



Multipole connectors

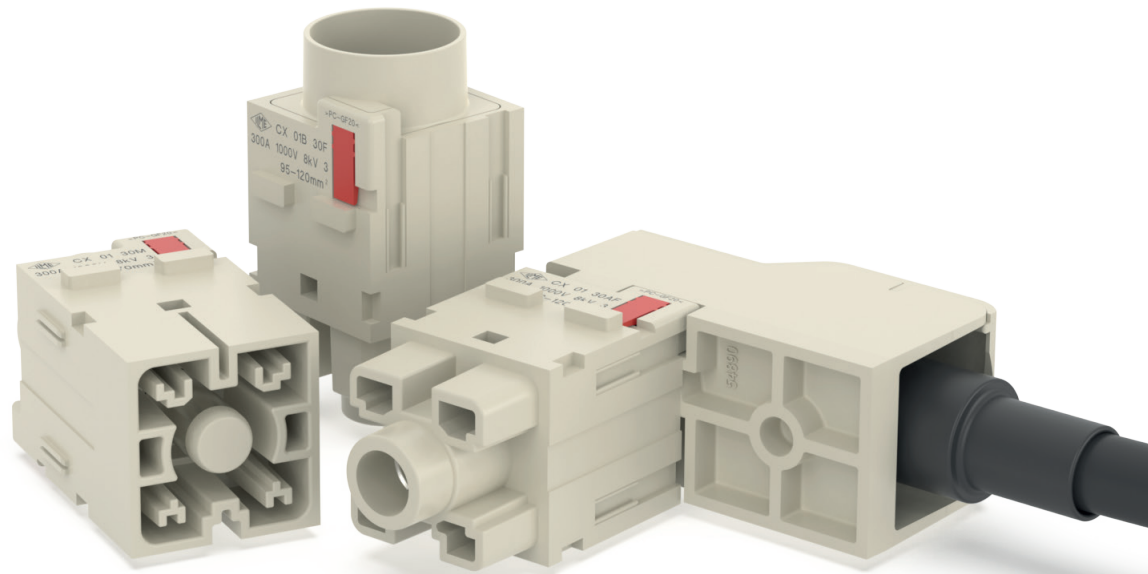


datasheet

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Newsbook

Extract 3/9



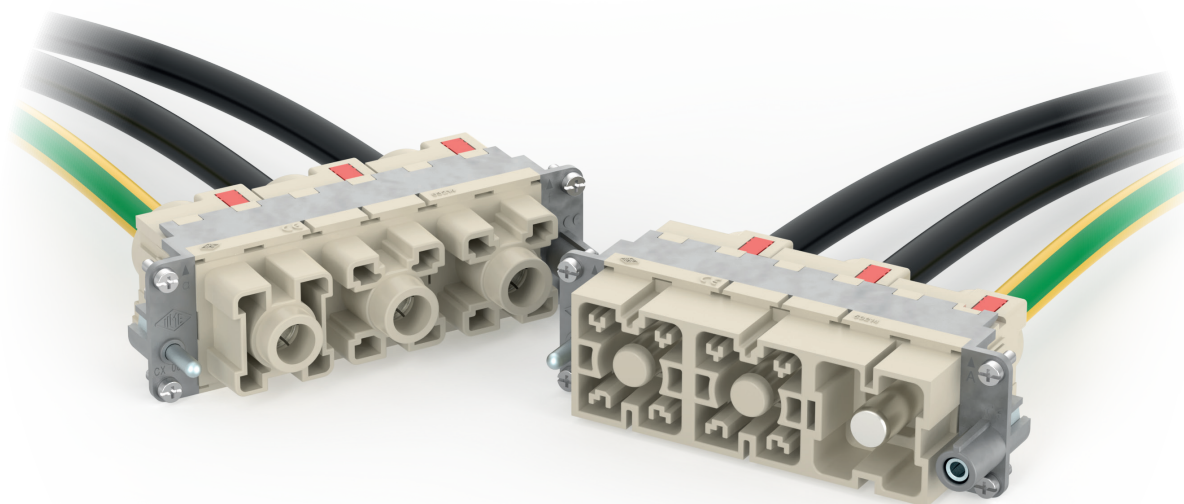
MIXO 300 A MODULES FOR HIGH-CURRENT APPLICATIONS

MIXO 300 A modules and crimp contacts

Line modules: CX 01 30 (16..70 mm²) and CX 01B 30 (95, 120 mm²)

PE modules: CX 01 30PE (16..70 mm²) and CX 01B 30PE (95, 120 mm²)

Crimp contacts: C30 series of sizes 16, 25, 35, 50, 70, 95 and 120



MIXO CX 01 30 and CX 01B 30, line modules

1 P: 300 A 1000 V 8 kV 3 – 1300 V_{DC}

MIXO CX 01 30PE and CX 01B 30PE, PE modules

1 P: 300 A



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TECHNICAL FEATURES



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technical clip

The requirements to increase **up to 300 A** the current loading of the available MIXO 200 A CX 01 Y connector modules, with the necessity to fit in the same size the required **larger wires** (95 mm² and 120 mm²), while at the same time keeping the possibility to use such module with the range of sizes of the MIXO 200 A modules, led to a complete overhaul of the solution.

This resulted in the necessity of splitting the wider wire range into two separate sizes of module, due to the need to differentiate the rear contact holding part to accommodate different wire sheathing diameters and to retain contacts with remarkably different barrel size, and required the **development of a new wider series of crimp contacts**, with the need for **more powerful crimp tools**.

Given the different size of the dedicated new **C30 series crimp contacts**, which also include **protected male contacts**, i.e., male contacts with insulating tip that provide **finger proof safety** to said male connector modules, two sizes of module are foreseen for the *line version* and two sizes for the *PE version*. The new MIXO 2-slot-sized connector modules for the **new C30 series crimp contacts** are available in two sizes:

- Q **01** (regular), for use with **new series C30 crimp contacts** of sizes 16, 25, 35, 50 and 70;
- Q **01B** (large), for use with **new series C30 crimp contacts** of larger sizes 95 and 120.

The two sizes thus cover different ranges of wiring, and each one is available in **line version** (insulated) and in **PE version** (where a reliable bonding contact between the power PE crimp contact and the metal MIXO frame is made possible), for a total of 4 different male modules and 4 different female modules, for use with the **new series C30 crimp contacts**.

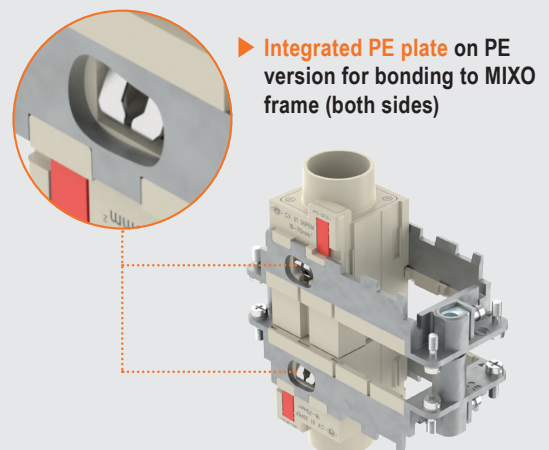
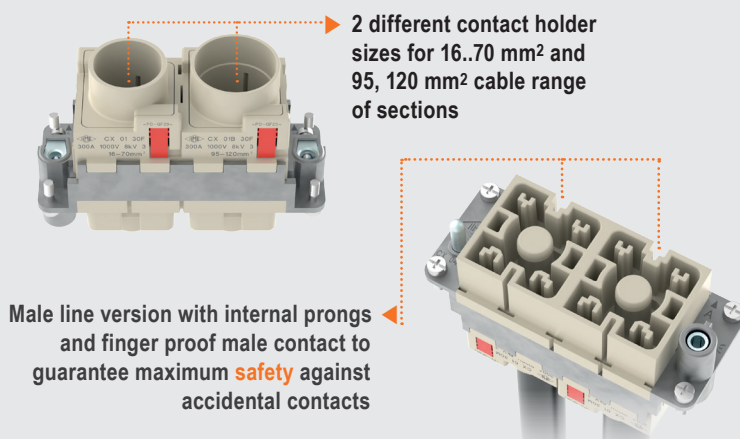
Together, they widen the range of cross-sectional areas that the previously available MIXO 200 A (line modules CX 01 Y and PE modules CX 01 YPE) enabled, to include also the new sizes 95 mm² and 120 mm², AWG 3/0 and 4/0, thus allowing an increase of current-carrying capacity of these modules up to 300 A in the same size.

