



# Multipole connectors

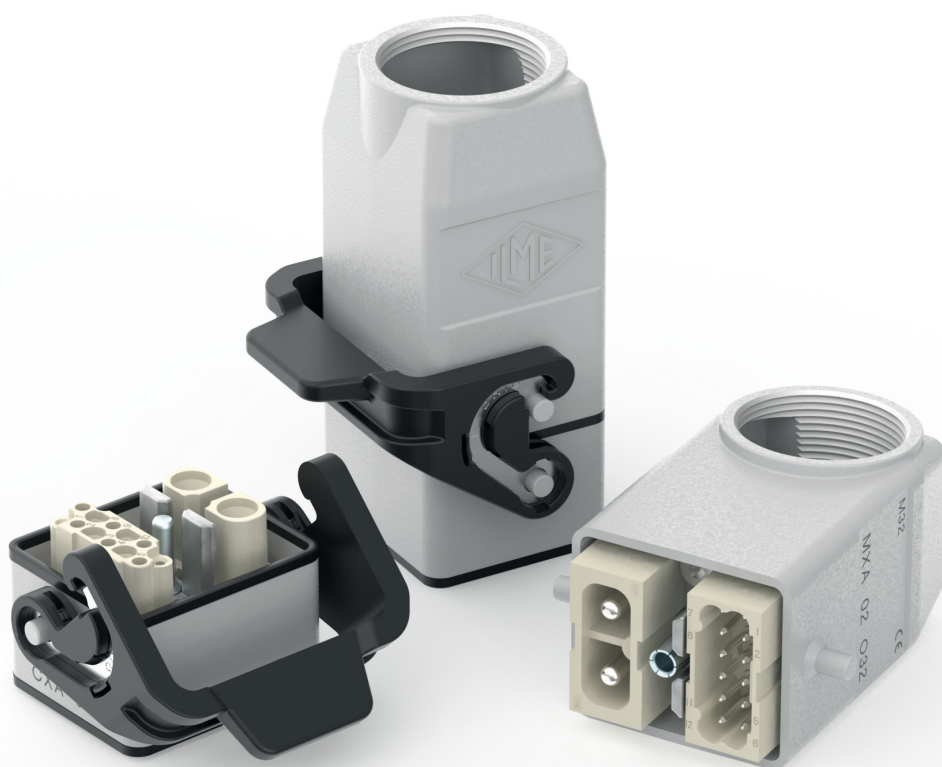
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Newsbook

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## MIXO TWO ENCLOSURES



datasheet

## TECHNICAL FEATURES



Watch our  
technical clip

**MIXO TWO** is the new compact metal housings system designed by ILME to accept two of the wide range of MIXO series single-sized modules. These **robust zinc die-cast connector enclosures** are available as one bulkhead mounting housing and four hood variants, differing by position and size of the cable entry: **M25** or **M32**, horizontal or vertical. Together, they transform two suitable single-sized MIXO module, that can be chosen to form a myriad of different combinations, into a **completely independent** and compact connector.

Each **MIXO TWO** enclosure comes with a **dedicated two-slot MIXO frame** which incorporates sliding **captive module locking tabs** and, in the middle, a **pre-leading (first-make, last-break) PE contact** with relevant screw terminal, for the safest connector operation.

The housing of two single-sized MIXO modules is allowed in a guided way, avoiding incorrect match with a correspondingly mating connector assembly inside the counterpart MIXO TWO enclosure. The complete connectors using MIXO TWO enclosures result polarized to avoid incorrect 180° reversed mating with corresponding connector.

- Q **zinc** die cast alloy, thermosetting powder coated **bulkhead mounting housing** with **IL-BRID locking lever**, with stainless steel core, releasably mounted on moulded pegs, and flange and interface NBR sealing gaskets, glued on bottom and top contours;
- Q **zinc** die cast alloy, thermosetting powder coated **hoods in one part**, to allow simpler MIXO module mounting thanks to the separate modules holding frame that provides the PE connection;
- Q **zinc** die cast alloy **modules holding frame** with **pre-leading PE contact** (female on the hoods, male on the bulkhead mounting housing) for enclosure's equipotential bonding to earth, two captive **sliding locking tabs** made by insulating thermoplastic material, for fixing the modules to the frame, and two captive **galvanized zinc steel M4 screws** with hexagonal socket cylindrical head, for screwdriver's hexagonal tip size s = 3 mm, for fixing the assembly of frame + modules to either the panel or the hood;

