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T-TYPE

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CENTRAL LEVER

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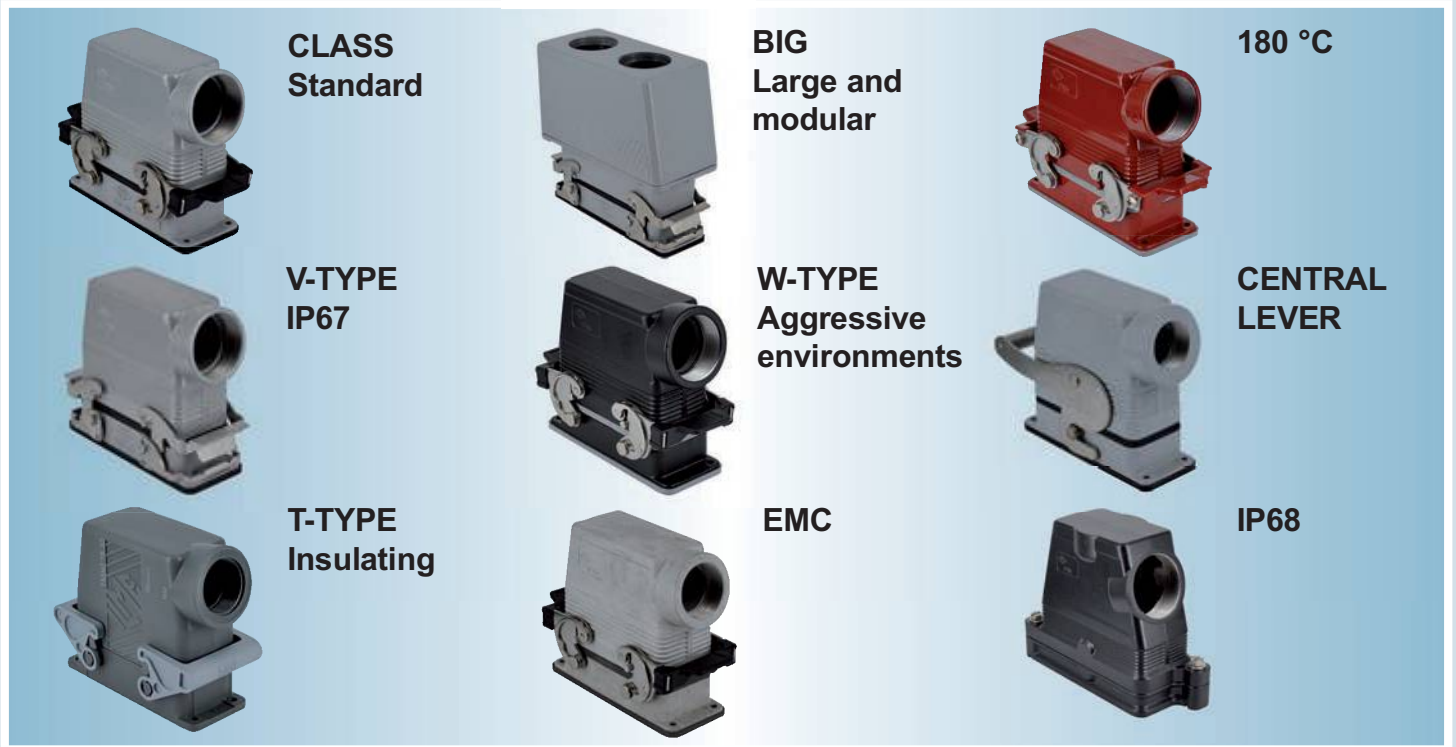
COB

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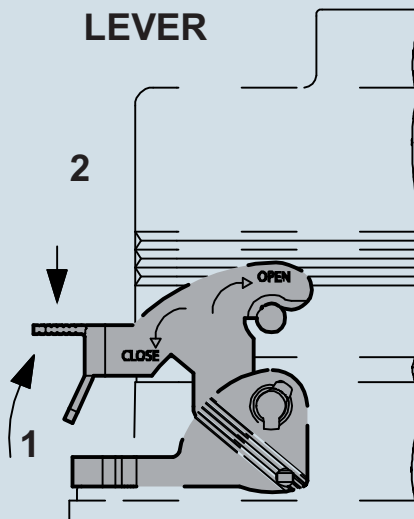
Enclosures

