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Multipole connectors T-Type insulating enclosures



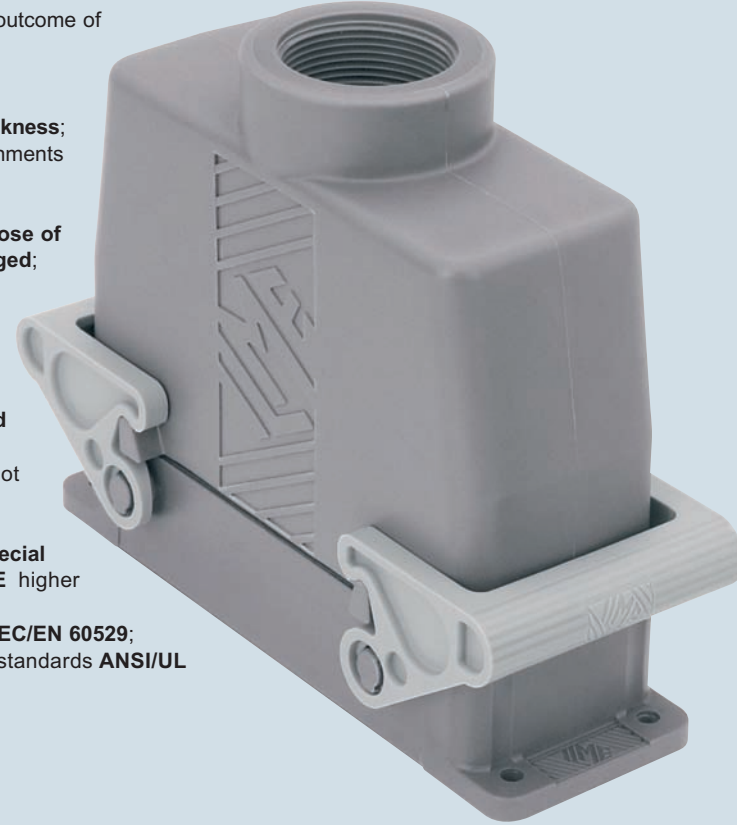
“T-Type” insulating enclosures

Alongside the wide range of traditional metal enclosures for ILME multipole connectors, there is now available a **new series of enclosures in self-extinguishing thermoplastic material** in the most common sizes of “44.27”, “57.27”, “77.27” and “104.27”.

Quality and low cost are the main features of these enclosures, as an outcome of careful product studies.

Valuable characteristics of these new enclosures:

- **structurally solid and mechanically robust**, due to their **increased thickness**;
- **resistance to the main chemical agents**, found in industrial environments (see tab. page 3);
- **pre-fastened gaskets** for easier installation;
- **external dimensions of the bulkhead-mount housings are similar to those of the corresponding metal housings; hole fixing centres are unchanged**;
- wide **space inside enclosures for cables**, with mounted connectors, similar to their corresponding metal version high construction enclosures;
- the possibility with their use to create **total insulation** constructions (equivalent to class II) ☐;
- the **surface mounting**, high construction housings are supplied **with an open threaded entry and diametrically opposite a closed threaded entry**, which can be opened by the user, if required (with suitable tool);
- **absence of powder paint** for environments in which these are not recommended;
- **non-electrostatic** thermoplastic material.
- manufactured from insulating material, they **do not require a special reinforced insulation** as metal ones do, for use with series **CME** higher voltage connector inserts (screw-type terminals);
- degree of protection for coupled connectors is **IP65** according to norm **IEC/EN 60529**;
- **UL Type 12** (= NEMA 12) degree of protection according to American standards **ANSI/UL 50** and **UL 50E** for indoor use;
- each enclosure carries its own part number and conformity markings;
- ambient temperature limits -40 °C / +90 °C.



• bulkhead housings;

• surface mounting housings (with one open threaded entry and one closed entry);



• cover (for housings and hoods with levers);



• single lever, side and top entry, for size (“44.27”);



• double lever for other sizes (“57.27, 77.27, 104.27”)



• side entry hood;

• top entry hood;



New “T-Type” series insulating enclosures

1. Construction

Using the BC-MUL[®] moulding technique and use of MIL.BOX[®] material, these enclosures are structurally solid and mechanically robust, due to their increased thickness. They are particularly resistant to the main pollutants present in industrial environments.

The lever enclosure pegs are built into the enclosures.