- Q PE pre-leading contacts with **M4 screw terminal**, for Ph1 screwdriver or 1 × 5,5 mm flat blade screwdriver, 1,2 Nm / 10,6 lb.in tightening torque, for unprepared wires up to 10 mm<sup>2</sup> (6 AWG), ferruled wires prepared with any ferrule crimping tool up to 6 mm<sup>2</sup> (10 AWG), or with **CCXA02PZ W** special ferrule crimping tool for 10 mm<sup>2</sup> (6 AWG) wire;
- Q **protection covers** for hoods and housings made in shock-proof self-extinguishing thermoplastic material (UL 94V-2) suitable for outdoor exposure, either with pegs (for enclosures with locking lever and sealing gasket) or with locking lever and sealing gasket (for enclosures with pegs) available either with stainless-steel cord, eyelet-terminated (for fixing to the housing) or loop-terminated (for fixing to the hoods, around the incoming cable).

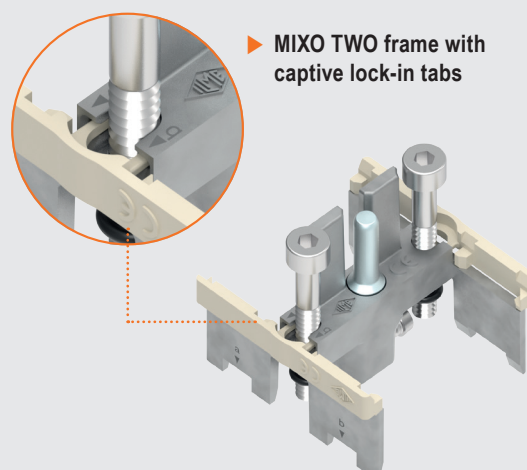
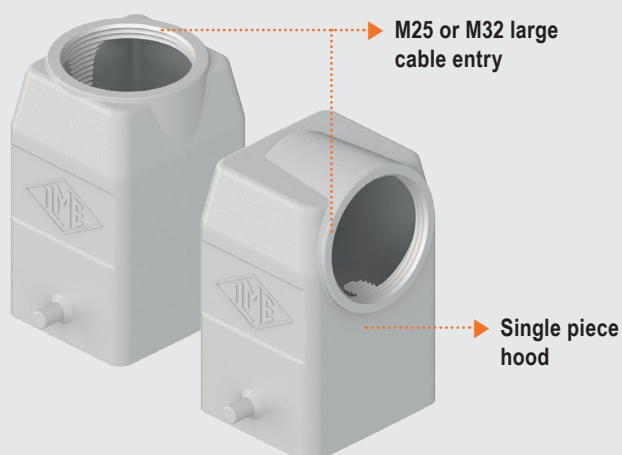
The new series **MIXO TWO** of metallic enclosures for modular connector inserts is the natural complement of series **MIXO ONE**. Where the last one provided a compact protective solution to transform one single-sized MIXO connector module into a complete connector, **MIXO TWO** enclosures do the same with two single-sized series MIXO connector modules, giving the chance to obtain a 2-module complete connector in a more compact space than by using size "57.27" standard hood and housing and relevant MIXO frames.

- Q Due to the desired utmost compactness of this enclosures system, spacings between live parts of the hosted connector modules and the inner surface of the hoods and housing is reduced compared to the corresponding size "44.27" enclosures. Modules with rated insulation voltages higher than 690 V (e.g. 830 V or 1000 V) and rated impulse voltage higher than 6 kV (e.g. 8 kV) used in MIXO TWO enclosures **are limited to such rated values: 690 V 6 kV 3** (see page 75).

NOTE – Some single-sized MIXO modules are not compatible due to additional contour constraints compared with the panel cut-out required for the bulkhead mounting model.

### ✓ CERTIFICATIONS

- cURus (Type 12, 4, 4X), CQC, DNV, BV, pending.
- **CE** and **UKCA** marking. EAC not applicable.
- **RoHS**: compliant with exemption 6(c).



## FOCUS ON

### PE requirements for connector modules using MIXO TWO enclosures

The PE pin and socket contacts on the **modules holding frames of MIXO TWO enclosures** realize a FMLB (*first-make, last-break*) function with respect to all the line contacts of the housed module/s, although the housed connector modules are COC (*connectors without breaking capacity*) and only CBC (*connectors with breaking capacity*) would strictly require the FMLB function for the PE.

MIXO modules are not equipped by themselves with a PE terminal or a seat for a PE contact, as they are deemed to be assembled and mounted into the dedicated MIXO metallic frames, which are then provided on their short sides with 2 differently-sized PE terminals and the relevant pin-and-socket contacts.

