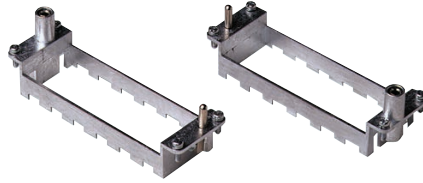
T-TYPE IP65/IP66	240 - 271
C7 IP67	274 - 277
V-TYPE IP65/IP66	280 - 299
BIG	304 - 319
T-TYPE IP65	326 - 333
T-TYPE/ W IP66	336 - 343
HYGIENIC T-TYPE/H	350 - 357
HYGIENIC T-TYPE/C	358 - 365
W-TYPE	373 - 378
EMC	392 - 395
CENTRAL LEVER	404 - 412
IP68	420 - 435
LS-TYPE	450 - 457

panel supports:

COB + adaptor	462 - 463
---------------	-----------

page:

frames for modular units with lock-in tabs (included)



lock-in tabs



refer to CN.16 pages

description	part No.	part No.
-------------	----------	----------

frames for modular units (module lock-in tabs included)  
 - for 2 modular units - for housing size 44.27  
 - for 3 modular units - for housing size 57.27  
 - for 4 modular units - for housing size 77.27 and 77.62  
 - for 6 modular units - for housing size 104.27 and 104.62

type for hoods

type for housings

<b>CX 02 TM</b>	<b>CX 02 TF</b>
<b>CX 03 TM</b>	<b>CX 03 TF</b>
<b>CX 04 TM</b>	<b>CX 04 TF</b>
<b>CX 06 TM</b>	<b>CX 06 TF</b>

lock-in tabs (6 units) dividable

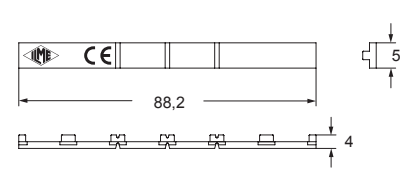
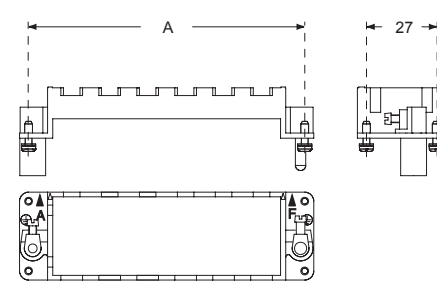
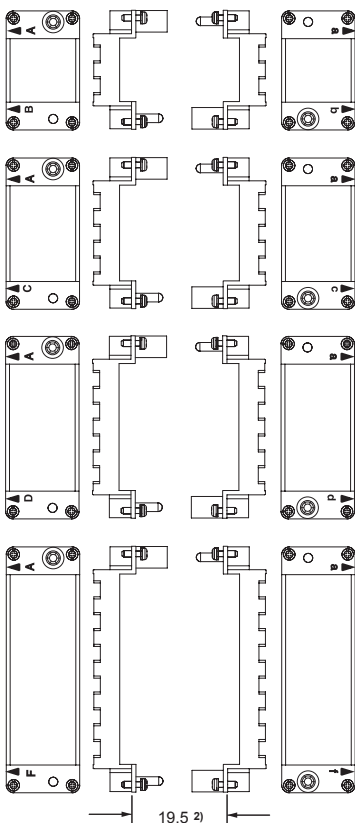
CX CFM

- die-cast zinc alloy frames
- protective earth (PE)
- possibility of mounting female and male modular units on the same frame
- frames supplied with lock-in tabs to attach units
- polarisation on frames
- code pins CR..CX

Polarisation of frames with relative identification letters and couplings

frame for hoods <sup>1)</sup>

frames for housings <sup>1)</sup>

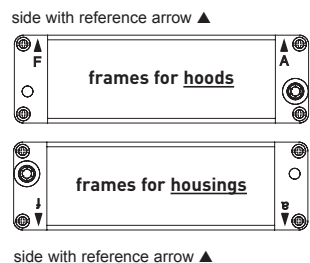


part No.	A (mm)	for housings size
<b>CX 02 TM / TF</b>	44	44,27
<b>CX 03 TM / TF</b>	57	57,27
<b>CX 04 TM / TF</b>	77,5	77,27 and 77,62
<b>CX 06 TM / TF</b>	104	104,27 and 104,62

Earth terminal

- large: for cables from 4-6 mm<sup>2</sup>, AWG 12-10
- small: for cables from 1-2,5 mm<sup>2</sup>, AWG 18-14

position of modules (contact side view)



- <sup>1)</sup> **Warning:** The module support frames are marked:
- FOR HOODS: **upper-case A-B, A-C, A-D and A-F**
  - FOR HOUSINGS: **lower-case a-b, a-c, a-d and a-f**

Positioning the modules in the frames according to the respective letters is ensuring the specular assembly of modules, for which the hood will be coupled correctly to the housing.

<sup>2)</sup> Distance for:

- electric and fibre optic contacts: max 21 mm
- pneumatic contacts: max 20,5 mm

## THE 37-VARIANT RANGE OF CHOICE

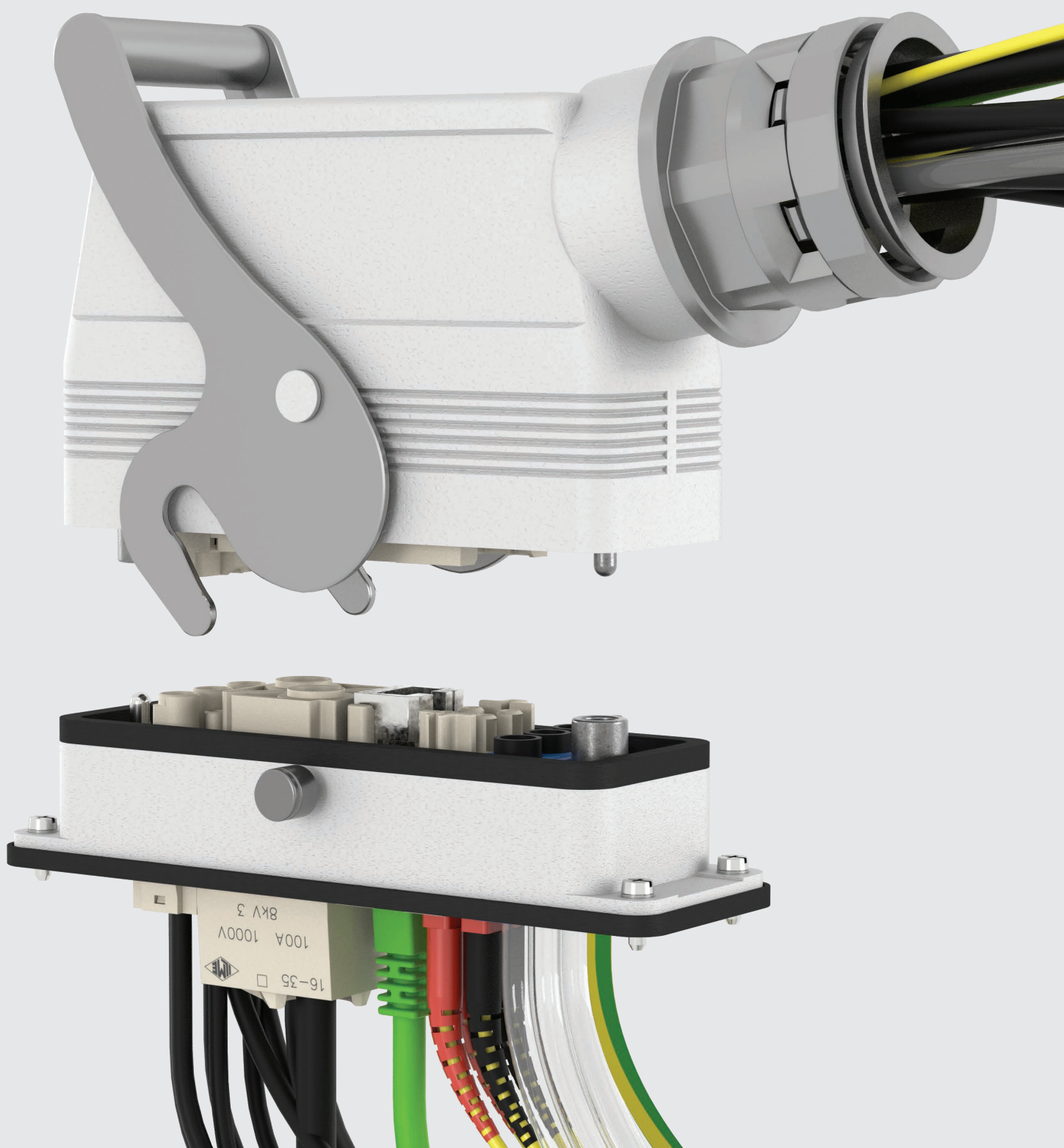
ILME MIXO portfolio includes a series of key modular units being continuously widened:

<b>19 modules</b>	<b>for electric power (and signal) transmission</b> with contacts for rated current up to:
- 1 module for 200A	with CX 01 YF/YM and CX 01 YPEF/YPEM (for PE connection) (crimp)
- 2 modules for 100A	with CX 02 GF/GM and CX 01 GF/GM (crimp)
- 1 module for 70A	with CX 02 7F/7M (crimp)
- 7 modules for 40A	with CX 02 4F/4M (crimp), CX 02 4AF/4AM and CX 02 4BF/4BM (axial screw), CX 03 4F/4M and CX 03 4BF/4BM (crimp), CX 3/4 XDF/XDM (crimp), CX 04 XF/XM (crimp)
- 5 modules for 16A	with CX 05 SF/SM (spring clamp), CX 06 P CF/CM, CX 06 CF/CM, CX 08 CF/CM, CX 20 CF/CM
- 2 modules for 10A	with CX 12 DF/DM (crimp), CX 17 DF/DM (crimp)
- 1 module for 4A	with CX 25 IF/IM and CX 25 IBF/IBM (crimp)
<b>2 modules</b>	<b>for high voltage connections</b> 16A – 2,9/5,0 kV with CX 02 HF/HM and 2,5 kV with CX 02 CHF/ CHM
<b>4 MIXO-BUS</b>	<b>shielded connectors for bus data transmission:</b>
- 1 module CX 02 BF/BM	for two shielded connectors to be chosen among the following 4 options:
1. CX 01 BF/BM	coaxial, 10A (crimp) – 75 Ω characteristic impedance
2. CX 01 BCF/BCM	coaxial, 16A (crimp) – 50 Ω characteristic impedance
3. CX 04 BF/BM	quad-axial 10A (crimp)
4. CX 08 BF/BM	8-ways 5A (crimp)
<b>3 modules/adapters</b>	<b>for RJ-45:</b>
- CX 01 J8F/J8M/J8IM	single-sized module for 1 RJ-45 patch cord, female module is a “gender changer”
- CX 01 JF/JM	double-sized module for 1 RJ-45 patch cord + 4 auxiliary 10A (crimp) contacts
- CX 02 JF/JM	triple-sized module for 2 RJ-45 patch cords + 8 auxiliary 10A (crimp) contacts
<b>1 module</b>	<b>for Gigabit Ethernet</b> , with CX 08 I6F/ I6M, 5 A (crimp) and relevant accessories
<b>1 module/adapter</b>	<b>for USB:</b>
	male adapter for USB patch cord
	female adapter is a F/F “gender changer”, for rear connection to a male USB patch cord with CX 01 UF/ UM
<b>2 modules</b>	<b>with D-Sub 9-pole</b> with CX 01 9VF/9VM, 5A (crimp) and CX 01 9VTF (for RS-485 T-connection)
<b>2 modules</b>	<b>for pneumatic quick-couplings</b> with CX 02 P and CX 03 P
<b>3 modules</b>	<b>for fibre optic</b> (POF or MOST® or SC) or coaxial crimp contacts (50 Ω or 75 Ω characteristic impedance) with CX 04 LF/LM, CX 04 RF/RM and CX 04 SCF/SCM

In addition to:

<b>5 frames</b>	for the build-up of a modular connector. The connector consists of a multiple number of the above listed single-sized and/or double-sized modular units and/or triple-sized modules; 4 frames in particular fit the main housing sizes:
- “44.27”	for 2 single-sized modules or 1 double-sized module;
- “57.27”	for 3 single-sized modules or a combination of 1 single-sized module or 1 double-sized module, or 1 triple-sized module;
- “77.27”	for 4 single-sized modules, 2 double-sized modules, 1 triple-sized module and 1 single-sized module, or a combination of 2 single-sized modules or 1 double-sized module;
- “104.27”	for 6 single-sized modules, 4 single-sized modules and 1 double-sized module, 2 single-sized modules and 2 double-sized modules, 3 double-sized modules, 2 triple-sized modules, 1 triple-sized module and 1 double-sized module and 1 single-sized module, or 1 triple-sized module and 3 single-sized modules.
<b>1 frame</b>	for the build-up of 1 single-sized module in connector housings size “49.16”.