The method for fastening the connectors to the enclosures are made up of M3 threaded metal inserts. With reference to metal construction, which to comply with electrical installation safety norms, must be earthed via a metal connection to the grounding terminal Ⓢ of the inserts inside the enclosure, the new series of enclosures offers a solution for total insulation constructions (equivalent to class II) Ⓢ where necessary.

The thermoplastic material used is RAL 7012 dark grey colour and **UL 94V-2** grade self-extinguishing. It has passed glow wire testing in accordance with the IEC (EN) 60695-2-11 at **650 °C** in compliance with intended uses.

2. Gaskets

Gaskets have been produced by means of the FIPFG technology (Formed-In-Place-Foam-Gasket).

They have therefore been incorporated in the base flange on bulkhead housings for easier installation.

3. Levers

The locking levers have been produced in self-extinguishable thermoplastic material coloured grey RAL 7001.

4. Dimensions

The internal dimensions allow mounting of all connector inserts in their relevant sizes. The external dimensions of the bulkhead-mount housings are similar to those of the corresponding metal housings; hole fixing centres are unchanged.

Hoods offer an inner cabling space similar to that of the “high” construction models of the corresponding metal hoods. Other characteristics are in compliance with the applicable safety standard for electrical connectors, **IEC/EN 61984**.

5. Cable entries

The housings and hoods cable entries are available with metric thread, respectively:

- **M25** or **M32** for smaller sizes “44.27” and “57.27”.
- **M32** or **M40** for larger sizes “77.27” and “104.27”.

The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry which can be opened by the user if required (with suitable tool).

Recent norm **IEC/EN 61076-7-100** regarding metric cable entries for multipole electrical connectors for heavy duty uses, which standardises some main dimensions for entries and their related accessories (gaskets, pressure nuts), have been carefully considered in the product design.

6. Marking

These enclosures carry CE marking as they are accessories for electrical connectors with rated operating voltage within the scope of the **2006/95/EC Low Voltage Directive**.

Each enclosure carries its **own part number** and conformity markings.

Interchangeability with other ILME series

TCH series housings can be coupled with metal hoods; insulating hoods can be coupled with “V-Type” metal housings.

The hood “57.27”, “77.27” and “104.27” can be mounted on **COB TCQ** and **COB BC** frames simply by replacing the supplied levers with **COB L** levers (to be purchased in addition).

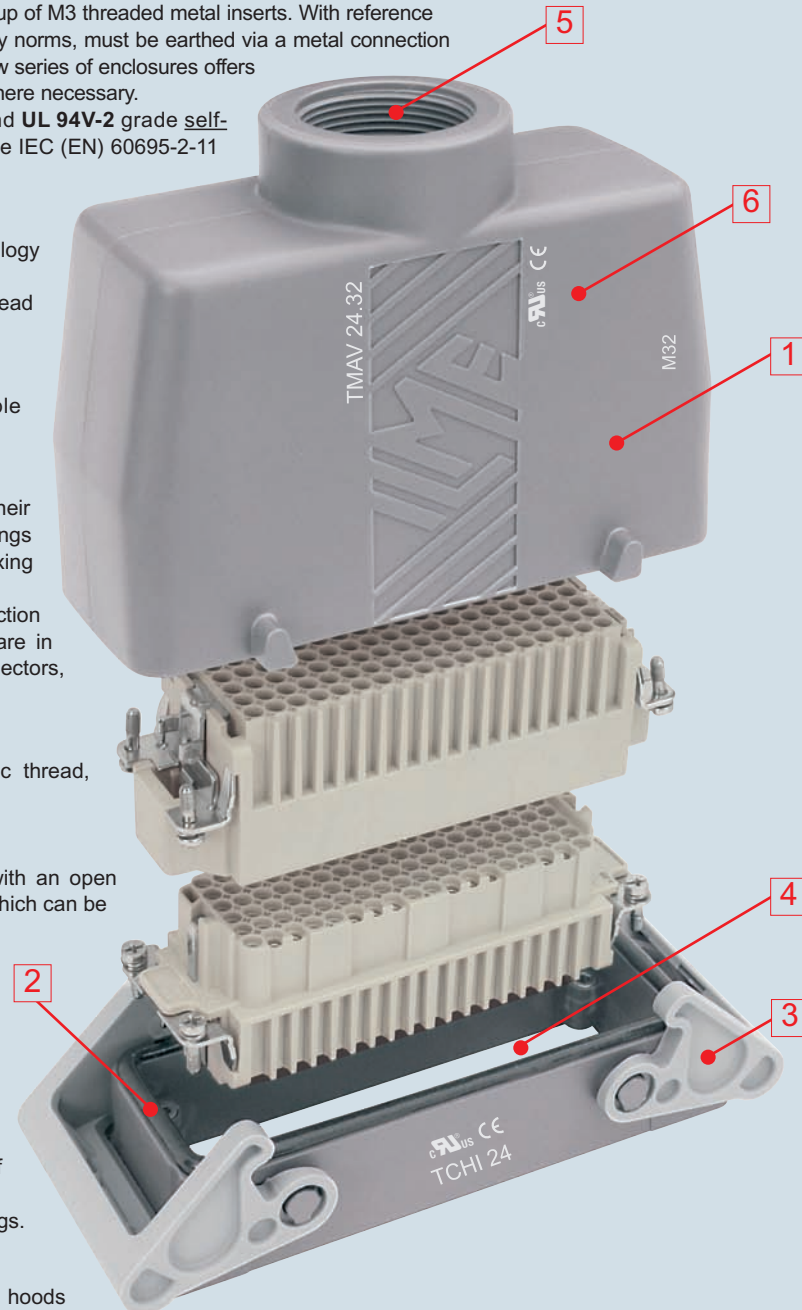
Insulating enclosures are ideal for mounting of all ILME inserts with the exception of series models CT 40/ 64 and CTS 40/ 64 connector. Inserts with 45° terminals of the CTE series (screw-type terminals) and CTSE (spring terminals) are only insertable from the front (therefore not from the back) of the bulkhead housing. Being made by insulating material, they do not require a special reinforced insulation as metal ones do, for use with series CME higher voltage connector inserts (screw-type terminals).