Connectors are usually employed to feed electrical equipment. If rated in **voltage band II** (e.g., 230 V<sub>AC</sub> or 500 V<sub>AC</sub>), i.e., above the **ELV voltage band I** (ELV ≤ 50 V<sub>AC</sub>/120 V<sub>DC</sub>) and if the equipment is not designed as a class II one (double-insulated), **the electrical equipment requires the PE protective earthing connection**; hence, the feeding connector is in turn required to have a PE connection, serving both as equipotential bonding to earth of exposed metal parts of its enclosure, and as PE (protective earth), for carrying the equipment's fault current and keeping contact continuity until the tripping of the upstream-installed protective device.

In such case the connector must be equipped with a PE contact with a connecting capacity which is (see IEC 61984, subclause 6.5.4.1, Table 1, column 2):

line wire size (mm <sup>2</sup> )	PE wire size (mm <sup>2</sup> )
S ≤ 16	same as line
16 < S ≤ 35	16

MIXO connector modules, when used within the ELV (extra-low voltage) voltage band I do not require a protective earth contact for the served circuit and equipment; therefore, in such condition, even larger power MIXO modules such as the 70 A module **CX 02 7F /M** or the single-pole 100 A module **CX 01 GF /M** can be employed, both within **MIXO ONE** and **MIXO TWO** enclosures, as there is no need to combine the relevant circuit with a protective earth contact of suitable corresponding wire size. In such case, the PE contact and wiring provided by the MIXO ONE and MIXO TWO enclosures serves merely as equipotential bonding to earth for the exposed metal parts of the enclosure itself. To note that, being metallic, neither MIXO ONE nor MIXO TWO enclosures are deemed to be employed in connectors for class II equipment.

☞ NOTE – The PE terminal of the module holding frame provided with the new MIXO TWO enclosures does not accept any of the PE adapters available for MIXO frames.

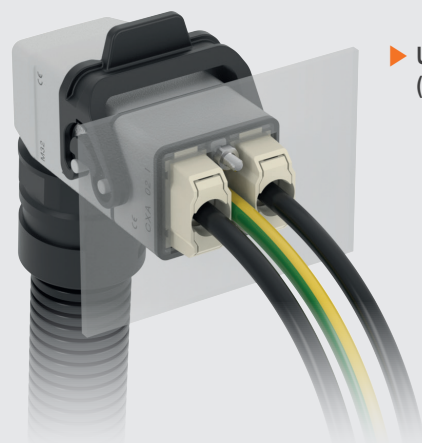
☞ For use to feed equipment rated in **voltage band II** (e.g., 230 V<sub>AC</sub> or 500 V<sub>AC</sub>), MIXO modules suitable for use are those whose wire size does not exceed that of the PE terminal, i.e., ≤ 10 mm<sup>2</sup> (6 AWG).

MIXO 70 A module **CX 02 7F /M** and MIXO 100 A single module **CX 01 GF /M** can be used in **MIXO TWO** enclosures **with up to size 10 contacts**. For larger size contacts, they can be used only if the connector is deemed for ELV (voltage band I, where no PE is required for the served circuit).

*The correct choice and implementation of the relevant cable assemblies are in the full responsibility of the designer of the system.*