- Q The design of the modules allows use up to and including **1300 V_{DC}** according to the latest edition of EN IEC 60664-1:2020.
- Q **Series C30 crimp contacts** are designed to use the more popular hexagonal DIN 48084 press crimping (in use for DIN 46235 cable end-sleeves). Two dedicated crimping tools (manual hydraulic and battery operated hydraulic) are provided and described on pages 54-55.

- Q Like the previously available MIXO 200 A ones, the new 300 A modules **are made in two parts**: a modular connector insulating body and a contact holder retained in the body by red-coloured locking tabs (proprietary technology); however, the new modules **are provided fully assembled**, as contact holding function is provided by elastic tongues in the contact holder that allow the insertion of the crimped connection without need for removing the contact holder.
- Q The contact holders of the “01” and the “01B” differ in that the shroud necessary for maintaining creepage distances, thus embracing the wire sheathing and the crimp barrel used by the crimped connection needs to be larger in the “01B” size (95 mm²..120 mm², AWG 3/0..4/0) than in the “01” size (16 mm²..70 mm², AWG 6..2/0) wire range. To avoid mistakes, the two module sizes are duly marked with the relevant size range of corresponding C30 crimp contacts.
- Q The **CX 01 30M** and **CX 01B 30M** male inserts' mating face is provided with suitable insulating prongs, so that, when used in combination with the finger proof crimp male contacts series C30 (C30MA 16 P through C30MA 120 P, see page 43), they result in finger proof male connectors. This feature is new compared to the previously available MIXO 200 A modules and crimp contacts series CY.
- NOTE – This additional safety feature is particularly useful to avoid electric shock whenever hazardous voltage may be still present for a certain period (e.g., due to discharge of capacitors) on the male side of the connection after disconnection.
- Q Current-temperature derating diagrams (current-carrying capacity curves) for **CX 01 30** module are like those of the equivalent CX 01 Y 200 A crimp versions (same wiring range). For **CX 01B 30** module, covering the larger wire sizes 95 mm² and 120 mm², AWG 3/0 and 4/0, new diagrams are under development to cover the extended range up to 300 A.
- Q Conductors stripping length: see **series C30 crimp contacts** pages.
- Q Silver plated contacts.
- Q Max diameter of wire sheathings:
 - ø 18,5 mm for size **01** modules (wire size 70 mm² / AWG 2/0)
 - ø 22,4 mm for size **01B** modules (wire size 120 mm² / AWG 4/0)

✓ CERTIFICATIONS

- cURus, CQC, DNV, BV, EAC pending.
- **CE** and **UK CA** markings.
- **RoHS**:
 - modular inserts: compliant;
 - series C30 crimp contacts: compliant with exemption 6(c).





CX 01 30F/30M – CX 01B 30F/30M 1 pole 300 A – 1000 V – 1300 V_{DC}

The modular inserts must be installed in suitable frames, which are then mounted in traditional enclosures* or in COB panel supports

page:

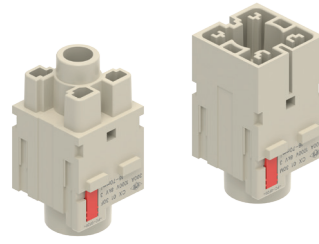
frames for modular units*

317

* enclosures: housings or high construction hoods

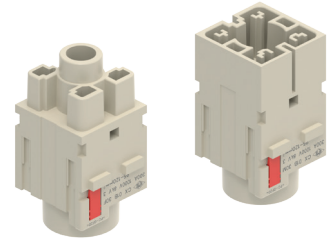
refer to CN.19 pages

modular units, crimp connections
16...70 mm²



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modular units, crimp connections
95, 120 mm²



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description

part No.

part No.

without contacts (to be ordered separately)
female insert for female contacts (16...70 mm²)
male insert for male contacts (16...70 mm²)

[CX 01 30F](#)
[CX 01 30M](#)

without contacts (to be ordered separately)
female insert for female contacts (95, 120 mm²)
male insert for female contacts (95, 120 mm²)

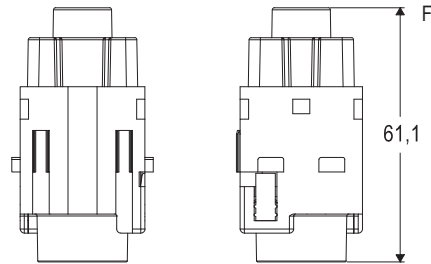
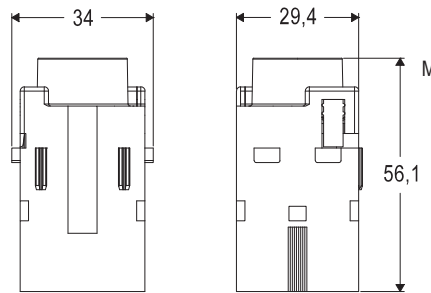
[CX 01B 30F](#)
[CX 01B 30M](#)

- characteristics according to EN 61984:
300 A 1000 V 8 kV 3 – 1300 V_{DC}
300 A 920/1600 V 8 kV 2

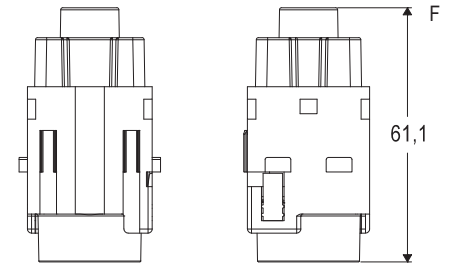
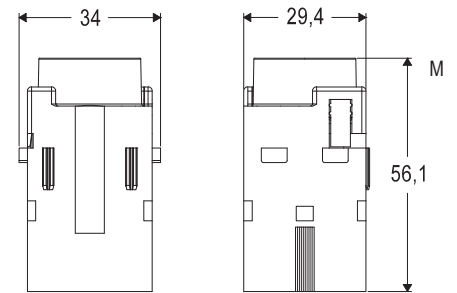
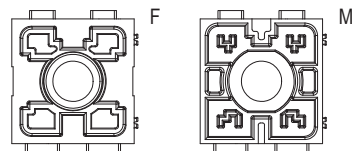
- cURus (ECBT2/8 and PVVA2/8) pending
- CQC, DNV, BV, EAC pending

- rated voltage according to UL/CSA: 600 V
- 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: ≥ 500 cycles
- contact resistance: $\leq 0,2 \text{ m}\Omega$
- Max diameter of wire sheathings:
- $\varnothing 18,5 \text{ mm}$ for size 01 modules (wire size 70 mm² / AWG 2/0)
- $\varnothing 22,4 \text{ mm}$ for size 01B modules (wire size 120 mm² / AWG 4/0)

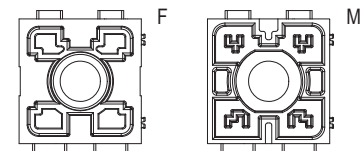
- for max. current load see the connector inserts derating diagram under construction; for more information see page 28 of CN.19 catalogue.



contacts side (front view)
side with reference arrow ▲



contacts side (front view)
side with reference arrow ▲



300 A silver plated crimp contacts



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description

part No.