With the exception of the limitations described below, it is generally possible to mount the MIXO series modular connectors and frames with the ground and screen anchors dedicated to this series.

Limitations

With respect to enclosures in metal alloy, ILME insulating enclosures have some limitations of use in combination with particular accessories:

- CRZ 06/ 10/ 16/ 24 reduction plates cannot be mounted with TCHI bulkhead housings due to increased dimensions of the fastening flange of these enclosures.
- The CYG 16 in-line joint cannot be mounted on the TCHI 16 bulkhead housing because the gaskets of the latter do not fit together with the joint profile.
- The CYR 16.3 and CYR 24.4 round cable feed-throughs are difficult to position on their respective TCHI 16 and TCHI 24 bulkhead housings.
- CPT 24 disposable protection cover cannot be mounted on enclosures due to increased outer dimensions of these enclosures.
- MIXO series insert anchors cannot be mounted on TMAO 06/ 10 enclosures.
- CN insert anchors cannot be mounted on TMAO 06/ 10 enclosures.
- When using both cable entries of surface mounting housings, the conduit shall be of insulating type.



Ammonium acetate	●	Cyclo-hexane	○	Sodium nitrate	●
Vinegar	X	Potassium chlorate	●	Sodium nitrite	○
Acetone (propanone)	X	Sodium chlorate	●	Fuel oils	○
Fatty acids	●	Active chlorine	X	Mineral oils (un-tasteful)	●
Boric acid	●	Ammonium chloride	●	Lubricating engine oil	○
Boric acid, 10% aqueous solution	●	Calcium chloride, diluted suspension	●	Mineral based oil	●
Citric acid 50% aqueous solution	X	Calcium chloride	●	Grinding oil	○
Hydrochloric acid, <2% aqueous solution	X	Calcium chloride, 10% aqueous solution	●	Cutting oil	○
Lactic acid	●	Ferric chloride, 10% aqueous solution	X	Linseed oil	●
Muriatic acid, concentrated	X	Potassium chloride	●	Paraffin oil	●
Oleic acid	●	Sodium chloride (kitchen salt)	●	Silicon oil	●
Oxalic acid	●	Cresol	○	IRM oil 901, 20 °C	●
Sulphuric acid, 2% aqueous solution	X	Deca-hydro-naphtalene	X	IRM oil 902, 20 °C	○
Stearic acid	●	Potassium di-chromate	○	IRM oil 903, 20 °C	○
Succinic acid (butanedioic acid)	●	Di-exyl Phtalate	●	Lubricating oil	●
Tartaric acid	●	Di-isononyl Phtalate	●	Transformer oil (dielectric)	●
Water	●	Sulphur dioxide (sulphurous anhydride)	○	Vegetal oil	●
Boric water	●	Di-optyl Phtalate	●	Octane	○
Sea water	●	Epthane	○	Ozone	X
Aqua regia (1:3 nitric acid: hydrochloric acid)	X	Hexane	○	Sodium perborate	●
Amyl alcohol	○	Turpentine essence	X	Potassium persulphate	○
White alcohol (isopropanol + ethanol)	○	Ethanol (ethyl alcohol)	X	Petroleum	●