The frame range allows the build-up of 7 different sizes of multipole modular connectors (this because 2 frames each of sizes “77.27” and “104.27” may be additionally combined in the double-sized “77.62” and “104.62” connector housings).



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**POF contacts CL series  
CLF DD / CLM DD**

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The new POF contacts series  
CLF DD and CLM DD can be used  
in combination with POF fibre  
in ILME range of heavy duty multipole  
connectors



Find more  
information on  
our products at  
[www.ilme.com](http://www.ilme.com)



# TECHNICAL FEATURES

## CLF DD / CLM DD

Fibre optic cables provide data transmission not subject to electromagnetic interference, contrary to copper-based (electric) data transmission.

The new fibre optic contacts **CL series (CLF DD and CLM DD)** can be used in combination with POF (polymer optical fibre) Ø 1,0 mm (core) / 2,2 mm (sheath) in ILME range of heavy duty multipole connectors, offering the following features:

- inherent immunity to EMI (electromagnetic interference);
- perfect electrical insulation;
- lightweight;
- high transmission capacity and high bandwidth;
- high data security;
- IP66/IP67 recommended to minimize impairing effect of dust contamination;
- male and female contacts CL series for POF Ø 1,0 mm (core) / 2,2 mm (sheath), with same geometry of crimp contacts CD series for conventional copper conductors;
- usable in connector inserts with contact cavities geometry of CDD series, including some modules of MIXO series and some inserts of CQ series, according to **Table 1**.  
Not for use in CD inserts series<sup>1)</sup>;

- use of **alignment/coding pins on connectors/connector modules is mandatory** for fibre optic applications, in order to avoid damages to contacts and in order to minimize the natural attenuation of light signal which is mainly due to inaccuracy of the mating surfaces of the POF (polishing and perfect cleanliness of the two mating fibres) and to axial misalignment;
- POF to be stripped, crimped, cut and polished according to instructions on pages besides.
- for size "77.62" 2-insert combinations use JCHI 32 L/LP (page 120 catalogue XDG JEI 415) or a special version with stainless steel rigid lever available upon request.
- for the installation of fibre optic, **it is recommended to use only bulkhead mounting housings and corresponding hoods with vertical cable outlet.**

**Table 1.**

<b>CDD series</b>	CDDF/M 24
NOTE – Not suitable for CDDF/M 38 /38 N	CDDF/M 42
	CDDF/M 72, CDDF/M 72 N
	CDDF/M 108, CDDF/M 108 N
<b>CQ series</b>	CQF/M 07
	CQF/M 12
	CQF/M 17
<b>MIXO series</b>	CX 12 DF/DM (p. 40 this ctg.)
modular connectors	CX 17 DF/DM
<b>CX series</b>	CXF/M 8/24
combined connectors – aux poles	CXF/M 6/36
number of cavities highlighted in <b>bold</b>	CXF/M 12/2

**male and female contacts CL series for POF Ø 1,0 mm (core) / 2,2 mm (sheath), with same geometry of crimp contacts CD series for conventional copper conductors**



<sup>1)</sup> For CD inserts series a similar solution for use of POF Ø 1 mm may be developed upon request: please contact our Sales Department or our local Subsidiaries/Distributors.

# CLF DD / CLM DD

inserts:		page:
CDD	(10A)	67-74 *
CQF/M 07	(10A)	8 ***
CQF/M 12	(10A)	165 *
CQF/M 17	(10A)	10 ***
MIXO CX 12 DF/DM	(10A)	38
MIXO CX 17 DF/DM	(10A)	195 *
CXF/M 8/24	(10A)	169 *
CXF/M 6/36	(10A)	170 *
CXF/M 12/2	(10A)	171 *

\* refer to CN.16 pages  
 \*\* refer to NEWS 2016 pages  
 \*\*\* refer to NEWS 2017 pages

## POF crimp contacts



 AVAILABLE FEBRUARY 2018

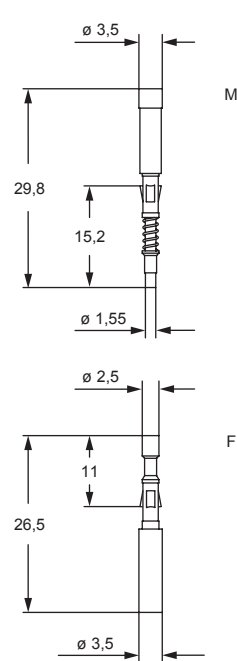
description	part No.
-------------	----------

female contacts for POF\*  
 male contacts for POF\*

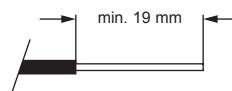
CLF DD  
 CLM DD

### POF = Polymer Optical Fibre

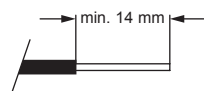
- ambient temperature limit: -40 °C ... +85 °C
- max external diameter: 2,2 mm (POF)
- polymer fibre diameter: 1 mm (POF)
- to crimp contacts CLF DD and CLM DD please use tool CLPZ R
- we recommend use of guide pins CRM/CRF (refer to page 487 catalogue CN.16)



#### conductor stripping



male contacts



female contacts

# tools and accessories

for contacts series:

page:

manual crimping tool

removal tool

CLF DD/CLM DD

48

Front view



CCES



polishing disc, polish paper, jacket stripper, fibre stripper, cable cutter (see below)

description	part No.	part No.
RENNSTEIG model crimping tool for POF* CLF DD / CLM DD contacts	CLPZ R	
removal tool, for the extraction of contacts from the CD, CDD, CX inserts		CCES
polishing disc (RATIOPLAST 910 PS R15 00 001) - for POF* contacts		CLDL DD
polish paper: - grain size 1000 (RATIOPLAST 910 PB 001 00 001)		CLC1
jacket stripper (RATIOPLAST 910 AZ 001 00 PA1) - for POF* fibre optic with PA jacket		CLSG
fibre stripper (RATIOPLAST 910 AB 001 00 001) - for POF* fibre optic		CLSP
cable cutter (RATIOPLAST 910 SW 001 00 001) for Ø 2,3 mm max, for POF* fibre optic		CLTE

POF = Polymer Optical Fibre

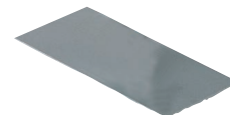
Rear view



CLDL DD



CLC1



CLSG



CLSP



CLTE



## use and maintenance instructions

### GENERAL SPECIFICATIONS

Strip the fibre 19 mm for male contact and 14 mm for female contact (refer to Figures 1 and 2).

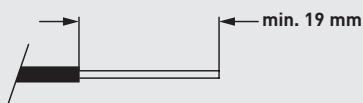


Fig. 1 - Example of cable stripping for male crimp contact

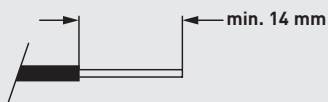


Fig. 2 - Example of cable stripping for female crimp contact

### FINISHING THE FRONT SURFACE OF THE FIBRE OPTIC

- Before crimping, insert POF fibre optic into the polishing disc (CLDL DD) as shown in Fig. 3.
- Work on a smooth surface (such as a sheet of glass), use grade 1000 polishing paper.
- Polish making 8-shape circles.
- Wipe away any residue remaining after grinding.

The best optical attenuation values are achieved when a wet grinding method is used.

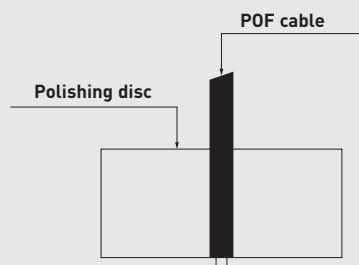


Fig. 3 - Polishing Disc with Guide for POF fibre

### CRIMPING INSTRUCTIONS

- The **CLPZ R** crimping tool data sheet explains how the crimping tool works and how to adjust the crimping depth and locator to crimp the contacts as shown in Fig. 4.
- Select position no. 1 on the turret (for male contact) and no. 2 (for female contact), push and turn of 90° the knob of the turret.
- Adjust the crimping depth on 1,45 (unscrew the allen screw, after adjusting refix the screw).
- Insert the contact together with the fibre optic cable as far as possible into the crimping opening of the crimping tool (**CLPZ R**, refer to Fig. 5) while applying gentle pressure to the fibre optic connector, close the tool until you hear it disengages.

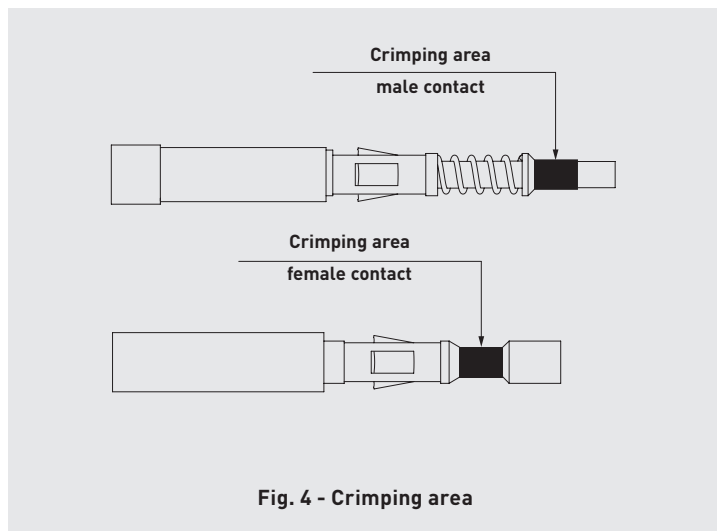


Fig. 4 - Crimping area

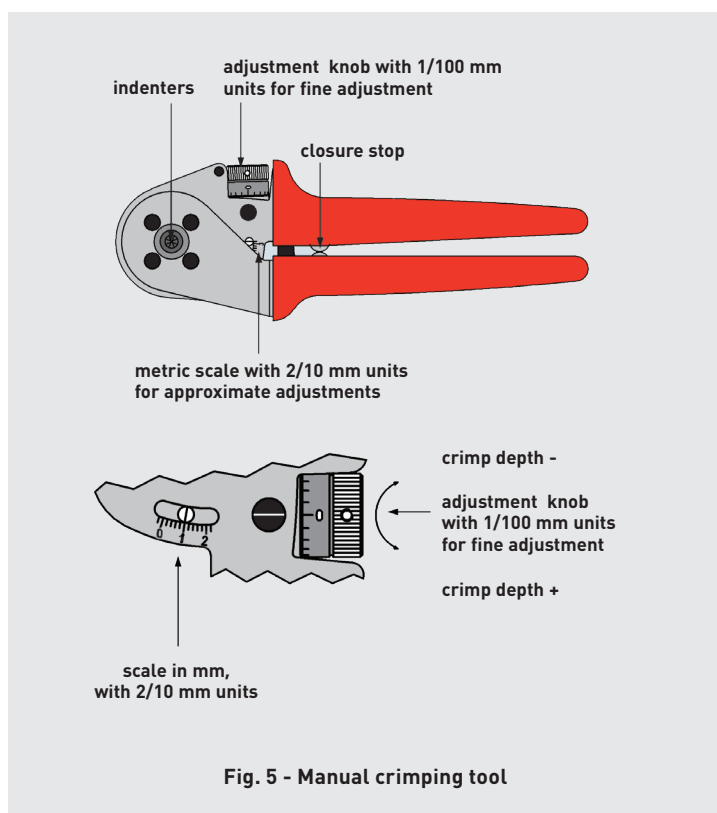


Fig. 5 - Manual crimping tool

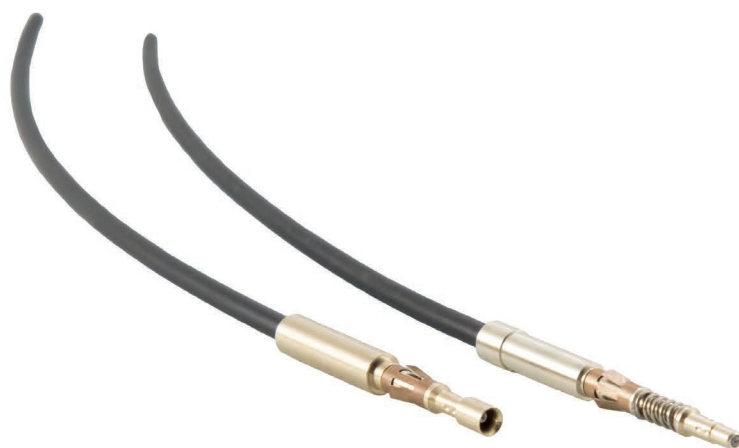
### FINAL MOUNTING INSTRUCTIONS

Put inside the CDD/CX insert.