300 A female crimp contacts

16 mm ²	AWG 6
25 mm ²	AWG 4
35 mm ²	AWG 2
50 mm ²	AWG 1
70 mm ²	AWG 2/0
95 mm ²	AWG 3/0
120 mm ²	AWG 4/0

- [C30FA 16](#)
- [C30FA 25](#)
- [C30FA 35](#)
- [C30FA 50](#)
- [C30FA 70](#)
- [C30FA 95](#)
- [C30FA 120](#)

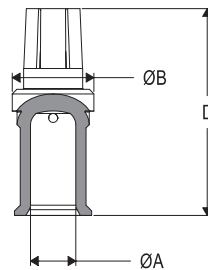
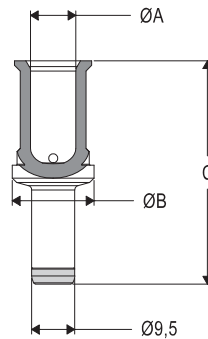
silver plated

300 A male finger proof crimp contacts

16 mm ²	AWG 6
25 mm ²	AWG 4
35 mm ²	AWG 2
50 mm ²	AWG 1
70 mm ²	AWG 2/0
95 mm ²	AWG 3/0
120 mm ²	AWG 4/0

- [C30MA 16 P](#)
- [C30MA 25 P](#)
- [C30MA 35 P](#)
- [C30MA 50 P](#)
- [C30MA 70 P](#)
- [C30MA 95 P](#)
- [C30MA 120 P](#)

- it is recommended to crimp the contacts with crimping tools homologated by ILME (please see the crimping tool section for 300 A contacts, C30FA, C30MA series at pages 54-55).



C30FA and C30MA..P contacts

conductor section (mm ²)	conductor slot ø A (mm)	ø B (mm)	C (mm)	D (mm)	conductor stripping length (mm)
16	5,5	18	42,7	39,1	19
25	7	18	42,7	39,1	19
35	8,2	18	43,7	40,1	20
50	10	18	49,2	45,6	22,5
70	11,5	18	49,2	45,6	22,5
95	13,5	21	49,2	45,6	22,5
120	15,5	21	49,2	45,6	22,5



CX 01 30PEF/30PEM – CX 01B 30PEF/30PEM 1 pole 300 A

The modular inserts must be installed in suitable frames, which are then mounted in traditional enclosures* or in COB panel supports

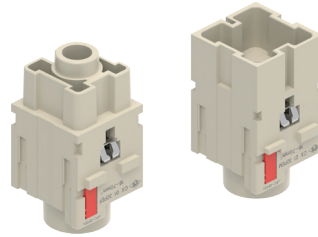
page: 317

frames for modular units*

* enclosures: housings or high construction hoods

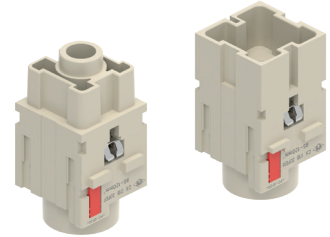
refer to CN.19 pages

modular units, crimp connections
PE module for earth termination,
16...70 mm²



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modular units, crimp connections
PE module for earth termination,
95, 120 mm²



FROM JUNE 2023

description

part No.

part No.

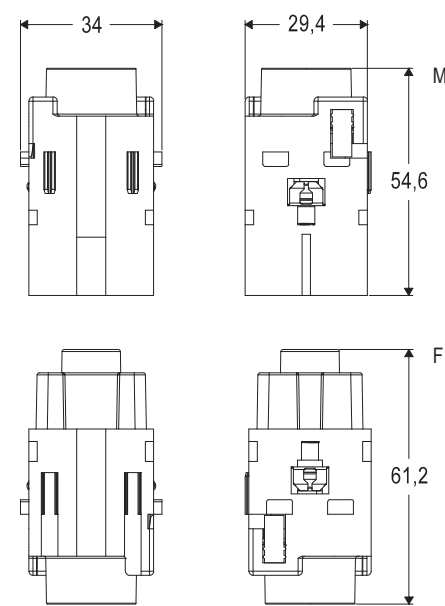
without contacts (to be ordered separately)
PE female insert for female contacts (16...70 mm²)
PE male insert for male contacts (16...70 mm²)

[CX 01 30PEF](#)
[CX 01 30PEM](#)

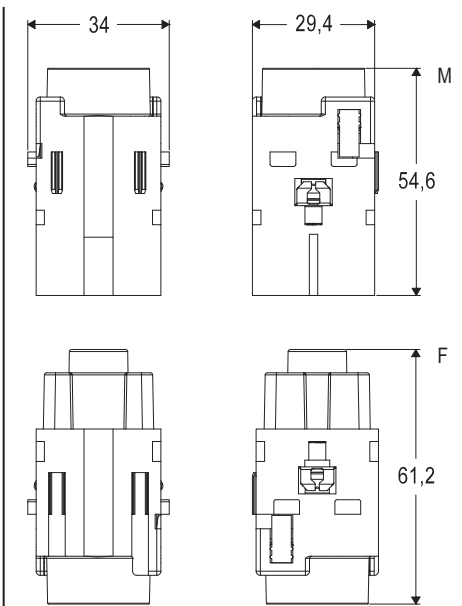
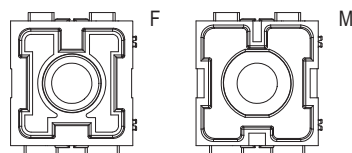
without contacts (to be ordered separately)
PE female insert for female contacts (95, 120 mm²)
PE male insert for male contacts (95, 120 mm²)

[CX 01B 30PEF](#)
[CX 01B 30PEM](#)

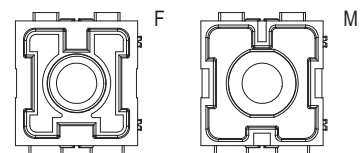
- cURus (ECBT2/8 and PVVA2/8) pending
- CQC, DNV, BV, EAC pending
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 0,2 mΩ
- Max diameter of wire sheathings:
 - ø 18,5 mm for size 01 modules (wire size 70 mm² / AWG 2/0)
 - ø 22,4 mm for size 01B modules (wire size 120 mm² / AWG 4/0)



contacts side (front view)
side with reference arrow ▲



contacts side (front view)
side with reference arrow ▲





300 A silver plated crimp contacts



FROM JUNE 2023

description	part No.
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300 A female crimp contacts

16 mm ²	AWG 6
25 mm ²	AWG 4
35 mm ²	AWG 2
50 mm ²	AWG 1
70 mm ²	AWG 2/0
95 mm ²	AWG 3/0
120 mm ²	AWG 4/0

- [C30FA 16](#)
- [C30FA 25](#)
- [C30FA 35](#)
- [C30FA 50](#)
- [C30FA 70](#)
- [C30FA 95](#)
- [C30FA 120](#)

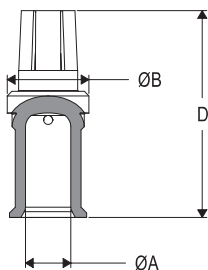
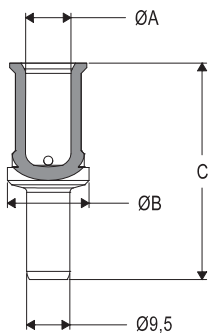
silver plated

300 A male crimp contacts

16 mm ²	AWG 6
25 mm ²	AWG 4
35 mm ²	AWG 2
50 mm ²	AWG 1
70 mm ²	AWG 2/0
95 mm ²	AWG 3/0
120 mm ²	AWG 4/0

- [C30MA 16](#)
- [C30MA 25](#)
- [C30MA 35](#)
- [C30MA 50](#)
- [C30MA 70](#)
- [C30MA 95](#)
- [C30MA 120](#)

- it is recommended to crimp the contacts with crimping tools homologated by ILME (please see the crimping tool section for 300 A contacts, C30FA, C30MA series at pages 54-55).