Ethyl alcohol	●	Petrol ether	○	Caustic potash (potassium hydroxide) 10%	X
Isopropyl alcohol	○	Diluted Phenol	○	Gaseous propane	X
Methyl alcohol, diluted 50%	○	Formalin (formaldehyde 40% aqueous solution)	X	Kitchen salt, aqueous solution	●
Alum	●	Ammonium phosphate	●	Tallow	●
Aqueous amid	●	Sodium phosphate	●	Sodium silicate	●
Gaseous ammonia	○	Diesel Oil	○	Ammonium sulphate	●
Ammonia, liquid	X	Gypsum (see calcium sulphate)	●	Calcium sulphate	●
Ammonia, 10% aqueous solution	●	Glycerine	●	Potassium sulphate	○
Aniline	○	Diluted Glycerine	●	Copper sulphate 10% aqueous solution	●
Mothballs (naphthalene, paradichlorobenzene)	○	Ethylene-glycol or propylene-glycol	●	Sodium sulphate	●
Asphalt	○	Diluted Glycol	●	Sodium sulphide	●
Benzene	X	Diluted Glucose	●	Cresolic solution	○
Normal (low octane) gasoline (petrol)	○	Hydrogen sulphide	○	Solution for photographic processing	●
Petroleum spirit (dry cleaning)	○	Sodium hydroxide (caustic soda)	X	Soap solution	○
Sodium bicarbonate (oxide)	●	Sodium hydroxide 12,5% (liscivia)	○	Fruit juices	●
Beer	●	Ink	●	Sodium Thiosulphate (photographic fixer)	●
Sodium disulphate, aqueous solution	●	Potassium iodide	○	Toluene	X
Borax	○	Sodium Hypochlorite	X	Trichloroethylene	X
Butane, gas	○	Mercury	●	Trichresyl phosphate	●
Butane, liquid	○	Methanol (methyl alcohol)	X	Diluted urea	●
Ammonium carbonate	●	Naphthalene	○	Urine	●
Potassium carbonate	●	N-Butanol (butyl alcohol)	●	Xylene	X
Sodium carbonate (washing soda)	●	Ammonium nitrate	●	Sulphur	●
Tar	○	Calcium nitrate	●		
Potassium cyanide, aqueous solution	●	Potassium nitrate	○		

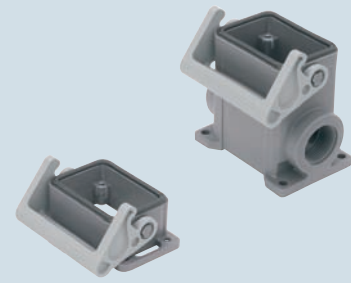
● = resistant ○ = limited resistance X = not resistant

¹ The classification herewith provided is only a generic reference guidance in order to enable a first selection. It is based on literature data provided by the suppliers of the raw materials used, which are related to tests made on specimens under test conditions which are not always homogeneous and involving accelerating techniques, therefore not necessarily describing real operational conditions. The actual behaviour of products in the field may therefore be positively or negatively influenced by several variable environmental parameters like temperature, relative humidity, presence at the same time of a plurality of substances and their concentration, exposure time, dynamic or static application condition, and so on. The accuracy of transferring the indications given herein to the actual conditions of use is therefore merely indicative and does not imply any guarantee or responsibility by ILME.