► Use in **voltage band I** (ELV) e.g. 48 V<sub>DC</sub>



► Use in **voltage band II** (LV) e.g. 500 V<sub>AC</sub>

## FOCUS ON

Mixo single-sized inserts suitable for use inside **MIXO TWO** enclosures

Inserts	Contact type	Signal type	Kind of connection	Rated current (A)	Rated voltage (V)	Rated impulse voltage (kV)
⚠ CX 01 GF/M *	main	electric	crimp	100	500	6
⚠ CX 02 7F/M **	main	electric	crimp	70	690	6
⚠ CX 02 4AF/M	main	electric	axial screw	40	690	6
⚠ CX 02 4BF/M	main	electric	axial screw	40	690	6
⚠ CX 02 4F/M	main	electric	crimp	40	690	6
CX 03 4F/M	main	electric	crimp	40	400 / 690	6
CX 03 4BF/BM	main	electric	crimp	40	500	6
⚠ CX 3/4 XDF/M	main / auxiliary	electric	crimp	40 / 10	690	6
⚠ CX 04 XF/M	main	electric	crimp	40	690	6
CX 05 SF/M	main	electric	spring	16	400	6
CX 05 SHF/M	main	electric	SQUICH®-spring	16	400	6
CX 06 CF/M	main	electric	crimp	16	500	6
CX 06P CF/M	main	electric	crimp	16	690	6
CX 06 CYF/M	main	electric	AXYR®-spring	16	500	6
CX 08 CYF/M	main	electric	AXYR®-spring	16	400	6
CX 12 DF/M	main / auxiliary	electric	crimp	10	250	4
+ CX 12 DYF/M	main / auxiliary	electric	AXYR®-spring	10	250	4
CX 17 DF/M	main / auxiliary	electric	crimp	10	160	2,5
CX 01 9VF/M	D-SUB	electric	crimp	5	50	0,8
CX 01 9VTF	D-SUB	electric	screw	5	50	0,8
CX 01 9VF2/M2	D-SUB + shield	electric	crimp	5	50	0,8
CX 08 I6F/M	main + shield	electric	crimp	5	50	0,8
CX 08 I6GF/I6GM	main + shield	electric	crimp	5	50	0,8
CX 25 IBF/M	main / auxiliary	electric	crimp	4	50	0,8
CX 36 IF/M	main / auxiliary	electric	crimp	4	32	0,8
CX 20S IF/M	main / auxiliary + shield	electric	crimp	4	32	0,8
CX 20S I6F/I6M	main / auxiliary + shield	electric	crimp	4	32	0,8
CX 04 RF/M	coaxial	electric	crimp	—	—	0,8
CX 01 J8AIF/BIF/PIF	RJ45 + shield	electric	IDC	1	50	0,8
CX 01 J8F/M/IM	RJ45	electric	crimp / IDC	—	—	0,8
CX 01 J8UM	RJ45	electric	IDC	—	—	0,8
CX 04 LF/M	POF / MOST	optic	crimp	—	—	—
CX 04 SCF/M	SC fibre optic	optic	crimp / glue	—	—	—
CX 03 MP	pneumatic metal Ø 3,0 - 4,0 - 6,0 mm	air	push-in / quick-fitting	—	—	—
CX 03 P	pneumatic plastic Ø 1,6 - 3,0 - 4,0 mm	air	push-in	—	—	—
CX 02 P	pneumatic plastic Ø 6,0 mm	air	push-in	—	—	—
CX FM	none (dummy module)	—	—	—	—	—

⚠ Reduced rated voltage and rated impulse voltage.

+ 2023 new product

\* CX 01 GF/M limited to use up to 500 V 6 kV with CGFA /MA 10 contacts. Wiring with CG contacts of larger size is possible only if used in ELV ( $\leq 50 V_{AC}/120 V_{DC}$ , not requiring PE).

\*\* CX 02 7F/M limited to use up to 690 V 6 kV with CX7FA /MA 6.0 or 10 contacts. Wiring with CX7 contacts of larger sizes is possible only if used in ELV ( $\leq 50 V_{AC}/120 V_{DC}$ , not requiring PE).

# CXA – MXA MIXO TWO enclosures

## MIXO inserts:

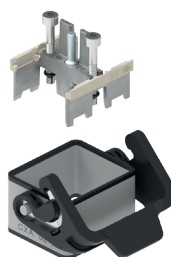
CX 01 G	1 module	264
CX 02 7	1 module	266
CX 02 4	1 module	267
CX 02 4A/4B	1 module	268
CX 03 4	1 module	269
CX 03 4B	1 module	270
CX 3/4 XD	1 module	271
CX 04 X	1 module	272
CX 05 S	1 module	-
CX 05 SH	1 module	274
CX 06/06P C	1 module	275, 276
CX 08 C	1 module	277
CX 12 D	1 module	281
CX 17 D	1 module	282
CX 25 IB	1 module	284
CX 25 I	1 module	-
CX 08 I6/I6G	1 module	286
CX 01 9V/9VT	1 module	296, 298
CX 04 L/R	1 module	299, 300
CX 04 SC	1 module	301
CX 01 J8/J8I	1 module	302
CX 02/03 P	1 module	312
CX 06 CY	1 module	22
CX 12 DY	1 module	21, 39
CX 36 I	1 module	29
CX 20S I	1 module	35
CX 20S IG	1 module	50

refer to CN.19 pages  
 refer to News 2020 pages  
 refer to News 2021 pages

refer to News 2022 pages  
 refer to News 2023 pages

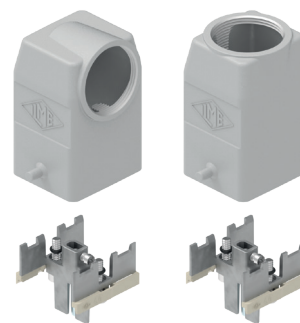
## page:

## bulkhead mounting housings with single lever



**FROM JULY 2023**

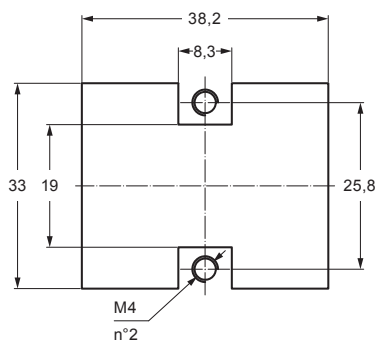
## hoods with 2 pegs



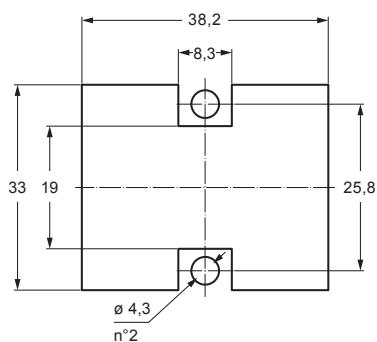
**FROM JULY 2023**

description	part No.	entry M
with lever	<a href="#">CXA 02 I</a>	
with pegs, side entry	<a href="#">MXA 02 O25</a>	25
with pegs, side entry	<a href="#">MXA 02 O32</a>	32
with pegs, top entry	<a href="#">MXA 02 V25</a>	25
with pegs, top entry	<a href="#">MXA 02 V32</a>	32

## panel cut-out for MIXO TWO - threaded panel



## panel cut-out for MIXO TWO - through-holes panel (max. panel thickness: 6 mm)

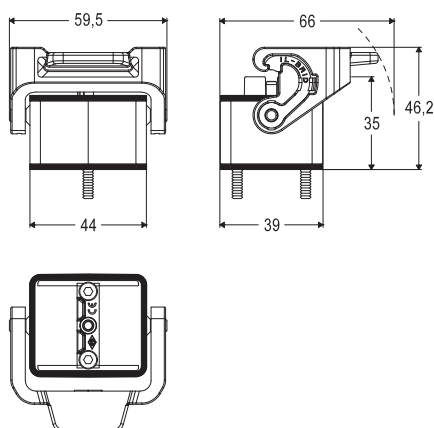


cURus  
Type 4/4X/12 pending

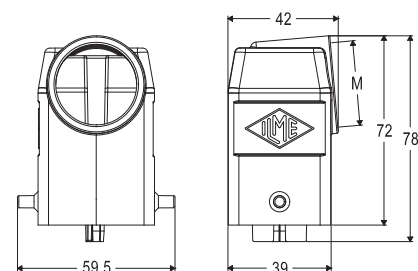


according to IEC/EN 60529

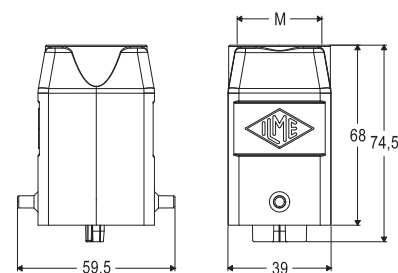
## CXA 02 I



## MXA 02 O



## MXA 02 V





CXP MIXO TWO covers

plastic covers



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plastic covers  
with lever and gasket



FROM JULY 2023

description

part No.  
(with eyelet)

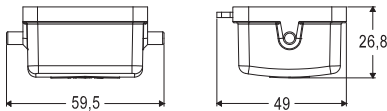
part No.  
(with loop)

with 2 pegs (for enclosures with 1 lever and gasket)  
with 1 lever and gasket (for hoods with 2 pegs)