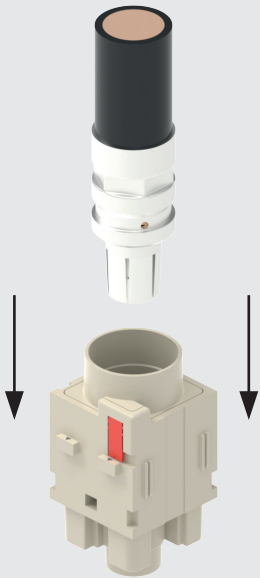
C30FA and C30MA contacts

conductor section (mm ²)	conductor slot ø A (mm)	ø B (mm)	C (mm)	D (mm)	conductor stripping length (mm)
16	5,5	18	41,2	39,1	19
25	7	18	41,2	39,1	19
35	8,2	18	42,2	40,1	20
50	10	18	47,7	45,6	22,5
70	11,5	18	47,7	45,6	22,5
95	13,5	21	47,7	45,6	22,5
120	15,5	21	47,7	45,6	22,5

ASSEMBLY INSTRUCTIONS

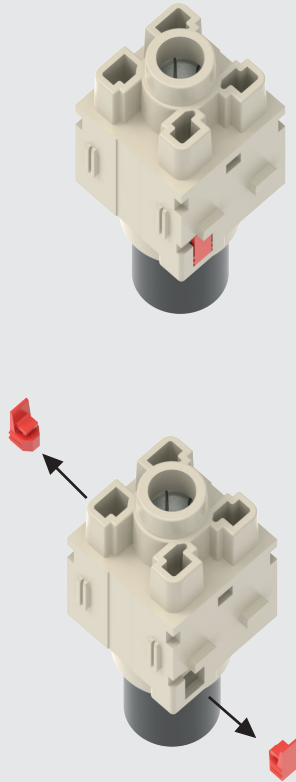
CX 01/01B 30 – MIXO 300 A MODULE

CONTACT INSERTION

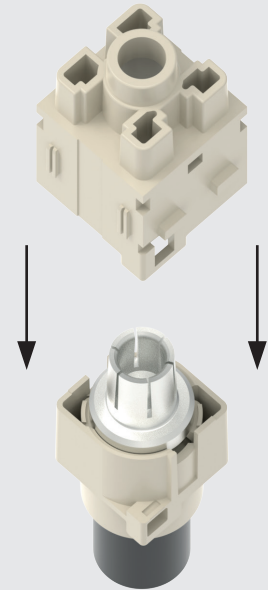


CONTACT REMOVAL

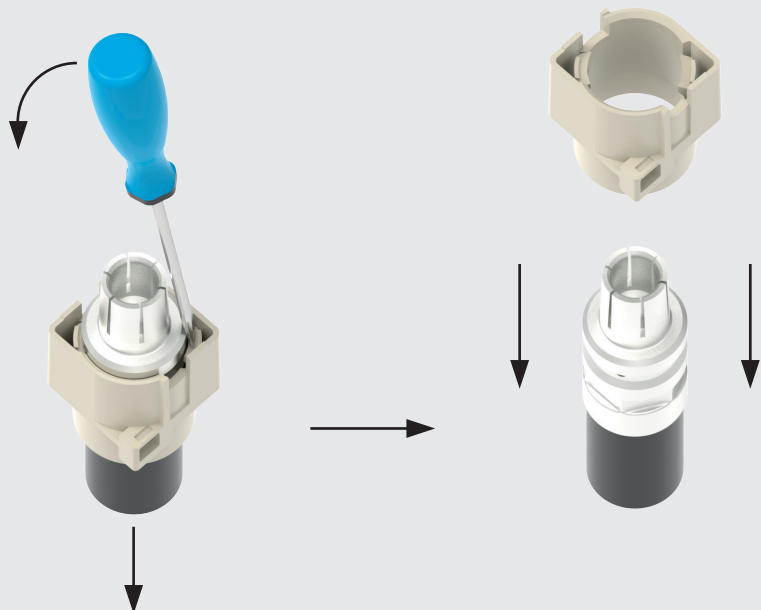
1



2



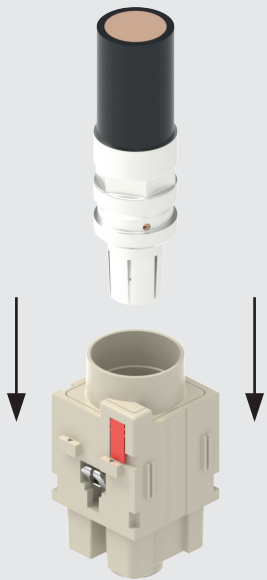
3



ASSEMBLY INSTRUCTIONS

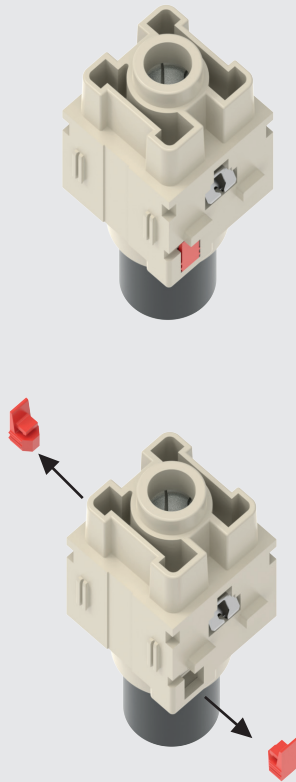
CX 01/01B 30PE – MIXO 300 A PE MODULE

CONTACT INSERTION

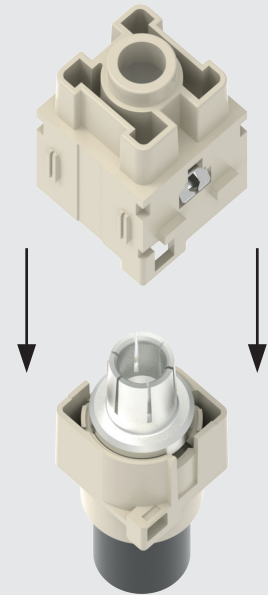


CONTACT REMOVAL

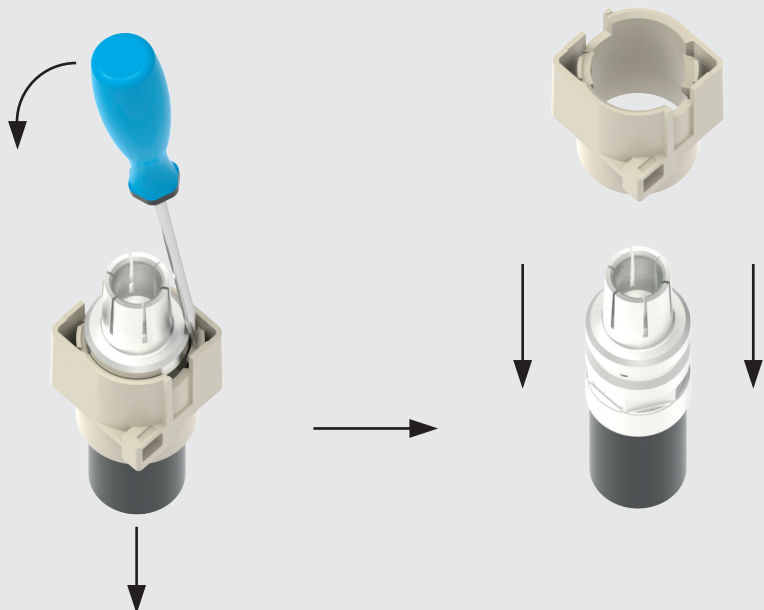
1



2



3

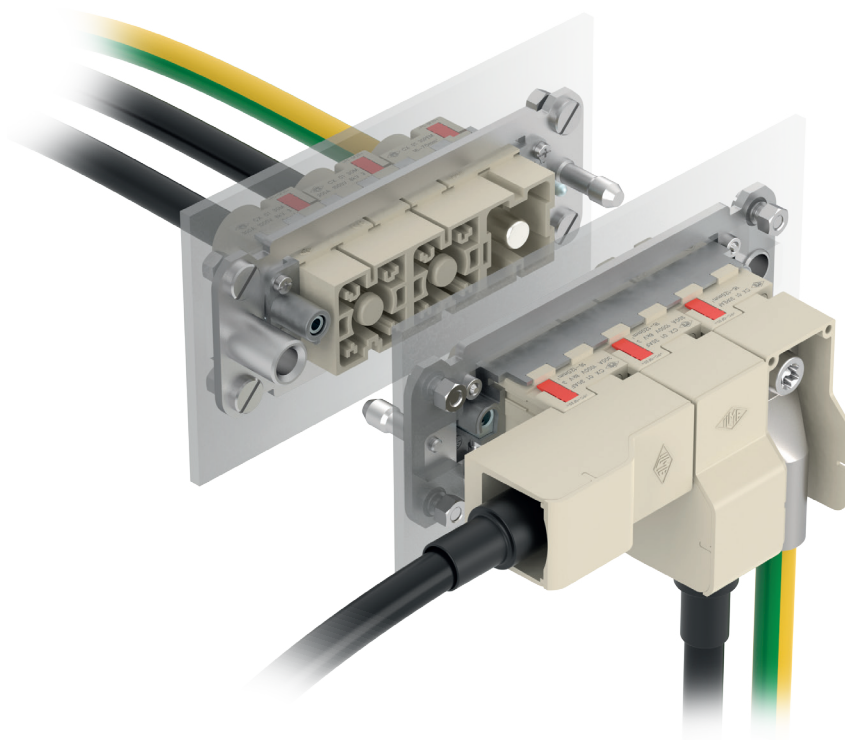


MIXO 300 A modules

For 90°-angled screw terminal connection

Line modules: CX 01 30A (16..120 mm²)

PE modules: CX 01 30PEA (16..120 mm²)



MIXO CX 01 30 A line modules

1 P: 300 A 1000 V 8 kV 3 – 1300 V_{DC}

MIXO CX 01 30PEA, PE modules

1 P: 300 A



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TECHNICAL FEATURES

High-power modules in the 70 A – 300 A current range relate to conductors with large wire-cross-section, even up to 120 mm². Such wires are often difficult to handle, having reduced bending radius and requiring an adequate installation room, often not available.

The new **MIXO CX 01 30A** line module and **CX 01 30PEA** PE module are the solution introduced by ILME to widen the potential of the MIXO high-current series, modules with the same compatible electrical rating and mating interface of the 300 A crimp version described in the previous pages but designed to **minimize its space installation requirements**.

Q The male and female contacts for the angled 300 A module allow the **connection of DIN 46235** pre-insulated crimp cable lugs (using M8 TORX® T45 screw), available on the market in the dimension for wire cross-sectional areas of 10, 16, 25, 35, 50, 70, 95 and 120 mm².