inserts:		page
CDD	24 poles + ⊕	53**
CQE	10 poles + ⊕	74**
CN	6 poles + ⊕	80**
CCE	6 poles + ⊕	86**
CNE, CSE	6 poles + ⊕	87**
CSS	6 poles + ⊕	98**
CTE, CTSE *)	6 poles + ⊕	106**
MIXO	2 modules	137+151**
CSH	6 poles + ⊕	5***

insert centre distance:
44 x 27 mm

housings with single lever

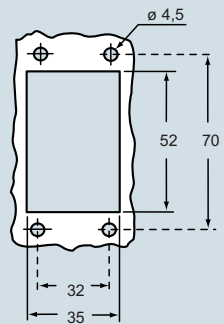


hoods with 2 pegs



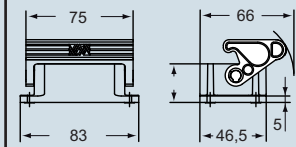
description	part No.	entry M	part No.	entry M
bulkhead mounting housings, with lever in thermoplastic material	TCHI 06 L			
surface mounting housings, with lever in thermoplastic material	TMAP 06 L25	25		
surface mounting housings, with lever in thermoplastic material	TMAP 06 L32	32		
hoods with pegs, side entry			TMAO 06 L25	25
hoods with pegs, side entry			TMAO 06 L32	32
hoods with pegs, top entry			TMAV 06 L25	25
hoods with pegs, top entry			TMAV 06 L32	32
covers with pegs			TCHC 06 L	

panel cut-out for bulkhead mounting housings in mm

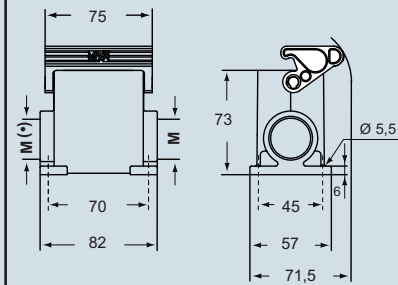


dimensions in mm

TCHI 06 L



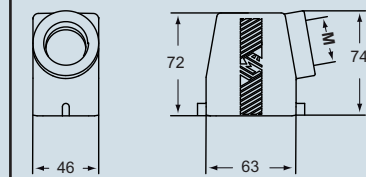
TMAP 06 L25 and TMAP 06 L32



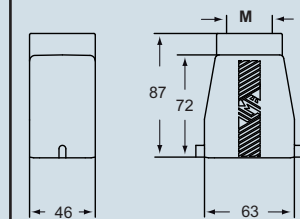
(*) The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry(*), which can be opened by the user, if required (with suitable tool).

dimensions in mm

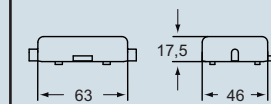
TMAO 06 L25 and TMAO 06 L32



TMAV 06 L25 and TMAV 06 L32



TCHC 06 L



*) only for housing TCHI
** refer to catalogue page CN.07
*** refer to catalogue page CSH

dimensions shown are not binding
and may be changed without notice

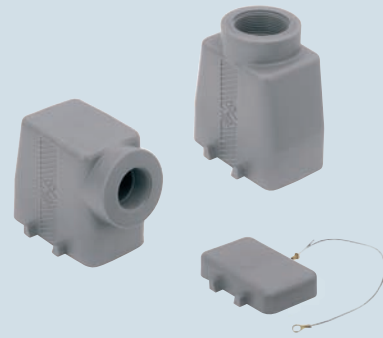
inserts:		page
CDD	42 poles + ⊕	55**
CQE	18 poles + ⊕	75**
CN	10 poles + ⊕	81**
CCE	10 poles + ⊕	88**
CNE, CSE	10 poles + ⊕	89**
CSS	10 poles + ⊕	100**
CTE, CTSE *)	10 poles + ⊕	107**
CMSE	3+2 (aux) poles + ⊕	114**
CMCE	3+2 (aux) poles + ⊕	114**
CME	3+2 (aux) poles + ⊕	115**
CX	8/24 poles + ⊕	129**
MIXO	3 modules	137+151**
CSH	10 poles + ⊕	6***

insert centre distance:
57 x 27 mm

housings with double lever

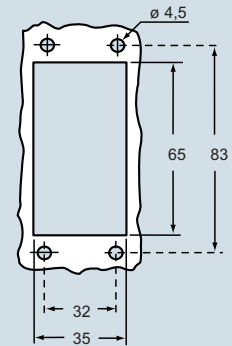


hoods with 4 pegs



description	part No.	entry M	part No.	entry M
bulkhead mounting housings, with lever in thermoplastic material	TCHI 10			
surface mounting housings, with lever in thermoplastic material	TMAP 10.25	25		
surface mounting housings, with lever in thermoplastic material	TMAP 10.32	32		
hoods with pegs, side entry			TMAO 10.25	25
hoods with pegs, side entry			TMAO 10.32	32
hoods with pegs, top entry			TMAV 10.25	25
hoods with pegs, top entry			TMAV 10.32	32
covers with pegs			TCHC 10	