Watch our online tutorial

### CLF DD / CLM DD POF CONTACTS

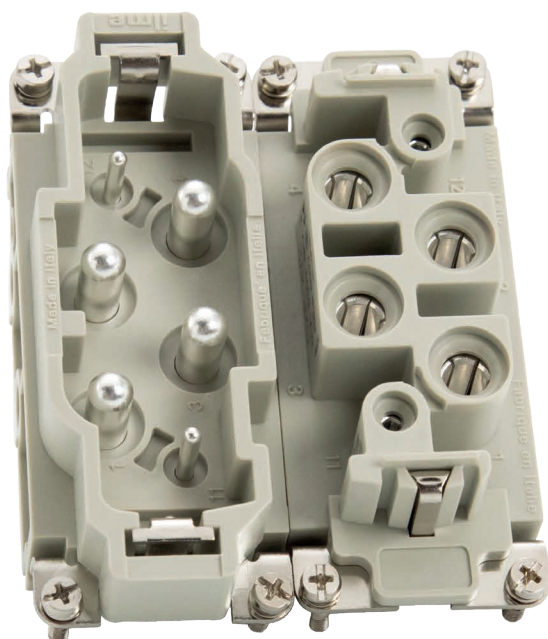


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## CX INSERTS

CXF 4/0, CXM 4/0, CXF 4/2, CXM 4/2

---



4 poles 80A

(+2 aux 16A 400V)

screw type connector inserts

upgrade to 830V AC or DC

(from previous voltage 690V)



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## TECHNICAL FEATURES

### CXF 4/0, CXM 4/0, CXF 4/2, CXM 4/2

To achieve a **higher rated voltage** of their four 80A rated power contacts, up to **830V AC or DC**, these screw type inserts size "77.27" – which in the 4/2 variant have also 2 auxiliary contacts for up to 16A at 400V AC or DC – have been now upgraded by reshaping their mating face to increase the insulating distances.

The new inserts maintain the same part numbers and are fully backwards compatible with previous 690V-rated versions. In case of mating with a 690V old version, the connector shall be used at no more than 690V.

upgrade achieved  
by reshaping  
the mating face  
to increase the  
insulating distances

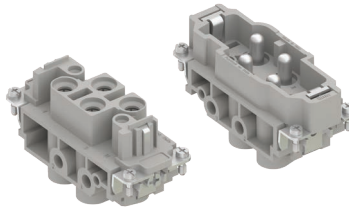


# CXF/M 4/0 4 poles (80A - 830V) + ⊕

enclosures size "77.27"	page:	
C-TYPE IP65/IP66	250-256	*
C7 IP67, two levers	276	*
V-TYPE IP65/IP66, single lever	282-292, 295	*
BIG hoods	312-315	*
T-TYPE IP65 insulating	330-331	*
T-TYPE/W IP66 insulating	340-341	*
HYGIENIC T-TYPE/H IP66/IP69	354-355	*
HYGIENIC T-TYPE/C IP66/IP69, -50 °C	362-363	*
W-TYPE for aggressive environments	375	*
EMC	394	*
Central lever	408-409	*
IP68	428-431	*
LS-TYPE	454-455	*
E-Xtreme® C7 IP67, two levers	46-47	**
E-Xtreme® IP66/IP67	57	**
E-Xtreme® IP68	66-67	**
panel supports		
COB	462-463	*

\* refer to CN.16 pages  
 \*\* refer to NEWS 2017 pages

## inserts, screw terminal connection

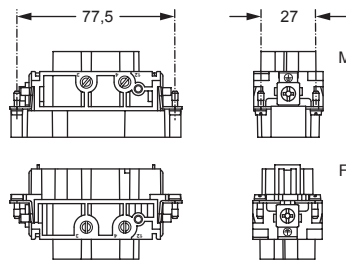


**NEW RATING 830V**  
**SILVER PLATED CONTACTS**  
**AVAILABLE MARCH 2018**

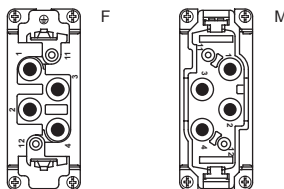
description	part No.
-------------	----------

female inserts with female contacts	<b>CXF 4/0</b>
male inserts with male contacts	<b>CXM 4/0</b>

- characteristics according to EN 61984:
- 80A 830V 8kV 3**
- UL, CSA, CQC, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit:  $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:  $\leq 0,3 \text{ m}\Omega$  (4 poles)
- for maximum current load refer to the connector inserts derating diagram below

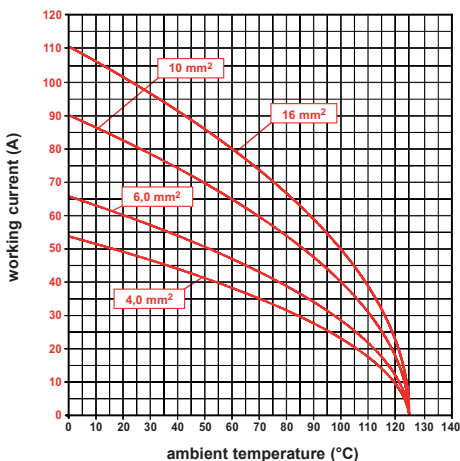


contacts side (front view)



- 80A contacts**
- without plate for section conductors: 4 - 16 mm<sup>2</sup> - AWG 12 - 6
  - conductors stripping length: 14 mm
  - terminal screw torque: 2,5 Nm (22.1 lb.in), for more information refer to pages 34-35 of CN.16 catalogue

**CX 4/0 poles connector inserts**  
**Maximum current load derating diagram**



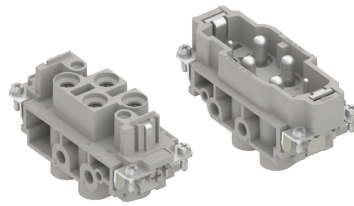


# CXF/M 4/2 4 poles (80A - 830V) + 2 poles (16A - 400V) + ⊕

enclosures size "77.27"	page:	
C-TYPE IP65/IP66	250-256	*
C7 IP67, two levers	276	*
V-TYPE IP65/IP66, single lever	282-292, 295	*
BIG hoods	312-315	*
T-TYPE IP65 insulating	330-331	*
T-TYPE/W IP66 insulating	340-341	*
HYGIENIC T-TYPE/H IP66/IP69	354-355	*
HYGIENIC T-TYPE/C IP66/IP69, -50 °C	362-363	*
W-TYPE for aggressive environments	375	*
EMC	394	*
Central lever	408-409	*
IP68	428-431	*
LS-TYPE	454-455	*
E-Xtreme® C7 IP67, two levers	46-47	**
E-Xtreme® IP66/IP67	57	**
E-Xtreme® IP68	66-67	**
panel supports		
COB	462-463	*

\* refer to CN.16 pages  
 \*\* refer to NEWS 2017 pages

## inserts, screw terminal connection



**NEW RATING 830V**  
**SILVER PLATED CONTACTS**  
**AVAILABLE MARCH 2018**

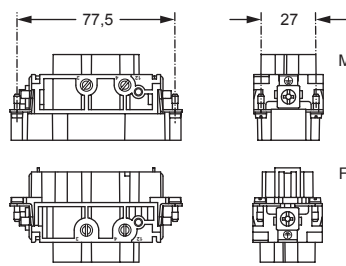
description	part No.
-------------	----------

female inserts with female contacts **CXF 4/2**  
 male inserts with male contacts **CXM 4/2**

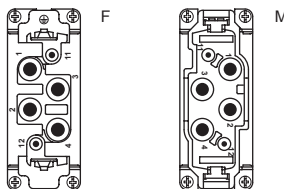
- characteristics according to EN 61984:

**80A 830V 8kV 3**  
**16A 400V 6kV 3**  
**16A 400/690V 6kV 2**

- UL, CSA, CQC, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit:  $-40 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:  $\leq 0,3 \text{ m}\Omega$  (4 poles)  
 $\leq 1 \text{ m}\Omega$  (2 poles)
- for maximum current load refer to the connector inserts derating diagrams at right



contacts side (front view)



### 80A contacts

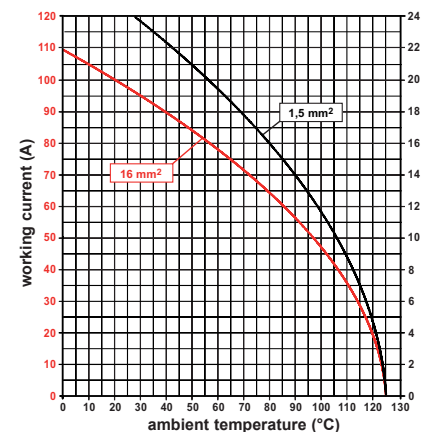
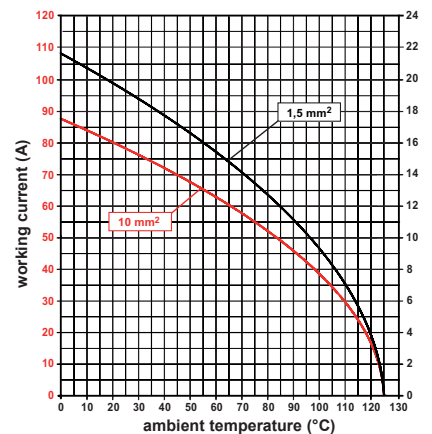
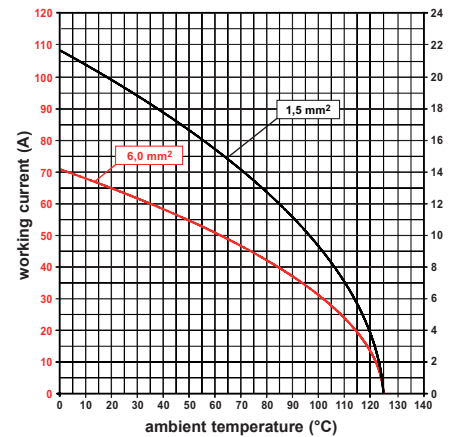
- without plate for section conductors: 4 - 16 mm<sup>2</sup> - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in), for more information refer to page 34 and 35 catalogue CN.16

### 16A contacts

- without plate for section conductors: 0,25 - 2,5 mm<sup>2</sup> - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in), for more information refer to pages 34-35 catalogue CN.16

### CX 4/2 poles connector inserts

#### Maximum current load derating diagram



---

## CX INSERTS - PPS VARIANT

CXF 4/0 RY, CXM 4/0 RY, CXF 4/2 RY, CXM 4/2 RY

---



Variants  
in >PPS-GF40<  
for high temperature  
up to 180 °C



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## TECHNICAL FEATURES

### CXF 4/0 RY, CXM 4/0 RY, CXF 4/2 RY, CXM 4/2 RY

These **variants** are made of high temperature withstanding thermoplastic material >PPS< and allow the use in environments with high ambient temperature up to 180 °C.

To achieve a **higher rated voltage** of their 4 80A rated power contacts, up to **830V AC or DC**, these screw type inserts size “77.27” – which in the 4/2 variant have also 2 auxiliary contacts for up to 16A at 400V AC or DC – have been now upgraded by reshaping their mating face to increase the insulating distances.

The new inserts maintain the same part numbers and are fully backwards compatible with previous 690V-rated versions. In case of mating with a 690V old version, the connector shall be used at no more than 690V.