Q To keep the proper electrical insulation, ILME designed a **special insulating cover plate**, avoiding accidental contact between cable lugs of adjacent modules and saving the **nominal voltage rating of 1000 V and 1300 V_{DC}** planned for the 300 A modules.

This cover plate has been furtherly improved compared with the previously available 200 A 90°-angled module CX 01 YAF/ M, in that it now includes a further snap-in closing cap, that prevent touch with live parts inside a cabinet previously demanded to the assembler of the distribution panel.

Q The **300 A angled module** can be used inside the ILME bulkhead mounting housings as a natural extension of a busbar connection or for powering control cabinets, HVAC systems and batteries for energy storage backup applications.

Q Line male modules **CX 01 30AM** and **CX 01B 30AM** come by default **with finger proof contact** (PE modules do not require any finger proof safety).

Q Current-temperature derating diagrams (current-carrying capacity curves) for size **CX 01 30A** line module and **CX 01 30PEA** PE module are like those of the equivalent CX 01 YA and CX 01 YPEA 200 A versions (same wiring range). For size **CX 01B 30A** and **CX 01B PEA** modules, covering the larger wire sizes 95 mm² and 120 mm² (AWG 3/0 and 4/0), new diagrams are under development to cover the extended range up to 300 A.

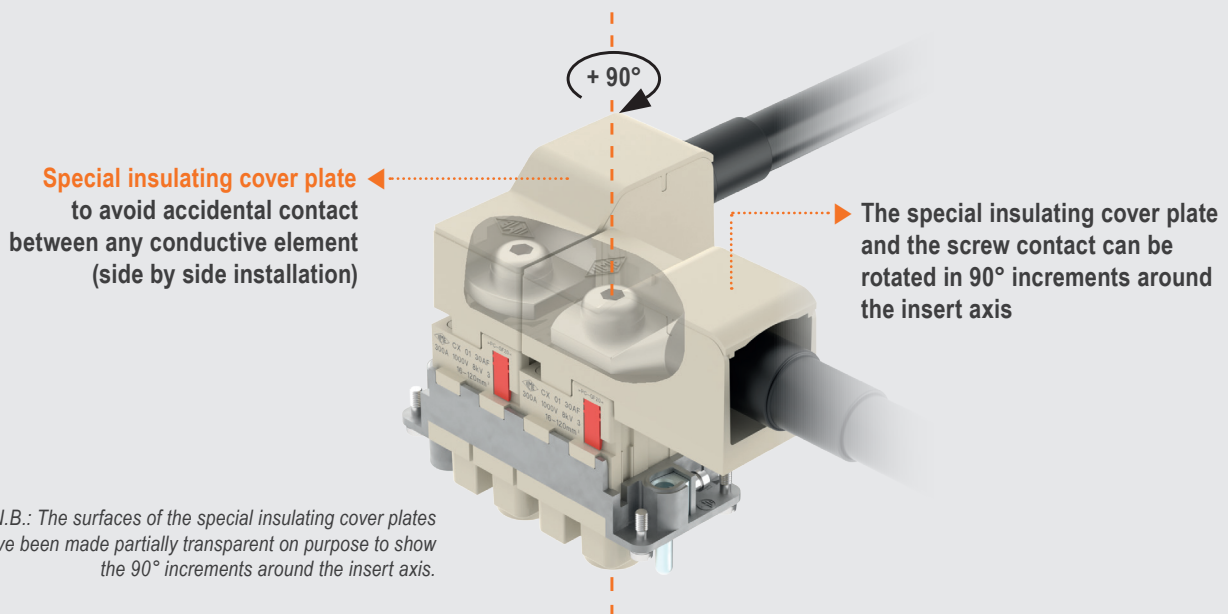
Q Conductors stripping length: 9..11 mm.

Q Silver plated contacts.

Q Tightening torque for TORX® T45 socket bolt for fixing the cable lug: 10 Nm.

CERTIFICATIONS

- cURus, CQC, DNV, BV, EAC pending.
- **CE** and **UK CA** markings.
- **RoHS**: compliant with exemption **6(c)**.





CX 01 30AF/30AM 1 pole 300 A – 1000 V – 1300 V_{DC}

The modular inserts must be installed in suitable frames, which are then mounted in traditional enclosures* or in COB panel supports

page: 317

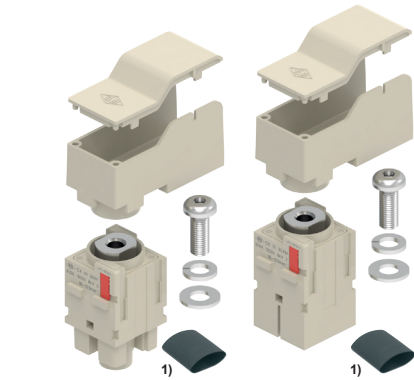
frames for modular units*

* enclosures: bulkhead mounting housings only

1) supplied with heat-shrinking insulating tubes, to be used with tubular cable lug (not supplied)

refer to CN.19 pages

modular units, screw terminal connection



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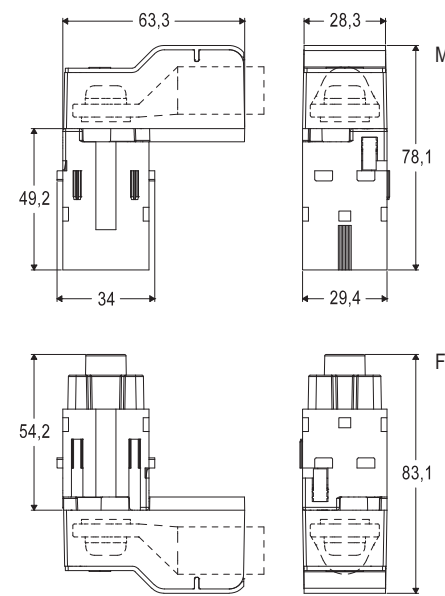
description

part No.