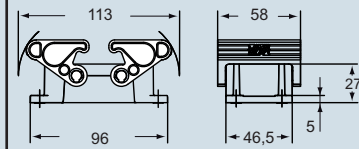
panel cut-out for bulkhead mounting housings in mm



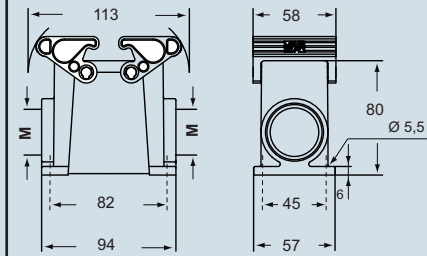
*) only for housing TCHI
** refer to catalogue page CN.07
*** refer to catalogue page CSH

dimensions in mm

TCHI 10



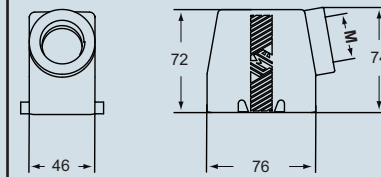
TMAP 10.25 and TMAP 10.32



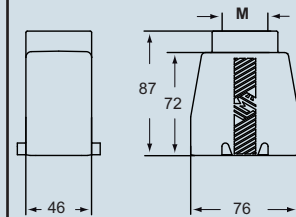
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry, which can be opened by the user, if required (with suitable tool).

dimensions in mm

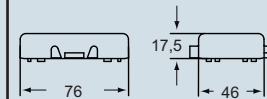
TMAO 10.25 and TMAO 10.32



TMAV 10.25 and TMAV 10.32



TCHC 10

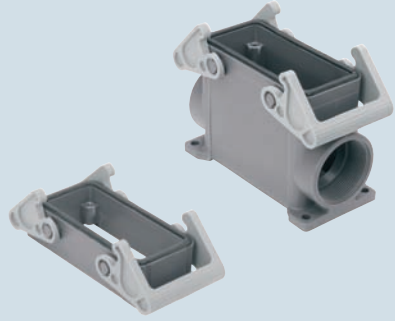


dimensions shown are not binding and may be changed without notice

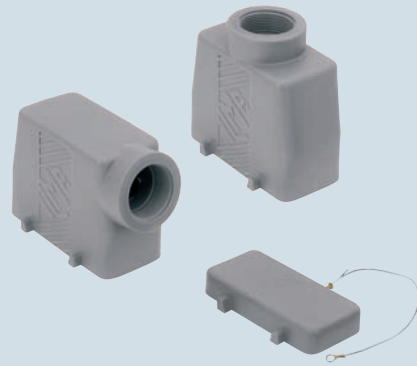
inserts:		page
CD	40 poles + ⊕	43**
CDD	72 poles + ⊕	56**
CQE	32 poles + ⊕	76**
CN	16 poles + ⊕	82**
CCE	16 poles + ⊕	90**
CNE, CSE	16 poles + ⊕	91**
CSS	16 poles + ⊕	100**
CTE, CTSE *)	16 poles + ⊕	108**
CMSE	6+2 (aux) poles + ⊕	116**
CMCE	6+2 (aux) poles + ⊕	116**
CME	6+2 (aux) poles + ⊕	117**
CP	6 poles + ⊕	127**
CX	6/36 and 12/2 poles + ⊕	130+131**
CX	4/0 and 4/2 poles + ⊕	132**
MIXO	4 modules	137+151**
CSH	16 poles + ⊕	7***

insert centre distance:
77,5 x 27 mm

housings with double lever

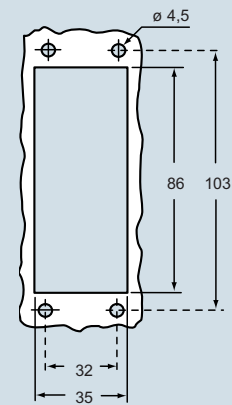


hoods with 4 pegs



description	part No.	entry M	part No.	entry M
bulkhead mounting housings, with lever in thermoplastic material	TCHI 16			
surface mounting housings, with lever in thermoplastic material	TMAP 16.32	32		
surface mounting housings, with lever in thermoplastic material	TMAP 16.40	40		
hoods with pegs, side entry			TMAO 16.32	32
hoods with pegs, side entry			TMAO 16.40	40
hoods with pegs, top entry			TMAV 16.32	32
hoods with pegs, top entry			TMAV 16.40	40
covers with pegs			TCHC 16	