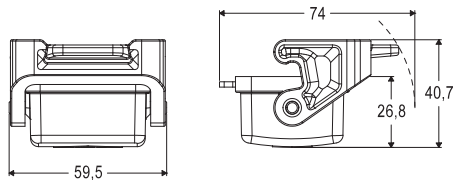
CXP 02 C

CXP 02 CLG

CXP 02 C



CXP 02 CLG



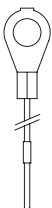
cURus  
Type 4/4X/12 pending



according to IEC/EN 60529

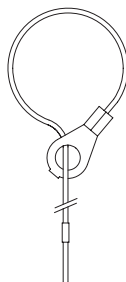
For fixing on housings

eyelet



For fixing on hoods

loop

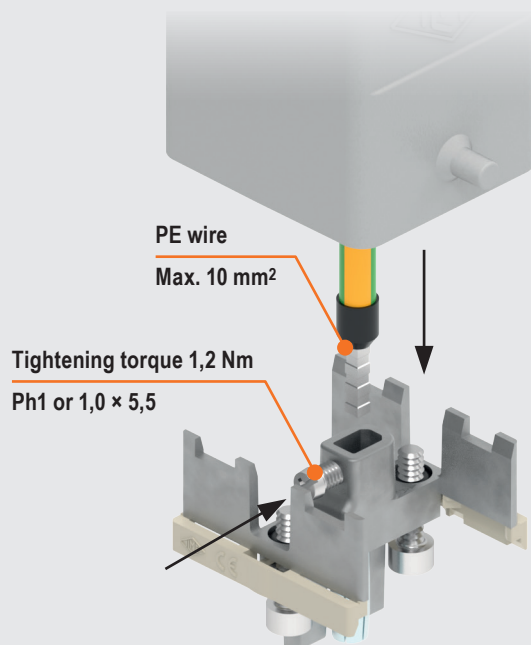




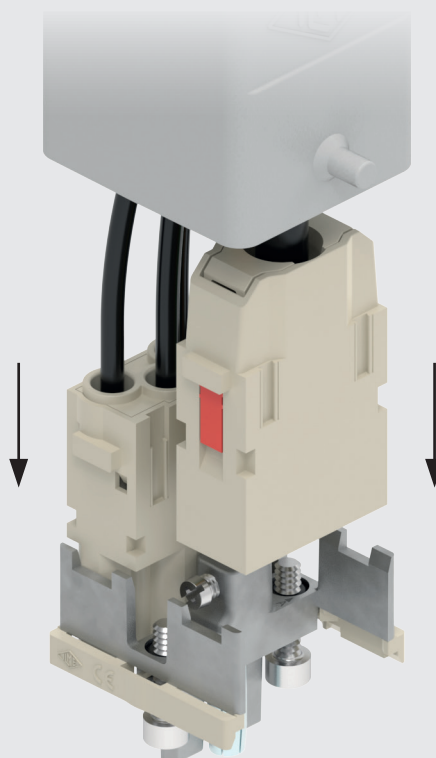
## ASSEMBLY INSTRUCTIONS

## MIXO TWO - HOOD INSERTS ASSEMBLY

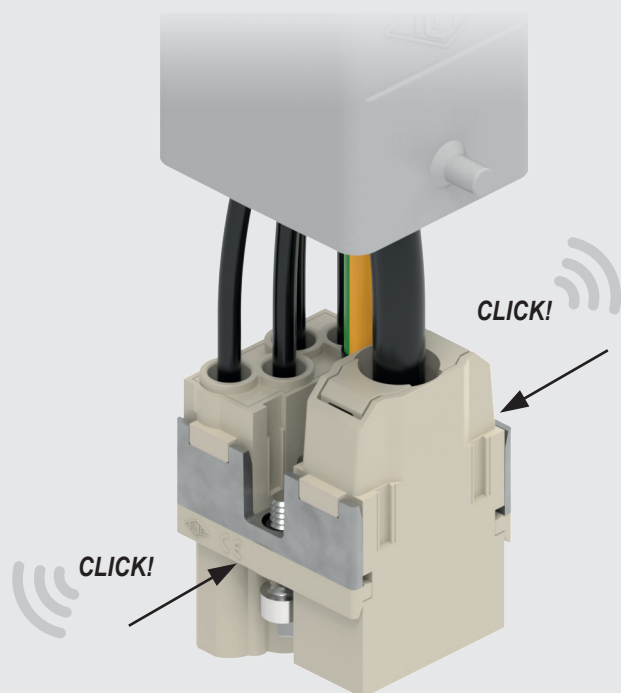
1



2

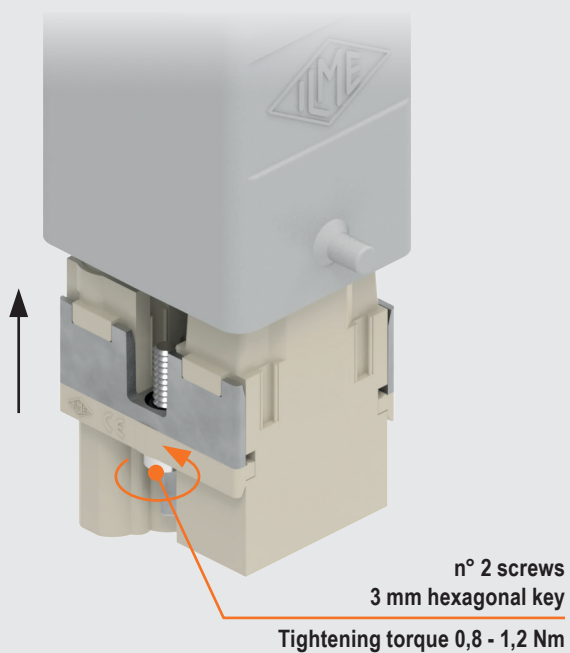


3



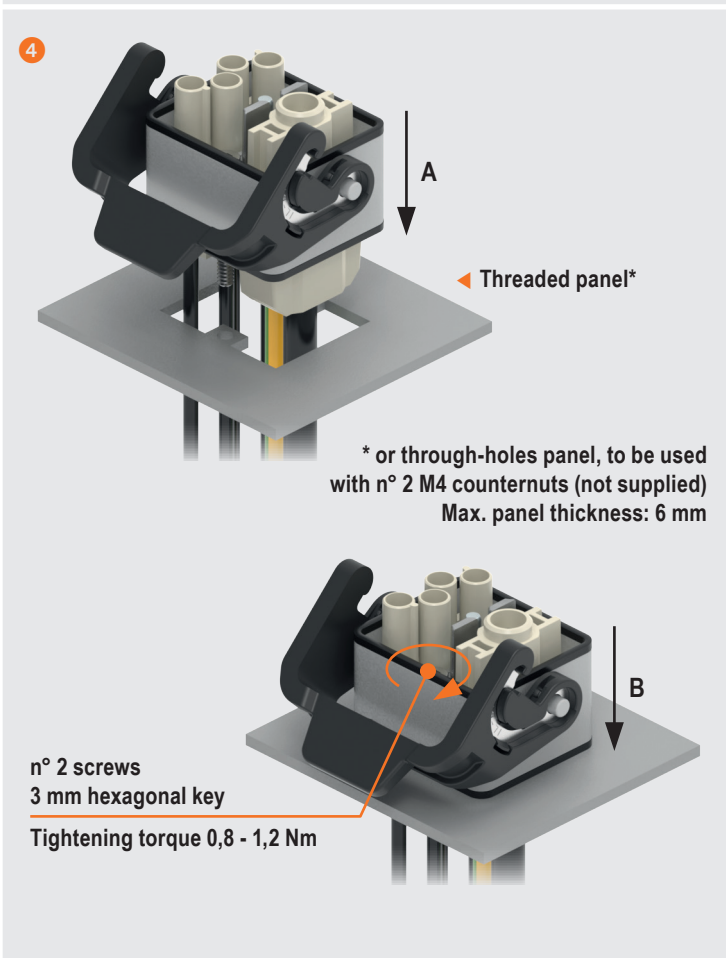
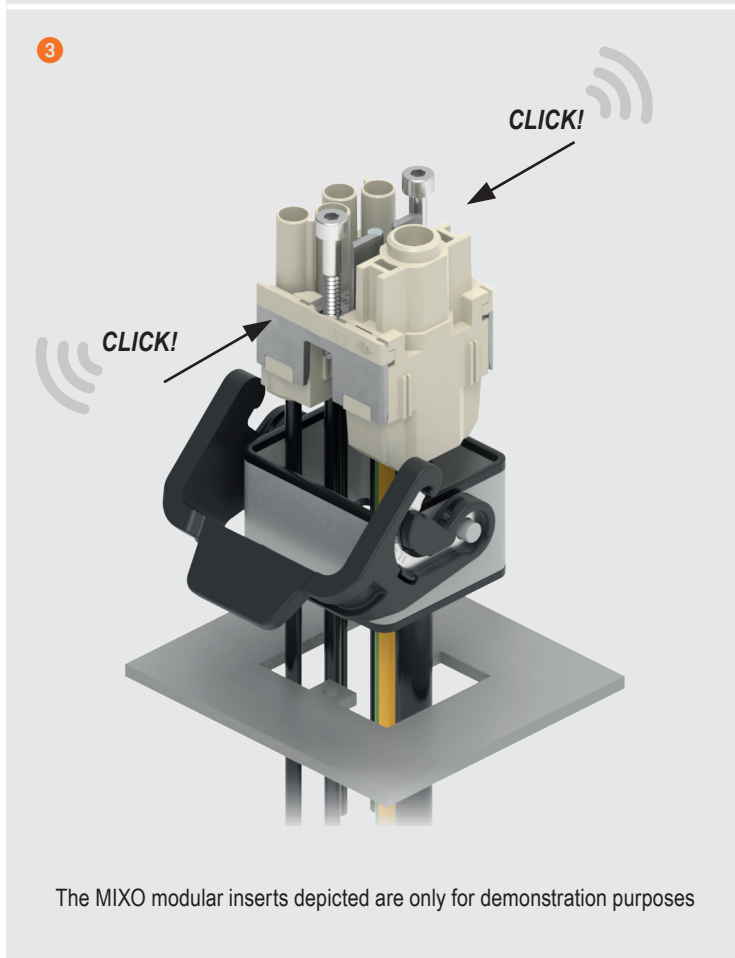