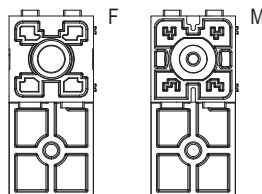
screw terminal connection - 90° angled
female insert with female contacts
male insert with male contacts

[CX 01 30AF](#)
[CX 01 30AM](#)

- characteristics according to EN 61984:
300 A 1000 V 8 kV 3 – 1300 V_{DC}
- cURus (ECBT2/8 and PVVA2/8) pending
- CQC, DNV, BV, EAC pending
- rated voltage according to UL/CSA: 600 V
- 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: ≥ 500 cycles
- contact resistance: $\leq 3 \text{ m}\Omega$
- for max. current load see the connector inserts derating diagram under construction; for more information see page 28 of CN.19 catalogue.



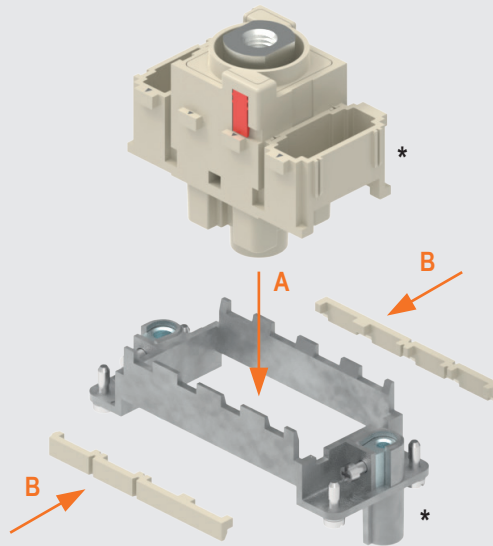
contacts side (front view)
side with reference arrow ▲



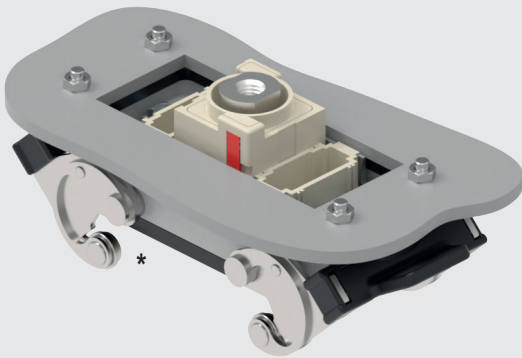
ASSEMBLY INSTRUCTIONS

CX 01 30A – MIXO 300 A 90° ANGLED MODULE

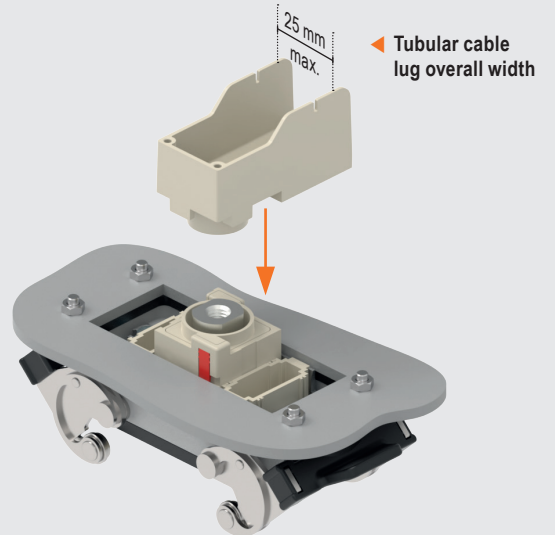
1



2 For bulkhead mounting housing only

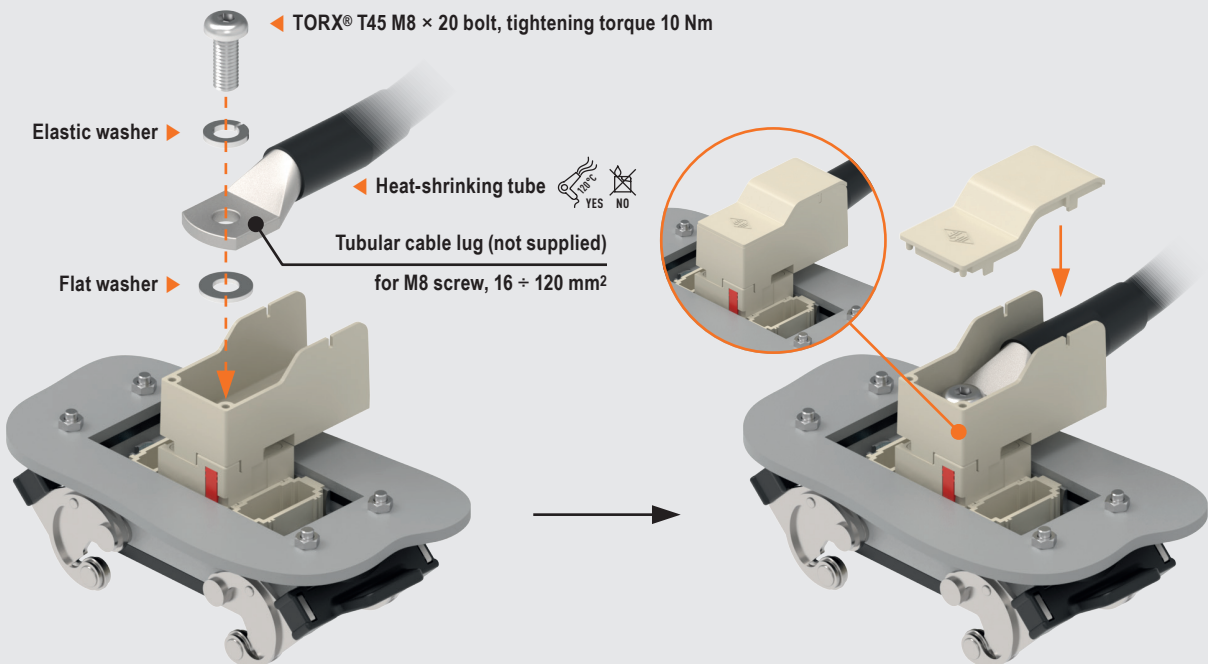


3



* Frame size, additional MIXO modules and housing levers may vary from those depicted

4





CX 01 30PEAF/30PEAM 1 pole 300 A

The modular inserts must be installed in suitable frames, which are then mounted in traditional enclosures* or in COB panel supports

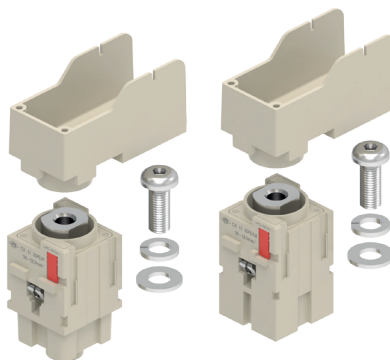
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frames for modular units*

* enclosures: bulkhead mounting housings only

refer to CN.19 pages

modular units, screw PE terminal connection



FROM JUNE 2023

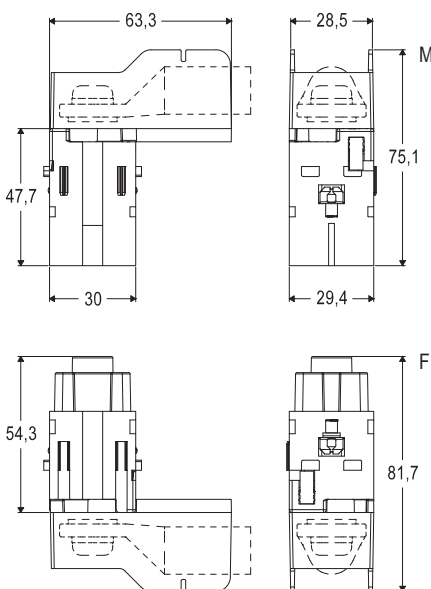
description

part No.