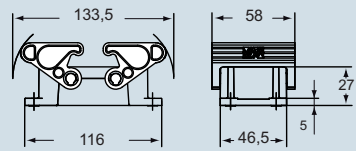
panel cut-out for bulkhead mounting housings in mm



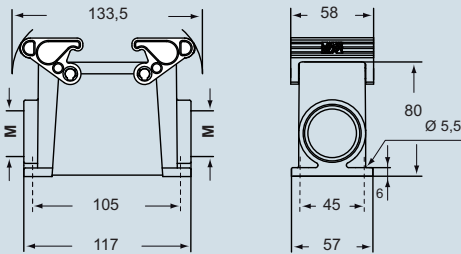
*) only for housing TCHI
** refer to catalogue page CN.07
*** refer to catalogue page CSH

dimensions in mm

TCHI 16



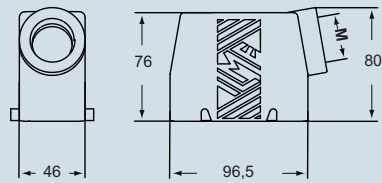
TMAP 16.32 and TMAP 16.40



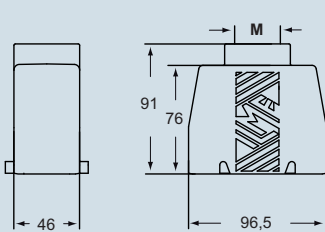
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry, which can be opened by the user, if required (with suitable tool).

dimensions in mm

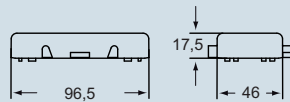
TMAO 16.32 and TMAO 16.40



TMAV 16.32 and TMAV 16.40



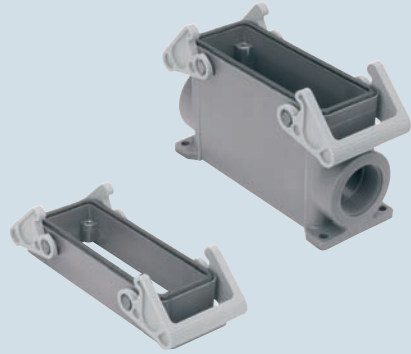
TCHC 16



inserts:	page
CD 64 poles + ⊕	45**
CDD 108 poles + ⊕	58**
CQE 46 poles + ⊕	77**
CN 24 poles + ⊕	83**
CCE 24 poles + ⊕	92**
CNE, CSE, CSH 24 poles + ⊕	93**
CSS 24 poles + ⊕	101**
CTE, CTSE *) 24 poles + ⊕	109**
CMSE 10+2 (aux) poles + ⊕	118**
CMCE 10+2 (aux) poles + ⊕	118**
CME 10+2 (aux) poles + ⊕	119**
CME 16+2 (aux) poles + ⊕	124**
CMCE 16+2 (aux) poles + ⊕	124**
CX 4/8 poles + ⊕	133**
MIXO 6 modules	137+151**
CSH 16 poles + ⊕	8***

insert centre distance:
104 x 27 mm

housings with double lever

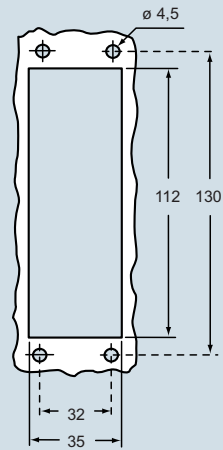


hoods with 4 pegs



description	part No.	entry M	part No.	entry M
bulkhead mounting housings, with lever in thermoplastic material	TCHI 24			
surface mounting housings, with lever in thermoplastic material	TMAP 24.32	32		
surface mounting housings, with lever in thermoplastic material	TMAP 24.40	40		
hoods with pegs, side entry			TMAO 24.32	32
hoods with pegs, side entry			TMAO 24.40	40
hoods with pegs, top entry			TMAV 24.32	32
hoods with pegs, top entry			TMAV 24.40	40
covers with pegs			TCHC 24	