Ry variants are made by high temperature withstanding thermoplastic material >PPS< for high temperature up to 180 °C



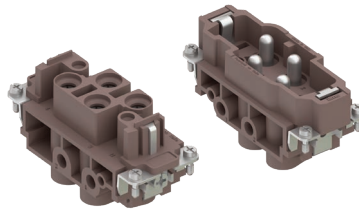
enclosures:  
size "77.27"

page:

inserts,  
screw terminal connection

For 180 °C

400



**NEW RATING 830V**  
**SILVER PLATED CONTACTS**  
**AVAILABLE APRIL 2018**

refer to CN.16 pages

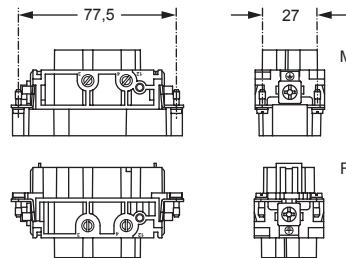
description

part No.

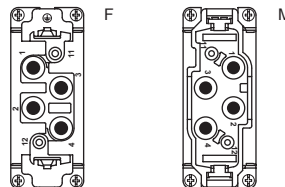
use in temperatures up to 180 °C  
female inserts with female contacts, brown  
male inserts with male contacts, brown

**CXF 4/0 RY**  
**CXM 4/0 RY**

- characteristics according to EN 61984:  
**80A 830V 8kV 3**
- UL, CSA, CQC, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit:  $-40 \text{ }^\circ\text{C} \dots +180 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:  $\leq 0,3 \text{ m}\Omega$  (4 poles)
- for maximum current load refer to the connector inserts derating diagram below



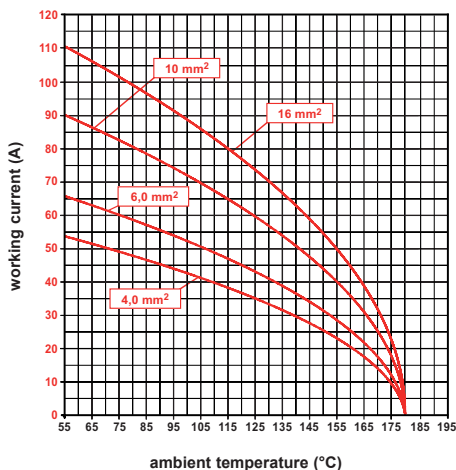
contacts side (front view)



**80A contacts**

- without plate for section conductors:  
4-16 mm<sup>2</sup> - AWG 12-6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in),  
for more information refer to pages 34-35  
catalogue CN.16

**CX RY 4/0 poles connector inserts**  
**Maximum current load derating diagram**



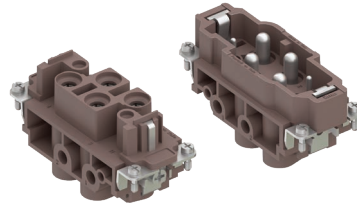
enclosures:  
size "77.27"

page:

inserts,  
screw terminal connection

For 180 °C

400



**NEW RATING 830V**  
**Q SILVER PLATED CONTACTS**  
 **AVAILABLE MARCH 2018**

refer to CN.16 pages

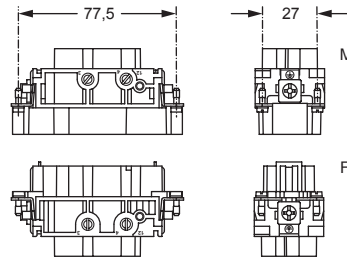
description

part No.

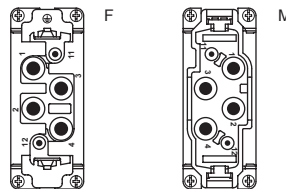
use in temperatures up to 180 °C  
female inserts with female contacts, brown  
male inserts with male contacts, brown

CXF 4/2 RY  
CXM 4/2 RY

- characteristics according to EN 61984:  
**80A 830V 8kV 3**  
**16A 400V 6kV 3**  
**16A 400/690V 6kV 2**
- UL, CSA, CQC, DNV-GL, EAC certified
- rated voltage according to UL/CSA: 600V
- insulation resistance:  $\geq 10 \text{ G}\Omega$
- ambient temperature limit:  $-40 \text{ }^\circ\text{C} \dots +180 \text{ }^\circ\text{C}$
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life:  $\geq 500$  cycles
- contact resistance:  $\leq 0,3 \text{ m}\Omega$  (4 poles)  
 $\leq 1 \text{ m}\Omega$  (2 poles)
- for maximum current load refer to the connector inserts derating diagrams below



contacts side (front view)



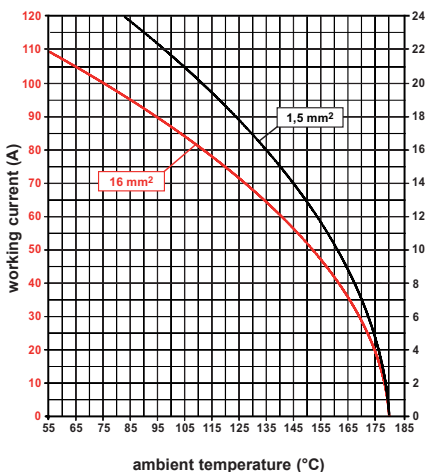
**80A contacts**

- without plate for section conductors:  
4 - 16 mm<sup>2</sup> - AWG 12 - 6
- conductors stripping length: 14 mm
- terminal screw torque: 2,5 Nm (22.1 lb.in),  
for more information refer to pages 34-35  
catalogue CN.16

**16A contacts**

- without plate for section conductors:  
0,25 - 2,5 mm<sup>2</sup> - AWG 24 - 14
- conductors stripping length: 7 mm
- terminal screw torque: 0,5 Nm (4.4 lb.in),  
for more information refer to pages 34-35  
catalogue CN.16

**CX RY 4/2 poles connector inserts**  
**Maximum current load derating diagram**



## THE NEW PCB ADAPTERS CIF SERIES

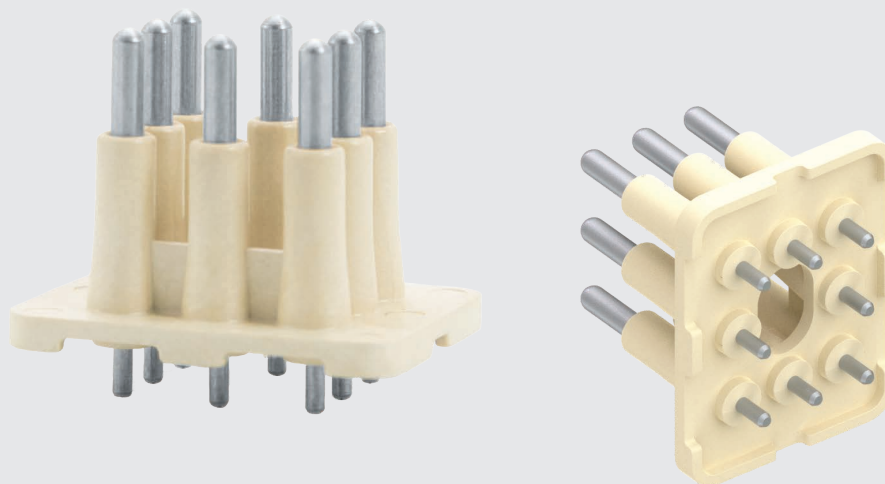
CIF series of connector interfaces for PCB, also known as PCB adapter connectors extends the portfolio of **ILME multipole heavy-duty rectangular industrial connectors with cable to board connections.**

Direct connection to the PCB, with no intermediate wiring between the PCB and the connector, prevents wiring faults and minimizes the assembly time.

The range, that includes adapters for the standard CDD series, is being progressively widened with the addition of new dedicated PCB adapter connectors.

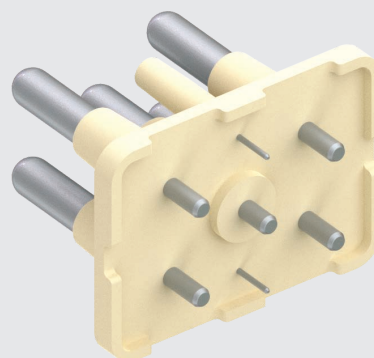
By fixing the PCB adapter through approved ILME connector housings, the force on the solder joints and the board is minimized when mating the connectors. To protect the connection against external electrical interference, the use of EMC housings is also possible.

### THE NEW SILVER PLATED PCB ADAPTERS CIF SERIES



## MAIN FEATURES OF CIF SERIES

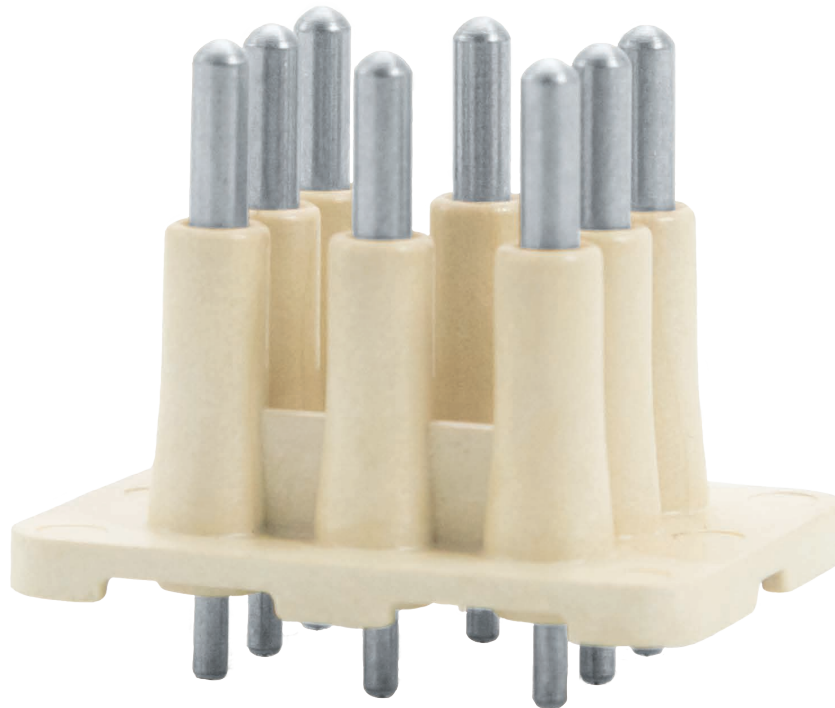
- suitable for **standard and EMC housings** (type depends on connector);
- robust design;
- low wiring costs;
- high contact density (depending on connector "footprint");
- provides secondary mating between an industrial cable connector and the printed circuit board;
- no higher force is applied on the soldering joints when mated with the industrial connector, thanks to an additional mating point;
- no wiring between the printed circuit board and the industrial connector which serves as interface for the cable connection (input or output) is necessary. This implies no wiring faults, no testing and no added costs;
- connecting time between the electronics and the cable is minimized, with relevant cost saving;
- possibility to make the production of mechanical and electrical/electronic components independent;
- possibility to reach a higher degree of automation in the production (i.e. PCB wave soldering).



---

**PCB ADAPTER FOR CQ 8 INSERTS**  
**CIF Q08 1.6**

---



PCB Adapter 8P  
16A 230/400V 4kV 2  
line-to-earth 230V  
line-to-line 400V  
Pollution Degree 2



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# TECHNICAL FEATURES

## CIF Q08 1.6

The **CIF** series of connector interfaces for PCB is progressively being enlarged by the addition of this new dedicated PCB adapter for **CQF/M 08** (8P, 16A contacts), a connector adopted by the decentralized automation VDMA **DESINA**® Specifications, now **ISO 23570-3:2009, Annex C**.

- **8P: 16A – 230/400 V 4kV 2** line-to-earth 230V / line-to-line 400V – **pollution degree 2** typical for printed circuit board applications;
- optionally, if required by the application, the PE contact connection can be made using a wired contact passing through the  $\varnothing$  6.4 mm PCB hole (refer to the PCB-Layout at page 66);
- PCB adapter with contacts for **PCB thickness up to 1,6 mm**;
- adapter made of LCP (liquid crystal polymer) to provide resistance to high temperature due to soldering;
- flame behaviour: UL 94V-0;
- operating temperature limits: -40 °C / +125 °C;
- **CCFFA** and **CCMFA** interface contacts (also known as “double contacts” as they have a mating face on both sides) to equip the output connector, according to its gender;
- contacts made of copper alloy;
- contact resistance:  $\leq 3$  m $\Omega$ ;
- robust design;
- high contact density;
- suitable for **CQ/MQ 08** series of hoods and housings (refer to CN.16 relevant pages).