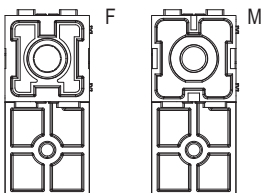
screw terminal connection - 90° angled
 PE female insert with female contacts
 PE male insert with male contacts

[CX 01 30PEAF](#)
[CX 01 30PEAM](#)

- cURus (ECBT2/8 and PVVA2/8) pending
- CQC, DNV, BV, EAC pending
- ambient temperature limit: -40 °C ... +125 °C
- made of self-extinguishing thermoplastic resin UL 94V-0
- mechanical life: ≥ 500 cycles
- contact resistance: ≤ 3 mΩ

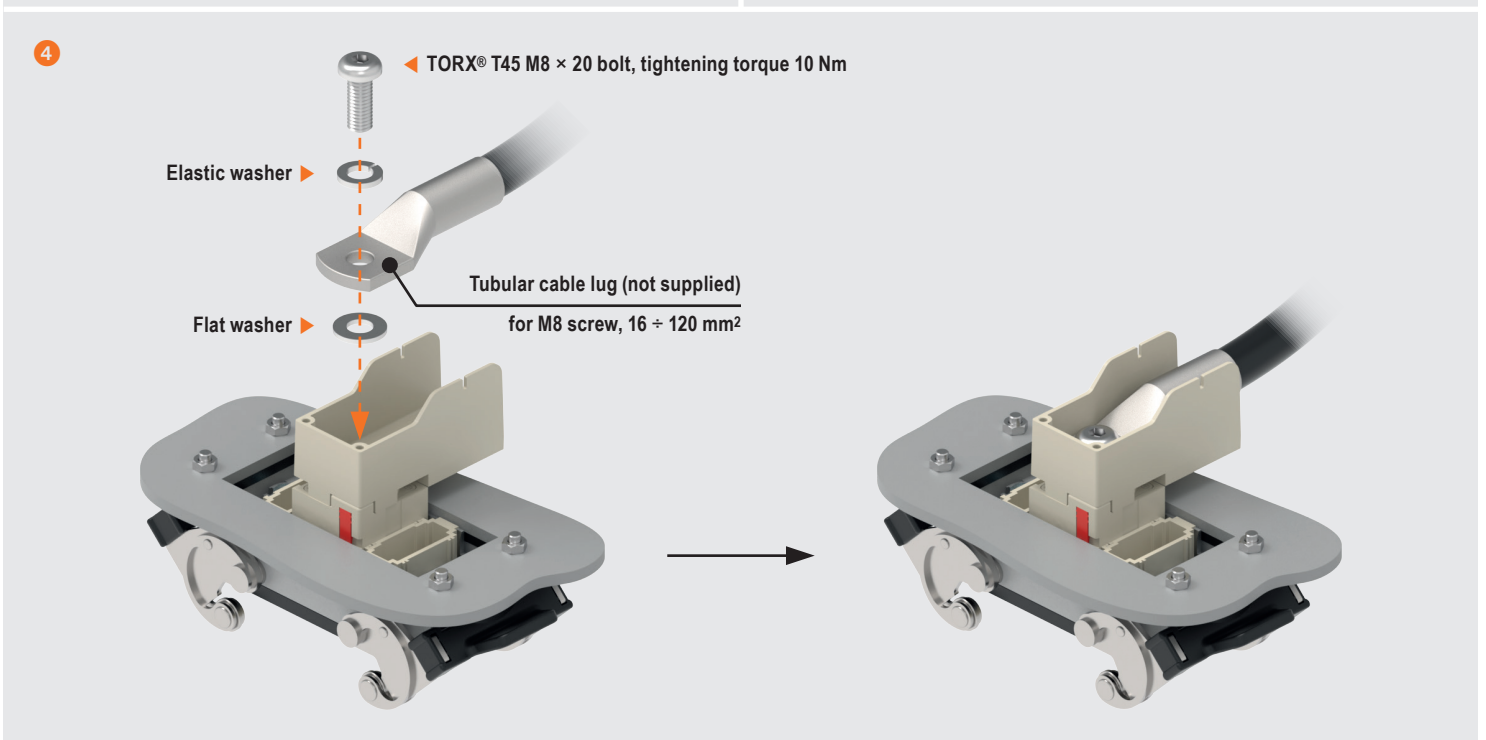
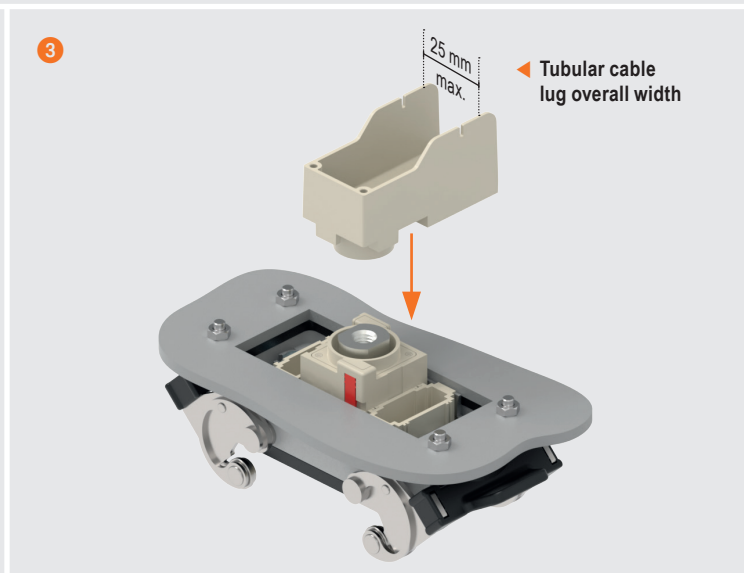
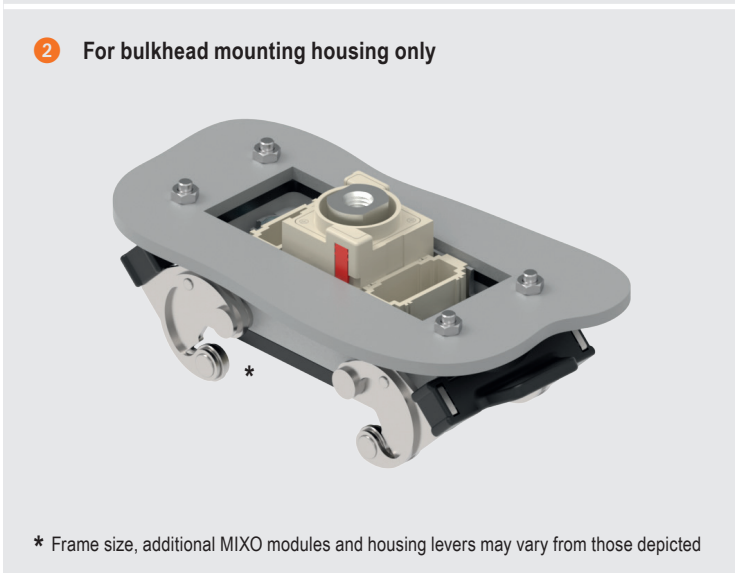
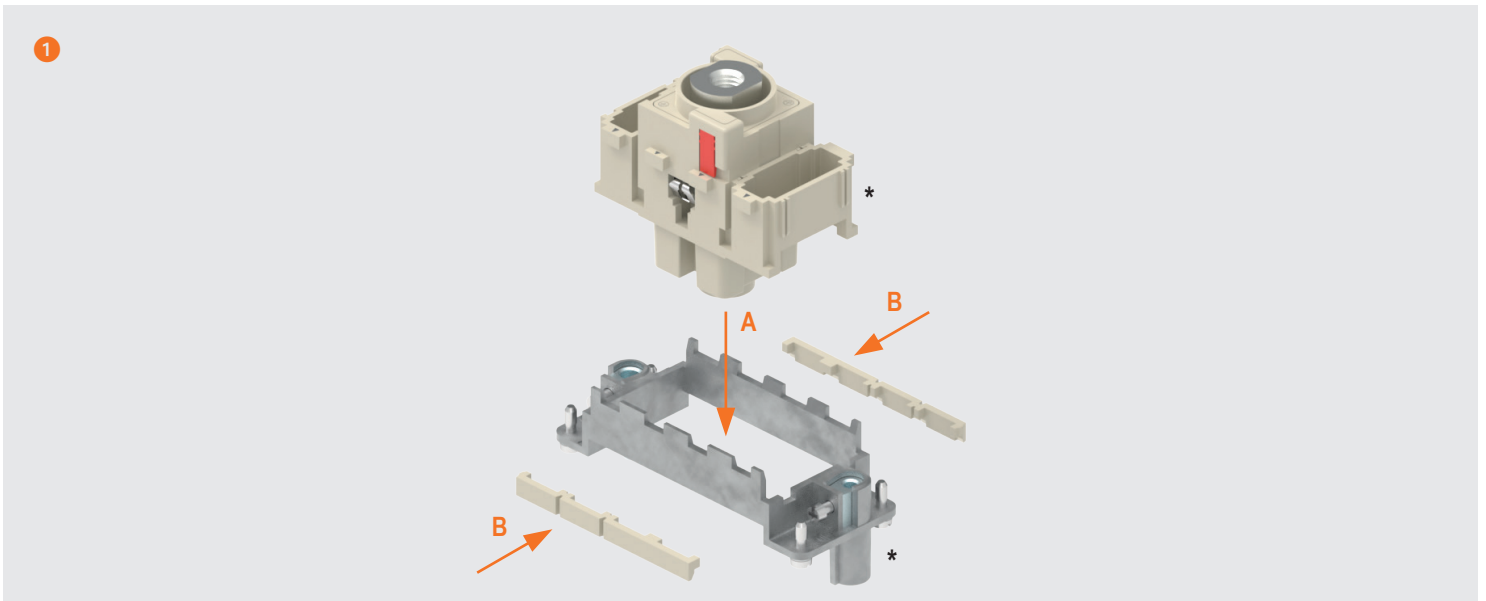