A large number of enclosure versions are available with different combinations of component materials, each one suitable for a specific installation: normal environmental conditions, high temperature environments, aggressive environments and environments that require electromagnetic compatibility. The principal parts are made in die cast aluminium alloy with a coating of epoxy-polyester powder or in self-extinguishing thermoplastic. They are resistant to impacts and strong mechanical stress. The coupling stability and protection against accidental opening are assured by single or double closing devices comprising levers, springs and pegs in stainless steel or entirely in plastic. Sealing is assured by special gaskets that protect the contact groups inside the enclosures against dust and aggressive agents. In general, the coupled enclosures with the appropriate user-selected connections guarantee IP44, IP65, IP66 and IP67 (IEC EN 60529) protection rating. Furthermore, the majority of enclosures successfully complete the high pressure hot water jet test required by standard DIN 40050 - 9 with **IP69K** classification. Finally, a special IP68 protection rated series is also available.



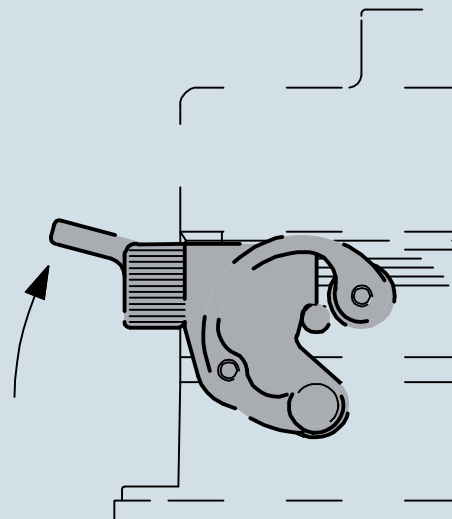
In metallic enclosure versions, ILME offers two different types of levers:

VERTICAL CLOSURE LEVER



- USED FOR ENCLOSURES:**
- C7I (IP67) stainless steel levers
 - CVI (IP65/IP66) stainless steel levers
 - JEI (IP65/IP66) galvanised steel levers

CLASSIC LEVER



- USED FOR ENCLOSURES:**
- C-TYPE (IP65/IP66)
 - W-TYPE (IP65/IP66) for aggressive environments
 - 180 °C (IP65) for high temperatures with a completely metallic lever
 - EMC (IP65/IP66) for electromagnetic compatibility
 - INSULATED 830V (IP65/IP66) for CME 830V inserts

Enclosures with vertical closure are interchangeable with the equivalent models employing rotative levers with springs and roller for maximum versatility of use.

standard version



description

V-TYPE version



description

T-TYPE version



description

This series has been developed for application in electric and electronic machinery, control units, electric panels, control equipment, industrial environments, and in general, wherever a sectional and reliable connection is required for power and signal circuits.
The inserts of the CMCE series (excepting the 16+2 poles) and of the CMSE series may use standard enclosures also for uses of up to 830V.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69K protection ratings (IP44 and IP67 for CK and MK series).

characteristics of materials used:

CK, MK and CQ series

- in self-extinguishing grey RAL 7035 or black thermoplastic material for insulating (in the CQ version, only available in black) or metallic enclosures
- with epoxy-polyester powder coating for metallic enclosures
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- monoblock locking device in stainless or galvanized steel for metallic enclosures
- monoblock locking device in self-extinguishing thermoplastic material for insulating enclosures

CZ, CH, CA and MZ, MH, MA, MF, MZF series

- made of die cast aluminium alloy
- with epoxy-polyester powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- locking device with levers, springs and pins in stainless steel
- monoblock lever handles in stainless steel (for CZ and MZ enclosures)
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (for CH, CA and MH, MA enclosures)

To respond to this wide range of needs, **ILME has developed several new solutions, including the innovative V-Type lever.**

The new lever, due to the **vertical closing movement, offers an IP66/IP67** protection rating (according to EN 60529) when fitted with a complete and coupled connector and used **with ILME standard aluminum hoods (without adaptor) with die cast pegs.**

The fixing flanges are the same as those fitted on traditional models.

This means it is possible to use the new enclosures as **alternatives to the traditional version without affecting the interchangeability**, or changing dimensions, spaces, flanges or fixing positions.

The new lever differs from other commercial ones because of its closing movement principle, consisting of 2 hinged elements that are then pivoted on the enclosure.