### CIF Q08 1.6 PCB adapter for CQF/M 08

- CC series, female/female interface contacts for CQF 08 output insert (9 required) **CCFFA**
- CC series, male/female interface contacts for CQM 08 output insert (9 required) **CCMFA**

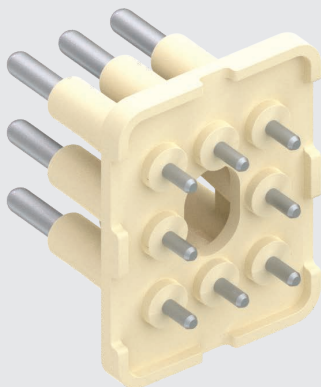
**CIF Q08 1.6** is installed on the PCB (refer to layout of PCB) by soldering.

Depending on the output connector gender, the corresponding interface power and signal contacts must be selected:

- power contacts: **CCFFA** for a female output insert (power feeding the PCB), **CCMFA** for a male output insert (power coming from PCB).

Relevant CQF 08 or CQM 08 inserts and bulkhead mounting housing must be purchased separately.

**PCB adapter  
with contacts for  
PCB thickness  
up to 1,6 mm**



# CIF Q08 1.6

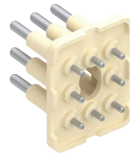
inserts:

CQ 8p

page:

167

interface  
for printed circuit



16A contacts for interface  
silver plated



refer to CN.16 pages

AVAILABLE SEPTEMBER 2018

**Q SILVER PLATED CONTACTS**  
 AVAILABLE SEPTEMBER 2018

description

part No.

part No.

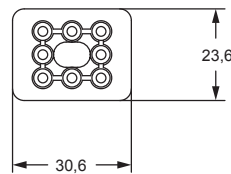
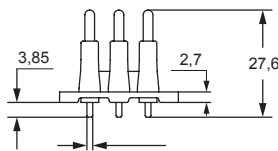
PCB adapter with contacts  
- for up to 1,6 mm thick PCB

CIF Q08 1.6

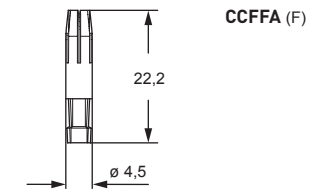
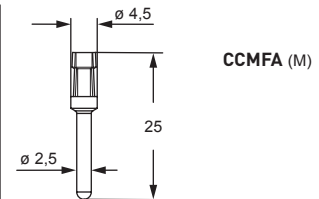
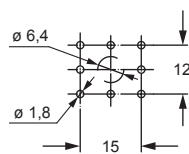
16A female contacts for female inserts  
16A male contacts for male inserts

CCFFA  
CCMFA

The block is soldered on the printed circuit on which the multipole connector (female or male) equipped with coupling contacts will then be inserted. Refer to next page.



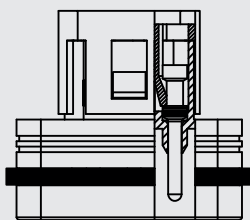
PCB-Layout



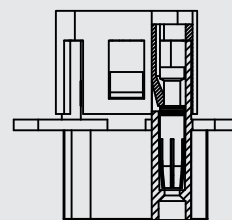
# ASSEMBLY INSTRUCTIONS

## CIF Q08 1.6 PCB ADAPTERS

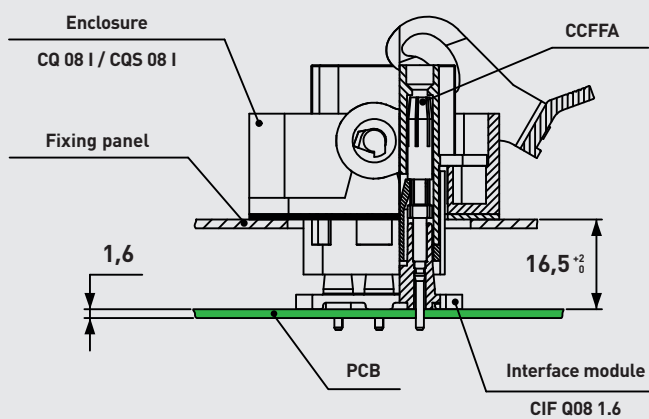
**CQM 08**



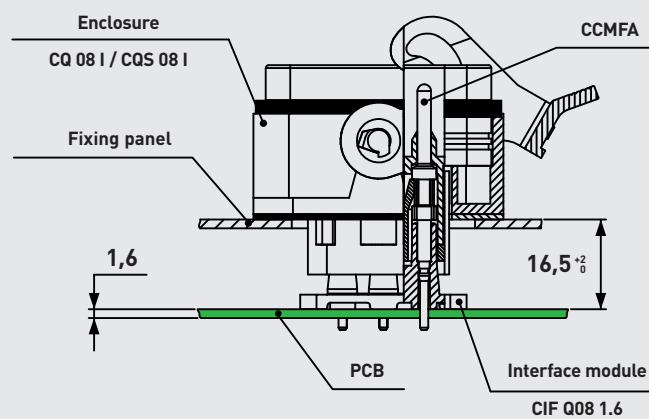
**CQF 08**



**CQF 08**



**CQM 08**



---

## PCB ADAPTER FOR CQ 04/2 INSERTS

### CIF Q4/2 2.4

---



PCB Adapter 4P + ⊕  
30A 400/690V 6kV 2  
line-to-earth 400V  
line-to-line 690V  
Pollution Degree 2



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## TECHNICAL FEATURES

### CIF Q4/2 2.4

The **CIF** series of connector interfaces for PCBs is progressively being enlarged by the addition of this new dedicated PCB adapter for **CQF/M 04/2** (4P+PE, 40A contacts + 2P auxiliary 10A contacts), adopted by the decentralized automation VDMA German **DESINA®** Specifications, now **ISO 23570-3:2009, Annex A.**

- **4P+PE (power): 30A – 400/690V 6 kV 2** line-to-earth 400 V / line-to-line 690 V – **pollution degree 2** typical for printed circuit board applications;
- **2P** (auxiliary): **7,5A – 250V 4 kV 2**;
- PCB adapter with contacts for **PCB thickness up to 2,4 mm**;
- adapter made of LCP (liquid crystal polymer) to provide resistance to high temperature due to soldering;
- flame behaviour: UL 94V-0;
- operating temperature limits: -40 °C / +125 °C;
- **CXFFA** and **CXMFA**, silver plated interface power contacts (also known as "double contacts" as they have mating face on both sides) to equip the output connector, according to its gender;
- **CDFA 6A28** and **CDMA 6A** interface signal contacts, to equip the signal side of output connectors;
- contacts made of copper alloy;
- contact resistance: ≤ 3 mΩ;
- robust design;
- suitable for **CQ/MQ 08** series of hoods and housings (refer to CN.16 relevant pages).

#### CIF Q4/2 2.4 PCB adapter for CQF/M 04/2

- CX series, female/female interface contact for CQF 04/2 output insert (5 required) **CXFFA**
- CD series, female interface contact for CQF 04/2 output insert (2 required) **CDFA 6A28**
- CX series, male/female interface contact for CQM 04/2 output insert (5 required) **CXMFA**
- CD series, male interface contact for CQM 04/2 output insert (2 required) **CDMA 6A**

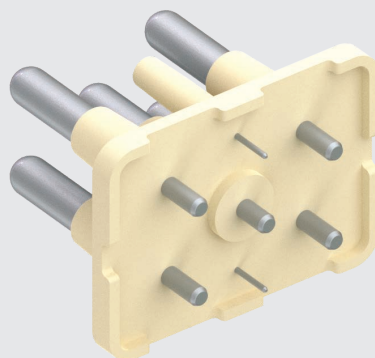
**CIF Q4/2 2.4** is installed on the PCB (refer to layout of PCB) by soldering.

Depending on the output connector gender, the corresponding interface power and signal contacts must be selected:

- power contacts: **CXFFA** for a female output insert (power feeding the PCB), **CXMFA** for a male output insert (power coming from PCB);
- signal contacts: **CDFA 6A28** for a female output insert, **CDMA 6A** for a male output insert.

Relevant CQF 04/2 or CQM 04/2 inserts and bulkhead mounting housing must be purchased separately.

**PCB adapter  
with contacts for  
PCB thickness  
up to 2,4 mm**



# CIF Q4/2 2.4

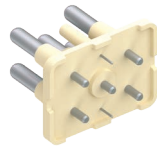
inserts:

CQ 4/2p + ⊕

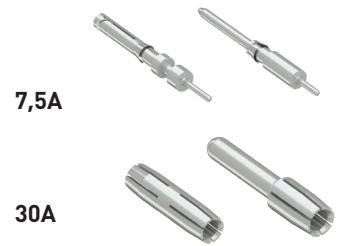
page:

168

interface  
for printed circuit



7,5A and 30A contacts for interface  
silver plated



refer to CN.16 pages

**AVAILABLE SEPTEMBER 2018**

**Q SILVER PLATED CONTACTS**

**AVAILABLE SEPTEMBER 2018**

description

part No.

part No.

PCB adapter with contacts  
- for up to 2,4 mm thick PCB

CIF Q4/2 2.4

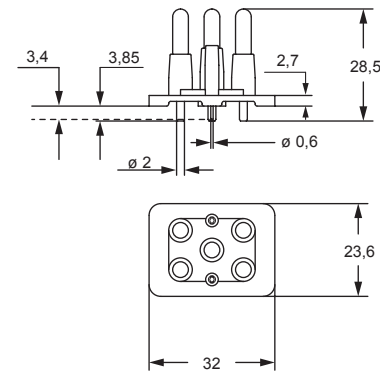
7,5A female contacts for female inserts  
7,5A male contacts for male inserts

CDFA 6A28  
CDMA 6A

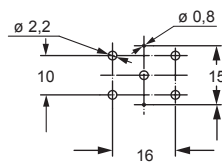
30A female contacts for female inserts  
30A male contacts for male inserts

CXFFA  
CXMFA

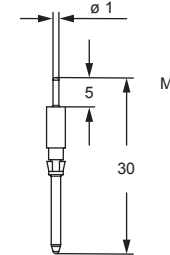
The block is soldered on the printed circuit on which the multipole connector (female or male) equipped with coupling contacts will then be inserted.  
Refer to next page.



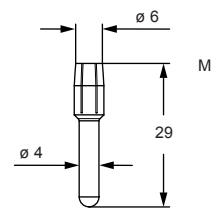
PCB-Layout



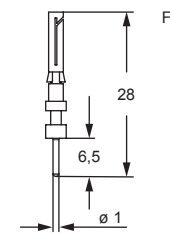
CDMA 6A



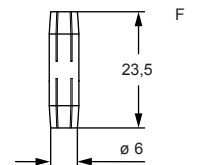
CXMFA



CDFA 6A28



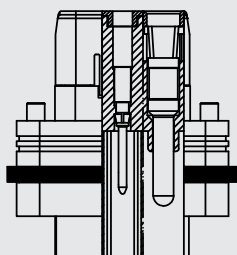
CXFFA



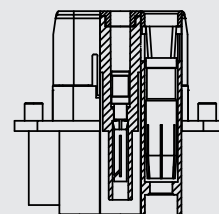
# ASSEMBLY INSTRUCTIONS

## CIF Q4/2 2.4 PCB ADAPTERS

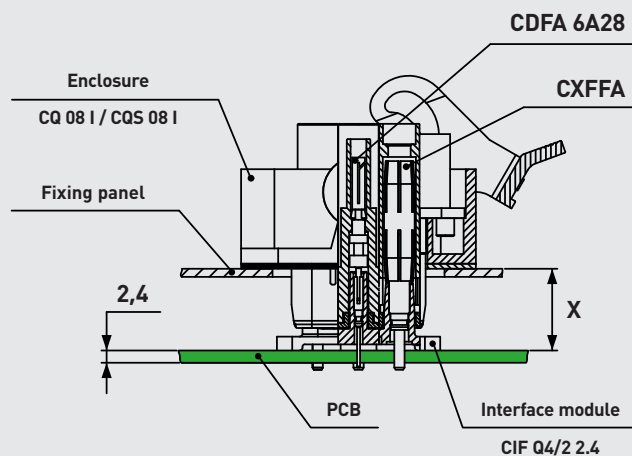
**CQM 04/2**



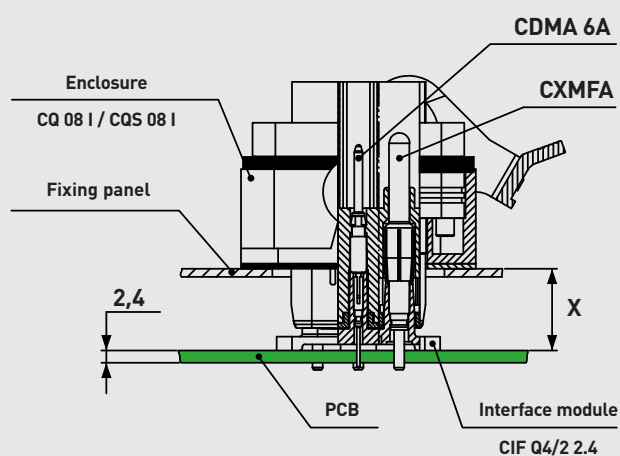
**CQF 04/2**



**CQF 04/2**



**CQM 04/2**



$X = 16^{+1}_0$  WITH SIGNAL CONTACT  
 $X = 16^{+2}_0$  WITHOUT SIGNAL CONTACT

$X = 16^{+1}_0$  WITH SIGNAL CONTACT  
 $X = 16^{+2}_0$  WITHOUT SIGNAL CONTACT

## ANGLED OUTLET METAL HOUSINGS

### CKA... IA4, MKA... AP25/IAP25 size “21.21”

In addition to the existing angled outlet metal housings series, ILME widens the range of “21.21” size with:

#### (X) Standard versions, resilient stainless steel lever

- CKAX 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAX IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAX AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### Standard version, rigid galvanized steel lever

- CKA 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKA IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKA AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### (XX) Standard version, rigid stainless steel lever

- CKAXX 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAXX IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAXX AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### (XW) W-Type versions for aggressive environments, resilient stainless steel lever

- CKAXW 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAXW IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAXW AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### (XXW) W-Type versions for aggressive environments, rigid stainless steel lever

- CKAXXW 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAXXW IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAXXW AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### (XS) S-Type EMC shielding versions, resilient stainless steel lever

- CKAXS 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAXS IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAXS AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### S-Type EMC shielding versions, rigid galvanized steel lever

- CKAS 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAS IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAS AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet

#### (XXS) S-Type EMC shielding versions, rigid stainless steel lever

- CKAXXS 03 IA4                bulkhead mounting, open flange – IA4 – and closed back (without cable entry)
- MKAXXS IAP25                bulkhead mounting, open flange – IAP – and open back with M25 cable outlet
- MKAXXS AP25                surface mounting, closed flange – AP – and open back with M25 cable outlet



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## MAIN FEATURES OF CKA... IA4, MKA... AP25/IAP25

- **New “21.21” sized connector 90° angled metal housings**, available either in:
  - **bulkhead mounting version**  
suffix **IA4** – with **open flange** and closed rear *or*,
  - **bulkhead mounting version**  
suffix **IAP** – with **open flange** and **M25** threaded rear cable outlet *or*,
  - **surface mounting version**  
suffix **AP** – with **closed flange** and **M25** threaded rear cable outlet;
- provided with a **longer body**, to house longer connector inserts and to allow more internal room for the 90° bending of larger wire sizes, such as 10 mm<sup>2</sup> – 8 AWG, required by the recently introduced CQ4M/F power connectors for up to 40A max rated current, or the increased overall diameter of the wire bundle required by connectors such as CQM/F 12 and CQM/F 21 with a large number of poles;
- **4 square flange fixing screws**, to support heavier load deriving from the cable/wire bundle, compared with classic 2-screws flange of standard “21.21” sized bulkhead mounting housings (“I” for straight version, “IA” or “IAP” for angled versions);
- flange sealing gasket – where provided – is **captively built-in** allowing direct contact between metal flange of EMC variants and metal mounting surface. Good EMC shielding is granted without the need of conductive sealing material;
- possibility to obtain **IP66/IP67/IP69** degree of protection by using **CKR 65** kit (or **CKR 65 D**, depending on inserts) special fixing screw with gasket;
- preferred choice for an increasing number of connector inserts in this size, covering a wide range of industrial applications: power transmission (e.g. to motors), sensitive data and control transmission, field bus applications, optical data transfer, etc.;
- available in several variants that differ by:
  - **locking lever material** (galvanized steel, by RoHS 2 conform electroplating, or stainless steel - “X” in the code - same rigid geometry but different corrosion resistance);
  - **locking lever stiffness**:
    - **resilient**, “Class” type with rolls, preferable for frequent disconnection and moderate mechanical load from the cable;
    - **rigid**, for higher mechanical load from the cable and less frequently expected operations;
  - **corrosion resistance**: W-Type versions, for aggressive environments;
  - **EMC shielding**: S-Type, with conductive surface (to be combined with use of EMC cable gland).

new “21.21” size  
connector 90° angled  
metal housings



# CKAX C-TYPE standard metallic version

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled bulkhead mounting housings



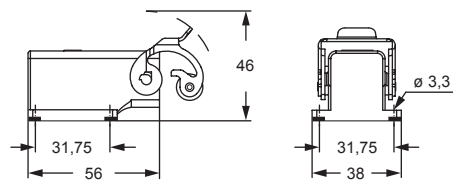
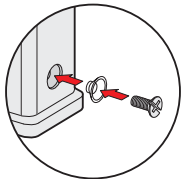
**STAINLESS STEEL LEVER**

**AVAILABLE MAY 2018**

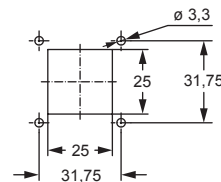
description	part No.
without cable entry, fixing by 4 screws	<b>CKAX 03 IA4</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CK, CKS, CKSH, CQ4, CQ inserts	<b>CKR 65</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CD 08 inserts	<b>CKR 65 D</b>

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# CKA - CKAXX C-TYPE standard metallic version

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled bulkhead mounting housings



GALVANIZED STEEL RIGID LEVER

AVAILABLE MAY 2018

## angled bulkhead mounting housings



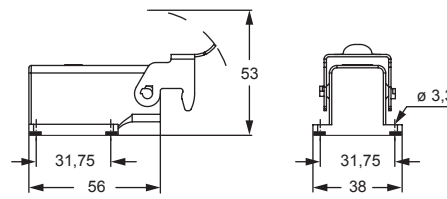
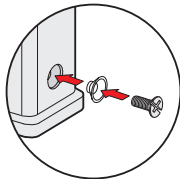
STAINLESS STEEL RIGID LEVER

AVAILABLE MAY 2018

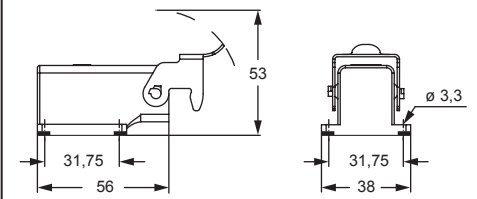
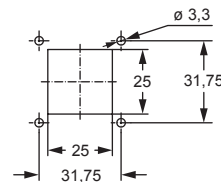
description	part No.	part No.
without cable entry, fixing by 4 screws	<b>CKA 03 IA4</b>	
without cable entry, fixing by 4 screws		<b>CKAXX 03 IA4</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CK, CKS, CKSH, CQ4, CQ inserts	<b>CKR 65</b>	<b>CKR 65</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CD 08 inserts	<b>CKR 65 D</b>	<b>CKR 65 D</b>

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

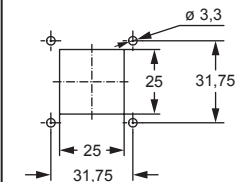
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# MKAX C-TYPE standard metallic version

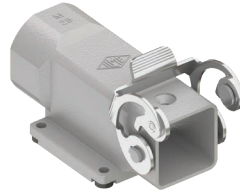
inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

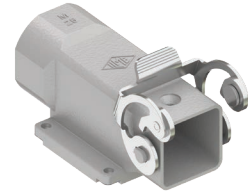
\*\*\* refer to NEWS 2017 pages

## angled surface mounting housings



**STAINLESS STEEL LEVER**  
**AVAILABLE MAY 2018**

## angled surface mounting housings



**STAINLESS STEEL LEVER**  
**AVAILABLE MAY 2018**

### description

with cable entry, fixing by 4 screws

part No.  
(entry M-25)

**MKAX IAP25**

with cable entry, fixing by 4 screws,  
bulkhead hole closed (without gasket)

part No.  
entry (M-25)

**MKAX AP25**

gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CK, CKS, CKSH, CQ4, CQ inserts

**CKR 65**

**CKR 65**

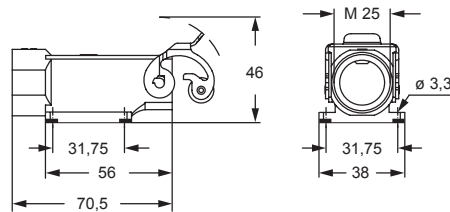
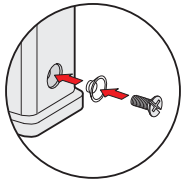
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CD 08 inserts

**CKR 65 D**

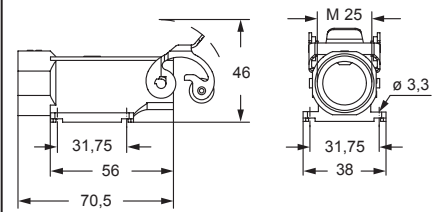
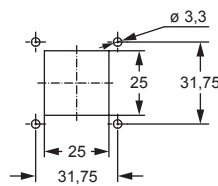
**CKR 65 D**

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

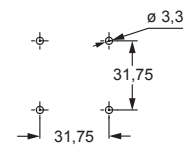
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# MKA - MKAXX C-TYPE standard metallic version

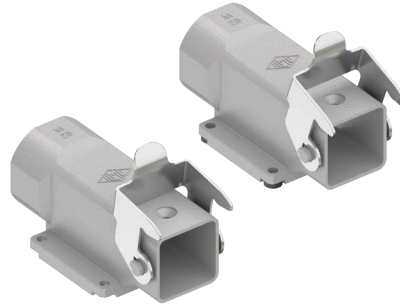
inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

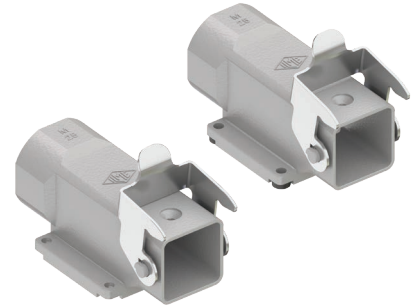
## angled surface mounting housings



GALVANIZED STEEL RIGID LEVER

AVAILABLE MAY 2018

## angled surface mounting housings



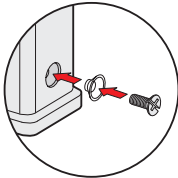
STAINLESS STEEL RIGID LEVER

AVAILABLE MAY 2018

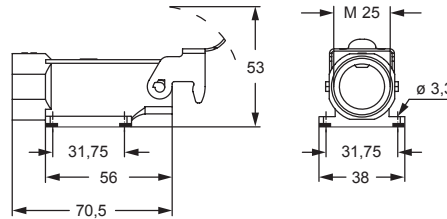
description	part No. (entry M-25)	part No. (entry M-25)
with cable entry, fixing by 4 screws	<b>MKA IAP25</b>	<b>MKAXX IAP25</b>
with cable entry, fixing by 4 screws, bulkhead hole closed (without gasket)	<b>MKA AP25</b>	<b>MKAXX AP25</b>
with cable entry, fixing by 4 screws		
with cable entry, fixing by 4 screws, bulkhead hole closed (without gasket)		
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CK, CKS, CKSH, CQ4, CQ inserts	<b>CKR 65</b>	<b>CKR 65</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CD 08 inserts	<b>CKR 65 D</b>	<b>CKR 65 D</b>

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

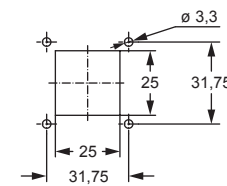
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