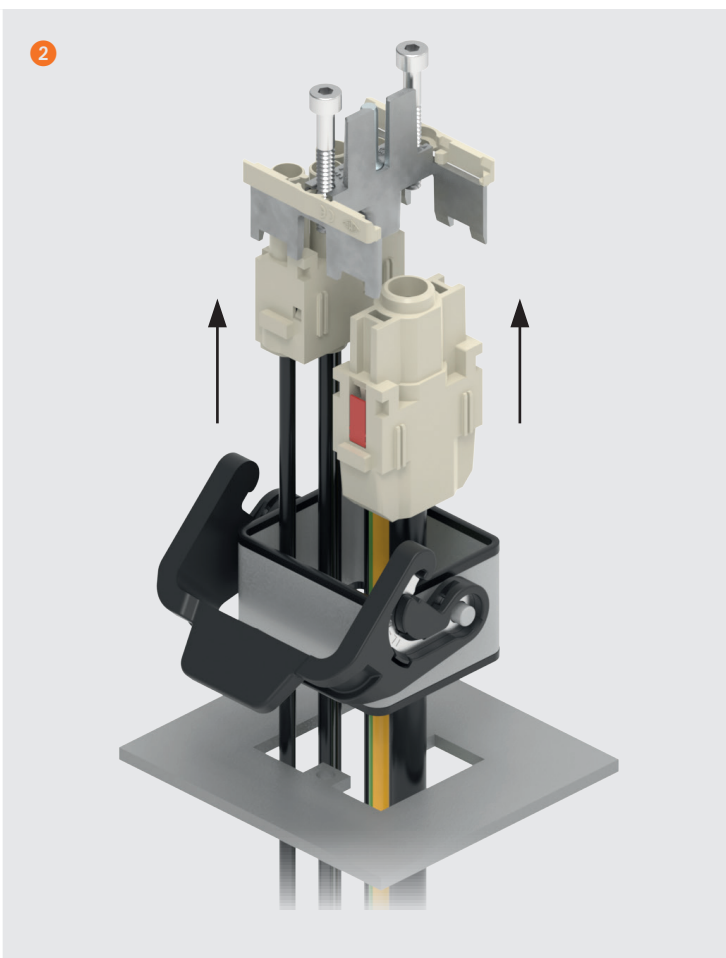
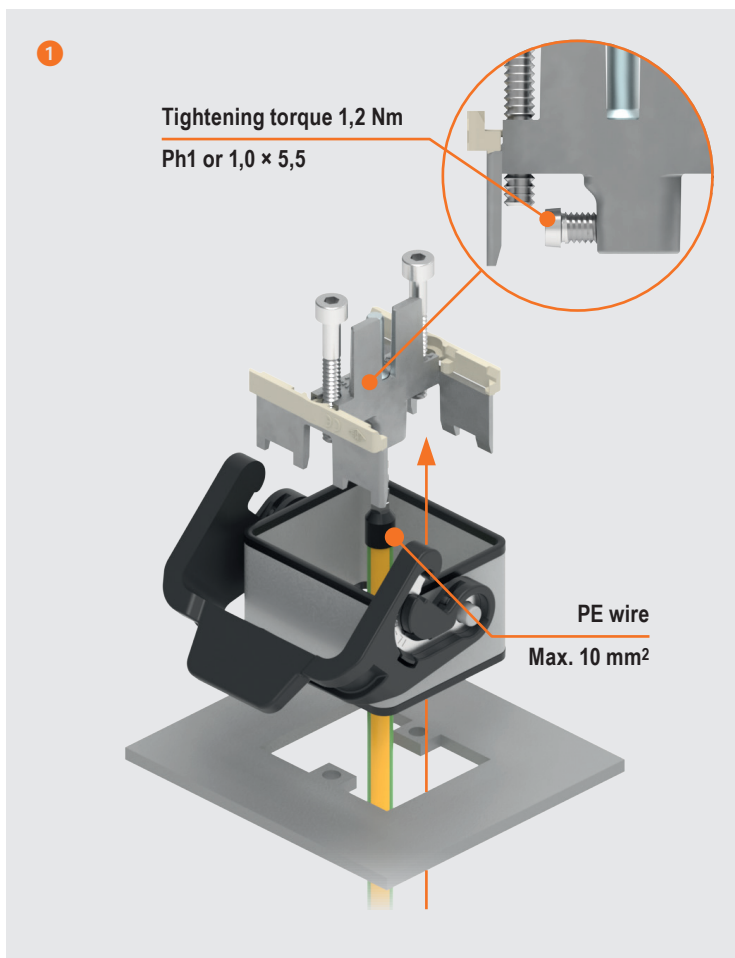
The MIXO modular inserts depicted are only for demonstration purposes

4



## ASSEMBLY INSTRUCTIONS

## MIXO TWO - HOUSING INSERTS ASSEMBLY







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