This composite movement enables to move the lever above the pin of the enclosure that has to be fixed in place with an initial rotatory movement and then press it downwards to engage the locking mechanism.

The tight seal after closure and the simplicity of the movement are key characteristics that **only ILME has managed to combine into a single lever.**

The V-Type lever also has other interesting functional characteristics for several applications:

- **The friction on the pin is almost zero** because the lever exerts its pressure vertically, thus significantly reducing wear in case of frequent use. Because the lever exerts its pressure vertically, thus significantly reducing wear in case of frequent use.
- The complete lever is manufactured in **stainless steel** and is fitted with a catch that prevents it from being accidentally detached.
- **The absence of plastic parts** offers a higher resistance to impacts and in case of contact with oils and aggressive chemical substances or high ambient temperatures.
- **The lever can be used for applications with vibrations** because it has no springs and is therefore more rigid.
- **The lever occupies a very small space** during the closing phase.
- **It is recommended** in cases in which the **weight of the cable** tends to open elastic levers, like those with vertically installed connectors and cable exits in the bottom.

The interchangeability with equivalent traditional levers with springs and rollers **simplifies the management of stocks, reduces costs and increases flexibility of use.**

Alongside the wide range of traditional metallic 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:

- **significant structural solidity** and mechanical robustness by virtue of **substantial thickness**;
- **resistance to the main chemical agents**, found in industrial environments;
- **pre-fastened gaskets** for easier installation;
- **external dimensions** of the bulkhead housing are **similar to those of the corresponding metal enclosures**; hole fixing centres are **unchanged**.
- **ample space** inside enclosures for cables, with mounted connectors, similar to the corresponding metal high construction versions;
- possibility of making completely **insulated constructions** (equivalent to Class II);
- **absence of powder paint** for environments in which these are not recommended;
- **non-electrostatic** thermoplastic material.
- manufactured from **insulating material, do not require special reinforced insulation as the metal versions do**, for use with series CME higher voltage connector inserts (screw-type terminals);
- protection rating 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** for indoor use;
- each enclosure carries its own part number and conformity markings;
- ambient temperature range: -40 °C / +90 °C.

JEI version



description

BIG version



description

version for aggressive environments



description

The tight seal after closure and the simplicity of the movement are key characteristics that only ILME has managed to combine into a single lever.

- The lever can be used for applications with vibrations because it has no springs and is therefore more rigid.
- The lever occupies a very small space during the closing phase.
- It is recommended in cases in which the weight of the cable tends to open elastic levers, like those with vertically installed connectors and cable exits in the bottom.

The interchangeability with equivalent traditional levers with springs and rollers simplifies the management of stocks, reduces costs and increases flexibility of use.

JCV and JMV Series

- made of die cast aluminium alloy
- with epoxy-polyester powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- lever handle in galvanised steel

The large dimensions of these innovative enclosures have been chosen to offer customers an adequate space to store conductors.

The width of the new enclosures is greater than that of previous versions: 66 mm compared to the 43 mm for standard enclosures. The height of BIG enclosures has also been increased to 100 mm for sizes "44.27" and "57.27" (standard versions for high models: 70 and 72 mm), and to 110 mm for sizes "77.27" and "104.27" (standard versions for high models: 76 mm).

The cable compartment is now fully accessible during assembly (the connector insert is fully inserted in the lower half of the enclosure), offering three times the space compared to standard enclosures. This means it is possible to bend cables and pipes with greater bending radii. Due to this important feature, the new BIG enclosures are particularly suitable for MIXO modular inserts, being versatile and customizable, for multiple cable entries.

Each insert, differentiated according to electric power or signal, pneumatic, optical fiber or Ethernet network current, may thus have the specific branching. One single large connector can replace what previously required two connectors.

Particular attention has been given to the number and dimensions of cable entries. The threaded entry is available in several metric diameters in accordance with EN 60423, for input devices compliant with EN 50262, with vertical or horizontal orientation.

This series has been developed for industrial applications with particularly aggressive external agents (e.g. salt atmospheres or environments).