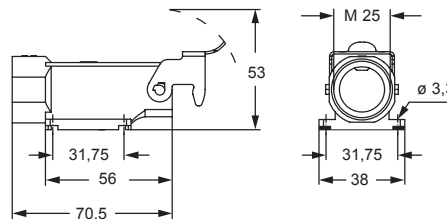
### MKA IAP



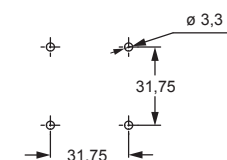
#### panel cut-out for enclosures



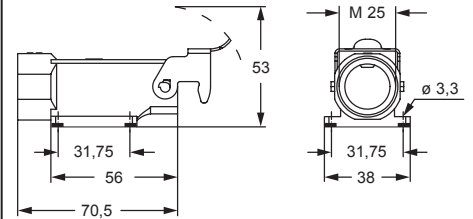
### MKA AP



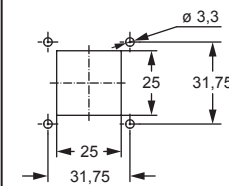
#### panel cut-out for enclosures



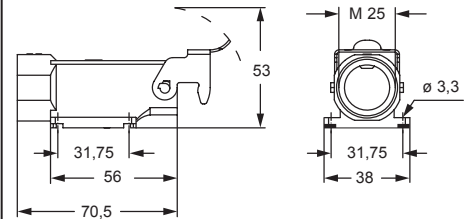
### MKAXX IAP



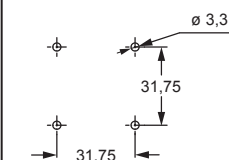
#### panel cut-out for enclosures



### MKAXX AP



#### panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# CKAXW W-TYPE version for aggressive environments

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled bulkhead mounting housings




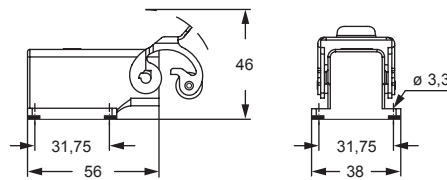
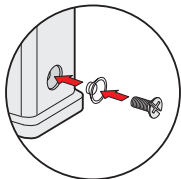
 **STAINLESS STEEL LEVER**

 **AVAILABLE MAY 2018**

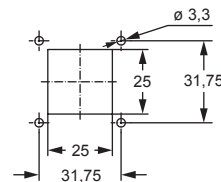
description	part No.
without cable entry, fixing by 4 screws	<b>CKAXW 03 IA4</b>
gasket and screw kit for IP66/IP67 and IP69 1)	<b>CKR 65</b>
for CK, CKS, CKSH, CQ4, CQ inserts	
gasket and screw kit for IP66/IP67 and IP69 1)	<b>CKR 65 D</b>
for CD 08 inserts	

1) To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

 **CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



1) IP66/IP67/IP69 with CKR 65 (D)

# CKAXXW W-TYPE version for aggressive environments

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled bulkhead mounting housings



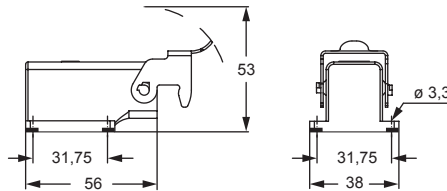
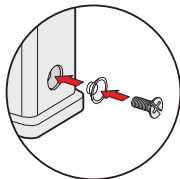
**STAINLESS STEEL RIGID LEVER**

**AVAILABLE MAY 2018**

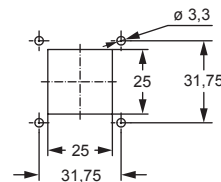
description	part No.
without cable entry, fixing by 4 screws	<b>CKAXXW 03IA4</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CK, CKS, CKSH, CQ4, CQ inserts	<b>CKR 65</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CD 08 inserts	<b>CKR 65 D</b>

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# MKAXW W-TYPE version for aggressive environments

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled surface mounting housings



**STAINLESS STEEL LEVER**  
**AVAILABLE MAY 2018**

## angled surface mounting housings



**STAINLESS STEEL LEVER**  
**AVAILABLE MAY 2018**

description

part No.  
(entry M-25)

part No.  
entry (M-25)

with cable entry, fixing by 4 screws

**MKAXW IAP25**

with cable entry, fixing by 4 screws,  
bulkhead hole closed (without gasket)

**MKAXW AP25**

gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CK, CKS, CKSH, CQ4, CQ inserts

**CKR 65**

**CKR 65**

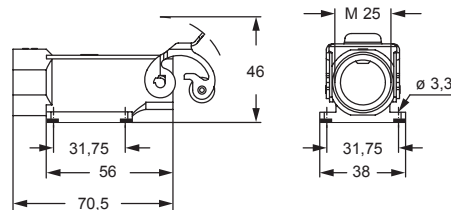
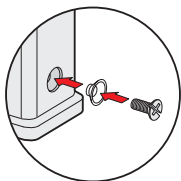
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CD 08 inserts

**CKR 65 D**

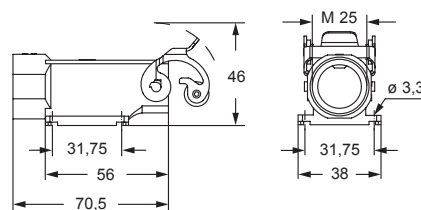
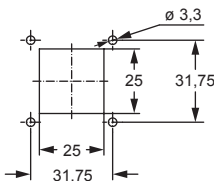
**CKR 65 D**

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

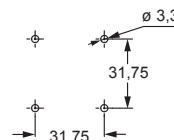
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)



# MKAXXW W-TYPE version for aggressive environments

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled surface mounting housings



**STAINLESS STEEL RIGID LEVER**  
**AVAILABLE MAY 2018**

## angled surface mounting housings



**STAINLESS STEEL RIGID LEVER**  
**AVAILABLE MAY 2018**

### description

with cable entry, fixing by 4 screws

part No.  
(entry M-25)

**MKAXXW IAP25**

with cable entry, fixing by 4 screws,  
bulkhead hole closed (without gasket)

part No.  
entry (M-25)

**MKAXXW AP25**

gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CK, CKS, CKSH, CQ4, CQ inserts

**CKR 65**

**CKR 65**

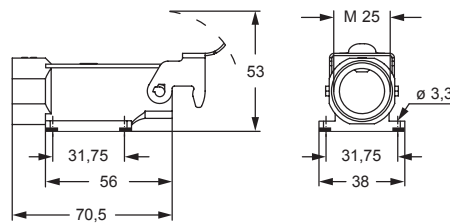
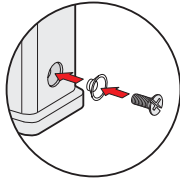
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CD 08 inserts

**CKR 65 D**

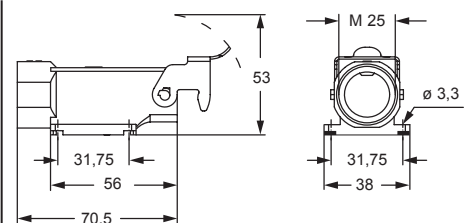
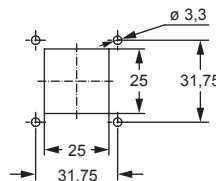
**CKR 65 D**

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

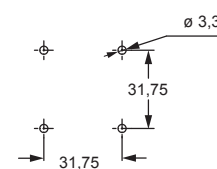
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# CKAXS EMC version for electromagnetic compatibility

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled bulkhead mounting housings




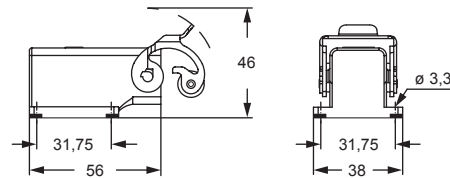
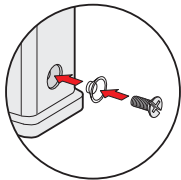
 **STAINLESS STEEL LEVER**

 **AVAILABLE MAY 2018**

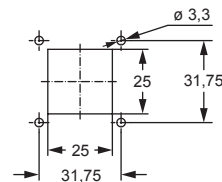
description	part No.
without cable entry, fixing by 4 screws	<b>CKAXS 03 IA4</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CK, CKS, CKSH, CQ4, CQ inserts	<b>CKR 65</b>
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CD 08 inserts	<b>CKR 65 D</b>

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

 **CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# CKAS - CKAXXS EMC version for electromagnetic compatibility

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

## angled bulkhead mounting housings



GALVANIZED STEEL RIGID LEVER

AVAILABLE MAY 2018

## angled bulkhead mounting housings



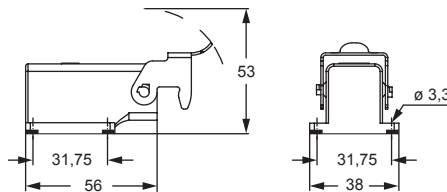
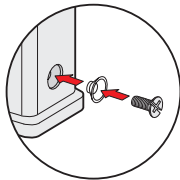
STAINLESS STEEL RIGID LEVER

AVAILABLE MAY 2018

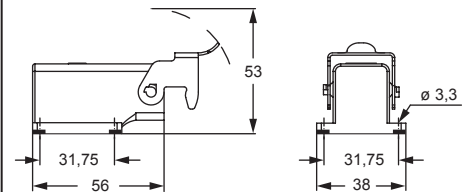
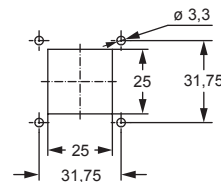
description	part No.	part No.
without cable entry, fixing by 4 screws	CKAS 03 IA4	
without cable entry, fixing by 4 screws		CKAXXS 03IA4
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CK, CKS, CKSH, CQ4, CQ inserts	CKR 65	CKR 65
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup> for CD 08 inserts	CKR 65 D	CKR 65 D

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

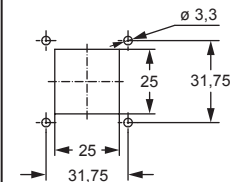
CQ 12 inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# MKAXS EMC version for electromagnetic compatibility

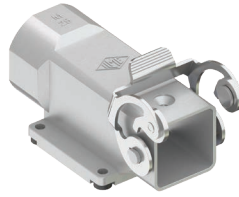
inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

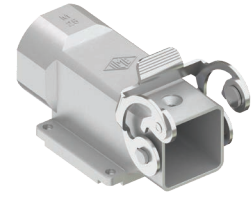
\*\*\* refer to NEWS 2017 pages

## angled surface mounting housings



**STAINLESS STEEL LEVER**  
**AVAILABLE MAY 2018**

## angled surface mounting housings



**STAINLESS STEEL LEVER**  
**AVAILABLE MAY 2018**

### description

with cable entry, fixing by 4 screws

part No.  
(entry M-25)

**MKAXS IAP25**

with cable entry, fixing by 4 screws,  
bulkhead hole closed (without gasket)

part No.  
entry (M-25)

**MKAXS AP25**

gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CK, CKS, CKSH, CQ4, CQ inserts

**CKR 65**

**CKR 65**

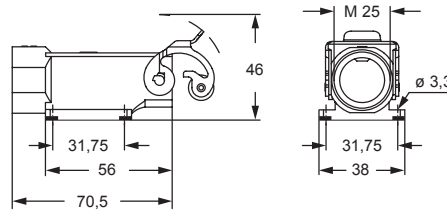
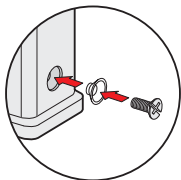
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CD 08 inserts

**CKR 65 D**

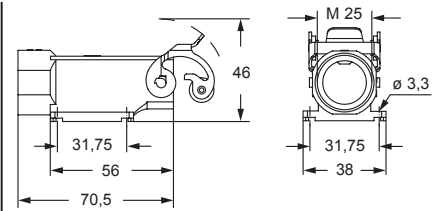
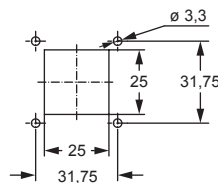
**CKR 65 D**

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

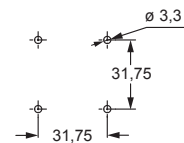
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



panel cut-out for enclosures



panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

# MKAS - MKAXXS EMC version for electromagnetic compatibility

inserts		page:
CK	3 poles + ⊕	48 *
CK	4 poles + ⊕	48 *
CKS	3 poles + ⊕	49 *
CKS	4 poles + ⊕	49 *
CKSH	3 poles + ⊕	7 ***
CKSH	4 poles + ⊕	7 ***
CD	8 poles	54 *
CQ4	3 poles + ⊕	23 **
CQ	5 poles + ⊕	166 *
CQ	7 poles + ⊕	8 ***
CQ	12 poles + ⊕	165 *
CQ	21 poles + ⊕	11 ***