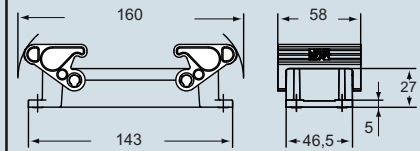
panel cut-out for bulkhead mounting housings in mm



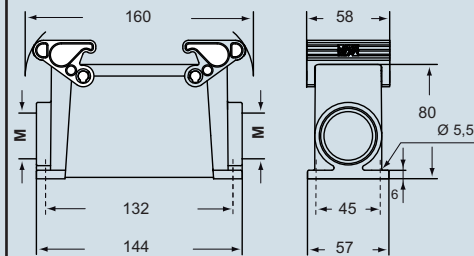
*) only for housing TCHI
** refer to catalogue page CN.07
*** refer to catalogue page CSH

dimensions in mm

TCHI 24



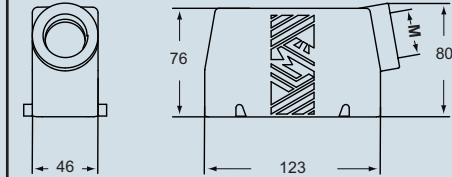
TMAP 24.32 and TMAP 24.40



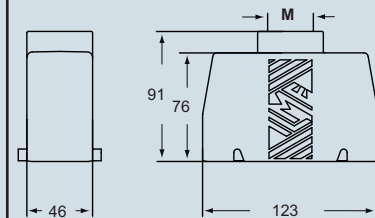
The surface mounting, high construction housings are supplied with an open threaded entry and diametrically opposite a closed threaded entry, which can be opened by the user, if required (with suitable tool).

dimensions in mm

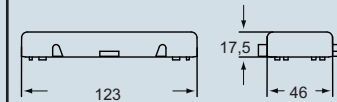
TMAO 24.32 and TMAO 24.40



TMAV 24.32 and TMAV 24.40



TCHC 24



dimensions shown are not binding and may be changed without notice



A large area of the page is filled with horizontal lines, providing space for handwritten notes.



IMPORTANT NOTES

The products in this catalogue cannot guarantee the best functionality on installation, as this depends mainly 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".

The products shown in this catalogue are deemed to form connections mainly for electrical circuits, therefore they have to be assembled according to the user's best choice for the different applications. For such choices, as well as for uses of single components and/or for uses with purposes other than those herein declared, I.L.M.E. SpA refuses any liability for the application results and/or for product incorrect use and/or unsuccessful performances.

The connectors must not be connected or disconnected when live or under load.

After wiring the inserts we recommend to verify the protective earth terminals continuity. The connector inserts operation is guaranteed only if mounted by four screws on a rigid plane (provided by hoods/housings). I.L.M.E. SpA is not responsible for any different application. The installer must verify and ensure the correct coupling and operation of the protective earth connection.

For all inserts with screw-type terminals it is important that the correct torque is applied to the screws in order to prevent damage to the conductor, the screw or the terminal.

Crimping tools and contacts should be supplied by the same manufacturer.

The termination of spring-clamp connector inserts is guaranteed only when the specified screwdriver is correctly used for actuating the spring (see indication in the specific catalogue and, where applied, on the insert) and the operating principles are followed.

To prevent incorrect coupling please respect the polarity drawing (contacts side view) when two similar inserts are mounted in double-sized hood or housing. To avoid coupling mismatch we recommend the use of coding pins when two or more similar connectors are mounted close together.

The complete connectors (enclosures and inserts) guarantee the IP degree of protection when coupled and locked with their closing levers. In order to ensure the same degree of protection provided by the connector housings, the cable glands or other accessories used to close cable outlets must also have at least an equivalent IP degree of protection.

In order to prevent stress on the contacts, the 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.

ILME connectors, inserts and enclosures are generally compatible with similar/equivalent products from other manufacturers, according to the last samples we tested. The full interchangeability cannot be granted by ILME as we cannot be considered responsible for technical changes made by other manufacturers. In particular, ILME cannot guaranteed the full performances of our IP68 enclosures (Series CG) if coupled with other manufacturers' products.

I.L.M.E. SpA takes no responsibility in verifying whether the components herein contained comply with the specific regulations of fields of application.

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