contacts side (front view)
 side with reference arrow ▲



ASSEMBLY INSTRUCTIONS

CX 01 30PEA – MIXO 300 A 90° ANGLED PE MODULE



Tools and accessories for crimp contacts

For contacts of inserts series
(as applicable)

CX 01 30F/M
CX 01B 30F/M
CX 01 30PEF/M
CX 01B 30PEF/M

page:

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42
44
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crimping tool
manual



crimping dies



description

part No.

part No.

manual hydraulic crimping tool for **300 A**
C30 series contacts
basic tool mod. CEMBRE HT 131-C
excluding crimping dies


[C13PZ C](#)

crimping dies according to DIN 46235
for C30 contacts with 16 mm² (AWG 6) wire cross-section
for C30 contacts with 25 mm² (AWG 4) wire cross-section
for C30 contacts with 35 mm² (AWG 2) wire cross-section
for C30 contacts with 50 mm² (AWG 1) wire cross-section
for C30 contacts with 70 mm² (AWG 2/0) wire cross-section
for C30 contacts with 95 mm² (AWG 3/0) wire cross-section
for C30 contacts with 120 mm² (AWG 4/0) wire cross-section

[C13D 16 C](#)
[C13D 25 C](#)
[C13D 35 C](#)
[C13D 50 C](#)
[C13D 70 C](#)
[C13D 95 C](#)
[C13D 120 C](#)

Tool technical information

- Crimping force 135 kN
- Rated operating pressure: 700 bar
- Dimensions: 473 x 144 mm
- Weight: 5,5 kg
- Operating temperature: -15 to +50 °C

 The tool is supplied in a case without the crimping dies.



part No.	Cembre part No.	pressing width mm	punching identification	contacts	wire cross-section	
					mm ²	AWG
C13D 16 C	MK8-C	10	MK 8	C30FA 16, C30MA 16, C30MA 16 P	16	6
C13D 25 C	MK10-C	10	MK 10	C30FA 25, C30MA 25, C30MA 25 P	25	4
C13D 35 C	MK12-C	10	MK 12	C30FA 35, C30MA 35, C30MA 35 P	35	2
C13D 50 C	MK14-C	13	MK 14	C30FA 50, C30MA 50, C30MA 50 P	50	1
C13D 70 C	MK16-C	13	MK 16	C30FA 70, C30MA 70, C30MA 70 P	70	2/0
C13D 95 C	MK18-C	14	MK 18	C30FA 95, C30MA 95, C30MA 95 P	95	3/0
C13D 120 C	MK20-C	14	MK 20	C30FA 120, C30MA 120, C30MA 120 P	120	4/0

Tools and accessories for crimp contacts

For contacts of inserts series
(as applicable)

page:

CX 01 30F/M	42
CX 01B 30F/M	42
CX 01 30PEF/M	44
CX 01B 30PEF/M	44

crimping tool
battery operated hydraulic



crimping dies



description

part No.

part No.

battery operated hydraulic crimping tool
for **300 A** C30 series contacts
basic tool mod. CEMBRE B1350-C battery charger
- for EU
- for UK
- for AUS
- for US/CAN
excluding crimping dies

C13PZ EL EU
C13PZ EL UK
C13PZ EL AU
C13PZ EL US

crimping dies according to DIN 46235
for C30 contacts with 16 mm² (AWG 6) wire cross-section
for C30 contacts with 25 mm² (AWG 4) wire cross-section
for C30 contacts with 35 mm² (AWG 2) wire cross-section
for C30 contacts with 50 mm² (AWG 1) wire cross-section
for C30 contacts with 70 mm² (AWG 2/0) wire cross-section
for C30 contacts with 95 mm² (AWG 3/0) wire cross-section
for C30 contacts with 120 mm² (AWG 4/0) wire cross-section

[C13D 16 C](#)
[C13D 25 C](#)
[C13D 35 C](#)
[C13D 50 C](#)
[C13D 70 C](#)
[C13D 95 C](#)
[C13D 120 C](#)

Tool technical information

- Crimping force 132 kN
- Minimum crimping force 152,2 kN
- Minimum operating pressure 692 bar
- Dimensions: 338 × 344 × 83 mm
- Weight (with battery): 6,5 kg
- Operating temperature: -15 to +50 °C

Rechargeable battery

- Type: CB1852L (Li-Ion) 18V, 5 Ah, 93.6 Wh
- Weight: 0,66 kg

Battery charger

- Input: 220-240 V / 50-60 Hz (EU, UK, AU)
- Input: 115 V / 60 Hz (US)

The tool is supplied in a case without the crimping dies.



part No.	Cembre part No.	pressing width mm	punching identification	contacts	wire cross-section	
					mm ²	AWG
C13D 16 C	MK8-C	10	MK 8	C30FA 16, C30MA 16, C30MA 16 P	16	6
C13D 25 C	MK10-C	10	MK 10	C30FA 25, C30MA 25, C30MA 25 P	25	4
C13D 35 C	MK12-C	10	MK 12	C30FA 35, C30MA 35, C30MA 35 P	35	2
C13D 50 C	MK14-C	13	MK 14	C30FA 50, C30MA 50, C30MA 50 P	50	1
C13D 70 C	MK16-C	13	MK 16	C30FA 70, C30MA 70, C30MA 70 P	70	2/0
C13D 95 C	MK18-C	14	MK 18	C30FA 95, C30MA 95, C30MA 95 P	95	3/0
C13D 120 C	MK20-C	14	MK 20	C30FA 120, C30MA 120, C30MA 120 P	120	4/0



ILME S.p.A.
Via Marco Antonio Colonna, 9
20149 Milano - Italy
www.ilme.com

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