\* refer to CN.16 pages

\*\* refer to NEWS 2016 pages

\*\*\* refer to NEWS 2017 pages

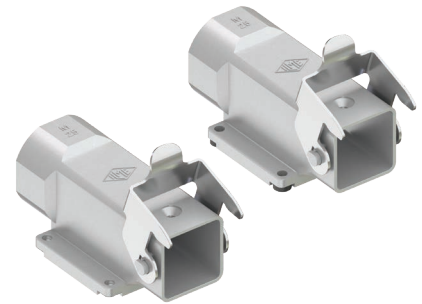
## angled surface mounting housings



GALVANIZED STEEL RIGID LEVER

AVAILABLE MAY 2018

## angled surface mounting housings



STAINLESS STEEL RIGID LEVER

AVAILABLE MAY 2018

### description

with cable entry, fixing by 4 screws

part No.  
(entry M-25)

**MKAS IAP25**

with cable entry, fixing by 4 screws,  
bulkhead hole closed (without gasket)

**MKAS AP25**

with cable entry, fixing by 4 screws

part No.  
(entry M-25)

**MKAXXS IAP25**

with cable entry, fixing by 4 screws,  
bulkhead hole closed (without gasket)

**MKAXXS AP25**

gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CK, CKS, CKSH, CQ4, CQ inserts

**CKR 65**

**CKR 65**

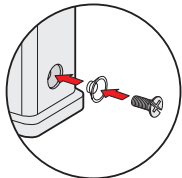
gasket and screw kit for IP66/IP67 and IP69 <sup>1)</sup>  
for CD 08 inserts

**CKR 65 D**

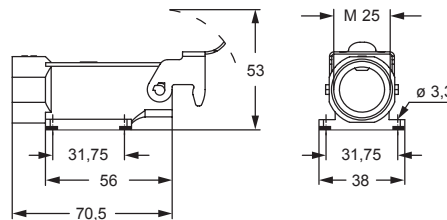
**CKR 65 D**

<sup>1)</sup> To obtain the IP66/IP67 and IP69 protection rating, a kit with insert fixing screw and gasket can be purchased separately. See figure below.

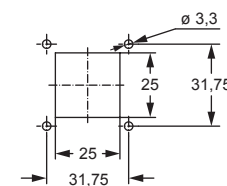
**CQ 12** inserts are already supplied with gasket and screw which ensure IP66/IP67 and IP69 protection rating.



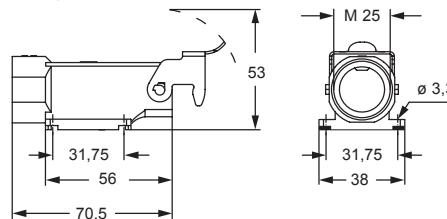
### MKAS IAP



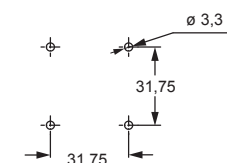
### panel cut-out for enclosures



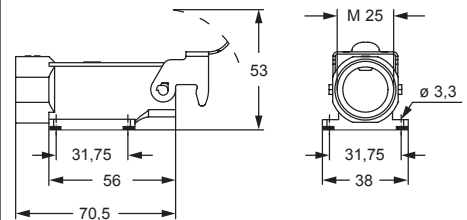
### MKAS AP



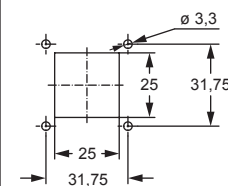
### panel cut-out for enclosures



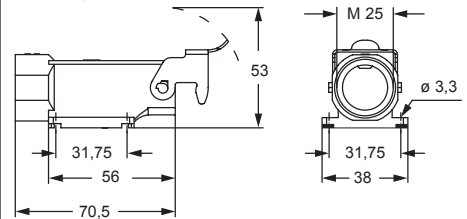
### MKAXXS IAP



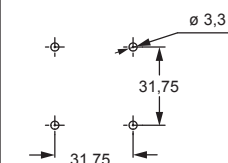
### panel cut-out for enclosures



### MKAXXS AP



### panel cut-out for enclosures



<sup>1)</sup> IP66/IP67/IP69 with CKR 65 (D)

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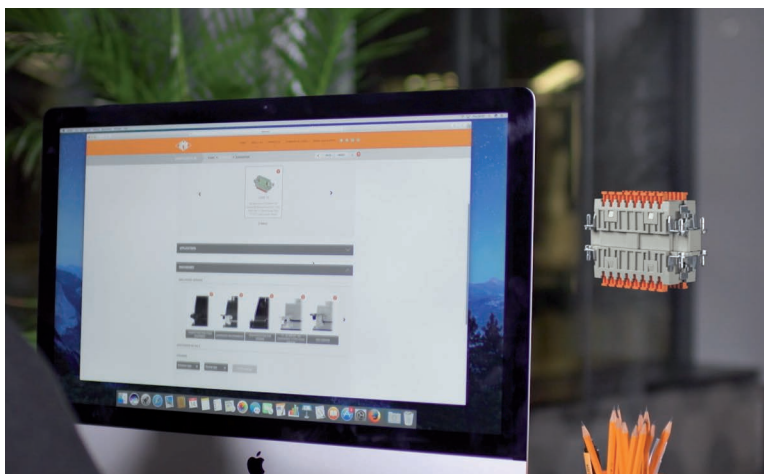
Watch our configurator movie

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Ilme Smart Configurator is a dynamic tool to digital access and match our database of over 7.000 product codes.

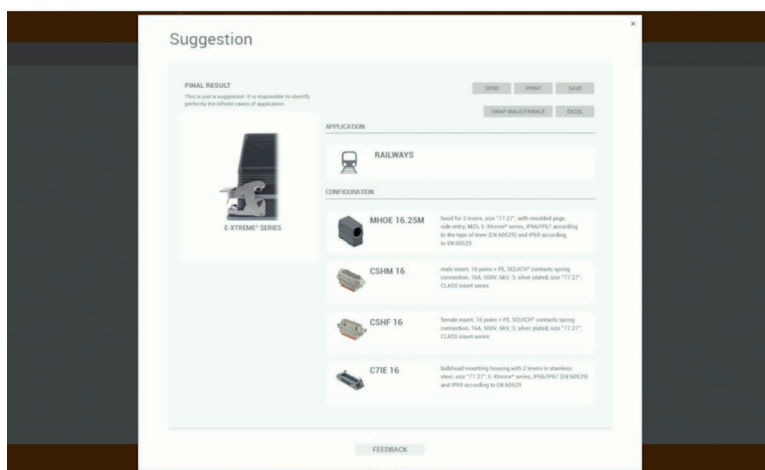


## 🔍 search



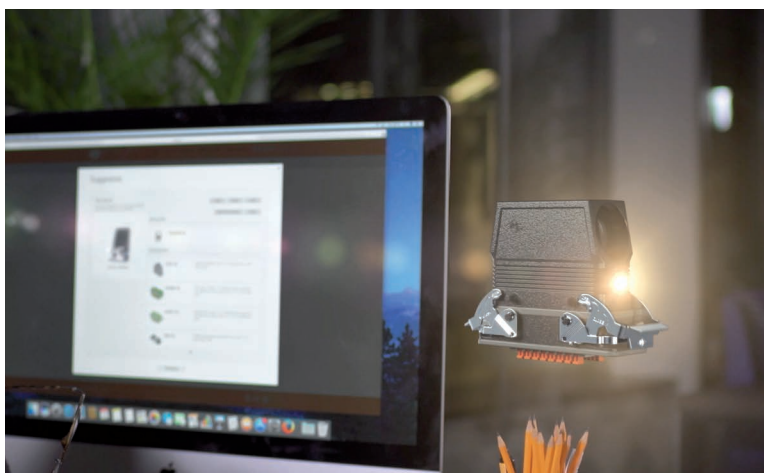
Over 50 million of online connector combinations.

## 👉 choose

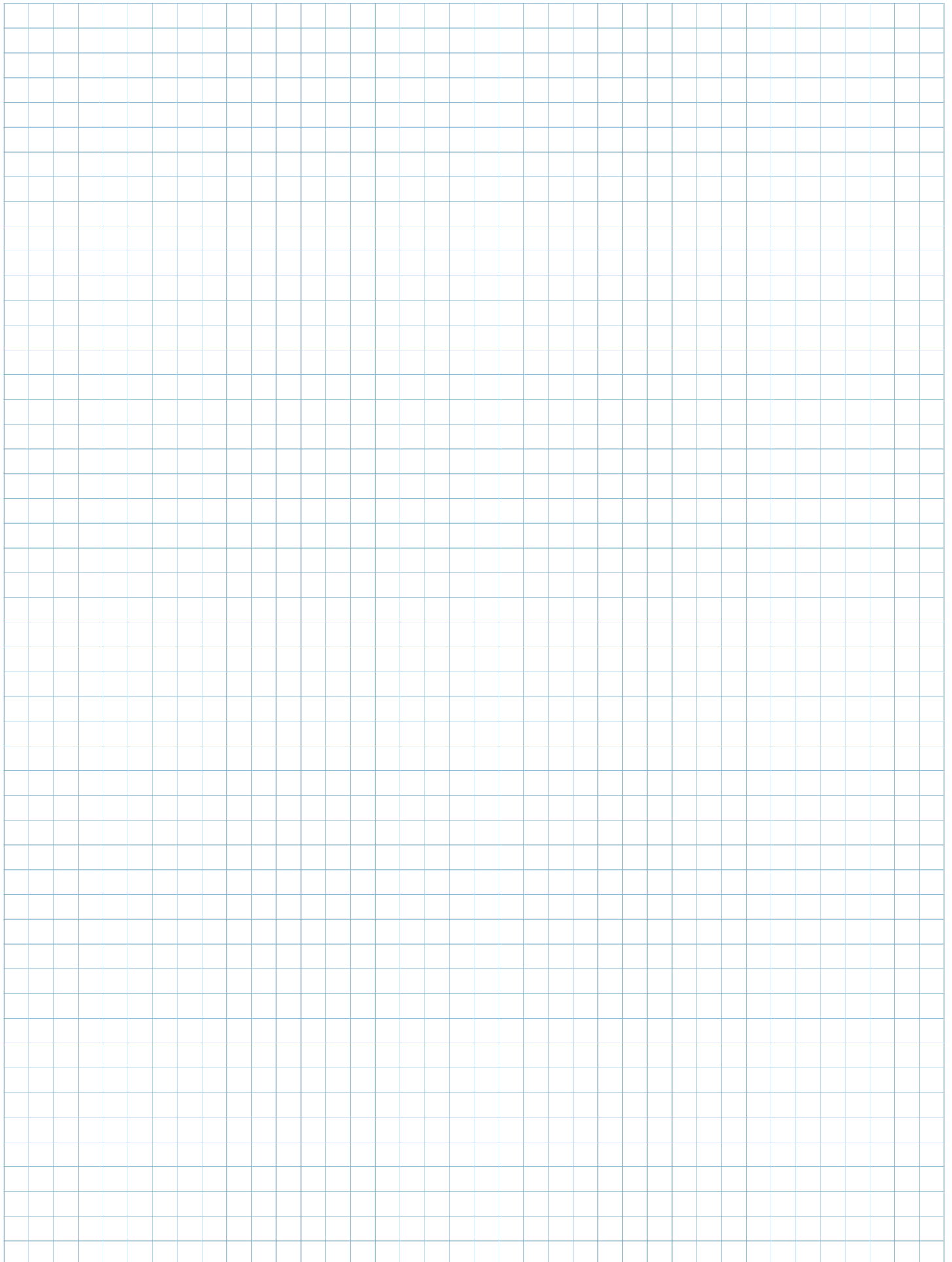


Easy selection of individual parts for key applications and recommendations for custom environmental conditions.

## 📄 download



Smart suggestion to get the most suitable configuration.







## Worldwide Sales Organization

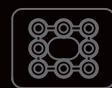
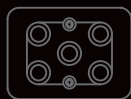
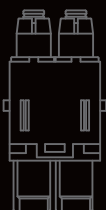
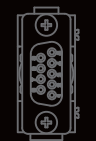
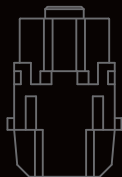
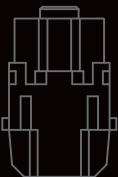
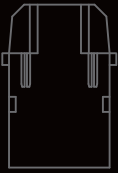
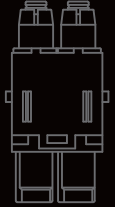
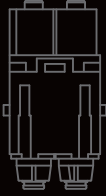
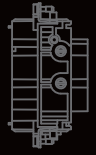
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