The enclosures do not have any internal tabs and also allow insertion of the CME inserts. These enclosures have supplementary insulating strips inside. This version is distinguished by the black colour of the enclosures.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65, IP66 and IP69K protection ratings.

characteristics of materials used:

CK..W and MK..W series

- chromate treated die cast
- with epoxy-polyester powder coating
- gaskets in anti-aging fluoro elastomer
- monoblock locking device in stainless steel

CZ..W, CH..W, CA..W series and MZ..W, MH..W, MA..W series

- made of die cast aluminium alloy
- chromate treated die cast
- with epoxy-polyester powder coating
- gaskets in anti-aging fluoro elastomer
- locking device with levers, springs and pins in stainless steel
- pegs with stainless steel coating
- monoblock lever handles in stainless steel (for CZ..W and MZ..W enclosures)
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved (CH..W, CA..W and MH..W, MA..W versions)
- supplementary insulation inside enclosures

EMC version



description

This series has been developed for industrial applications that require electromagnetic compatibility (EMC, Electromagnetic Compatibility), in accordance with the European standards that regulate the emission and immunity of the equipment.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65, IP66 and IP69K protection ratings.

characteristics of materials used:

CK..S and MK..S series

- chromate treated die cast with high surface conductivity
- special gaskets in highly conductive material
- monoblock locking device in stainless steel

CZ..S, CH..S, CA..S and MZ..S, MH..S, MA..S series

- made of die cast aluminium alloy
- chromate treated die cast with high surface conductivity
- special gaskets in highly conductive material
- locking device with levers, springs and pins in stainless steel
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved

180 °C version



description

Series specifically developed for industrial applications where the ambient temperatures are particularly harsh (from -40°C to +180°C). The enclosures do not have any internal tabs and also allow insertion of the CME inserts. These enclosures have supplementary insulating strips inside. For use with inserts in self-extinguishing thermoplastic material (PPS polyphenylene sulphide). This version is distinguished by the red colour of the enclosures.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging.
IP65 and IP69K protection ratings.

characteristics of materials used:

CK..R, CZ..R, CH..R, CA..R and MK..R, MZ..R, MH..R, MA..R series

- made of die cast aluminium alloy
- chromate treated die cast
- coated with special thermoset powder with high resistant to high temperatures
- gaskets in anti-aging fluoro elastomer
- locking device with levers, springs and pins in stainless steel
- monoblock levers in stainless steel (for CZ..R, CH..R 48 and MZ..R, MH..R 48 versions)
- lever handles in aluminium with special die-cast coating (for CH..R 10, 16, 24 and MH..R 10, 16, 24 versions)
- supplementary insulation inside enclosures

single central lever version



description

Series specifically designed for industrial applications with limited installation space. These enclosures can be installed, placed side-by-side and handled in a single operation. Furthermore, the lever's shape reduces the effort required to uncouple the inner fittings.

characteristics of materials used:

CH..YC, CA..YC and MA..YC, CA..YX and MF..YX series

- made of die cast aluminium alloy
- with epoxy-polyester powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- locking device with single stainless steel lever

high protection IP68 version



description

insulated 830V version



description

COB



description

For applications in the railway sector and whenever the following characteristics are demanded: high pressure, impact and corrosion resistance, in protection rating IP68. They also ensure a good screening for electromagnetic compatibility. The IP66 e IP68 protection ratings printed on the enclosure are ensured if the enclosures are correctly installed and the cable entry devices have equal or higher rating.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP69K protection rating for tightness to pressurized water jets.

characteristics of materials used:

CG and MG series

- made of anti-corrosion aluminium alloy
- with black epoxy powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- closure with stainless steel hex-head or bayonet screws.

Applications as for the standard version. The enclosures do not have tabs and allow the insertion of inserts with rated voltage up to 830V (series CME). The inserts of CME series connectors (screw) have a lateral key encryption that prevents installation in metal housings without additional insulation. These enclosures have supplementary insulating strips inside.

UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 protection ratings, printed on the packaging. IP65, IP66 and IP69K protection ratings.

characteristics of materials used:

CM, CMA and MM, MMA, MMF series

- made of die cast aluminium alloy
- with epoxy-polyester powder coating
- gaskets in anti-aging, oil-resistant, grease-resistant and fuel-resistant vinyl nitrile elastomer
- locking device with levers, springs and pins in stainless steel
- lever handles in self-extinguishing thermoplastic material reinforced with glass fibres, UL approved
- supplementary insulation inside enclosures

The COB system makes it possible to use multipole connectors within electric panels without the traditional metallic enclosure as protection is assured by the electric panel itself or other container.

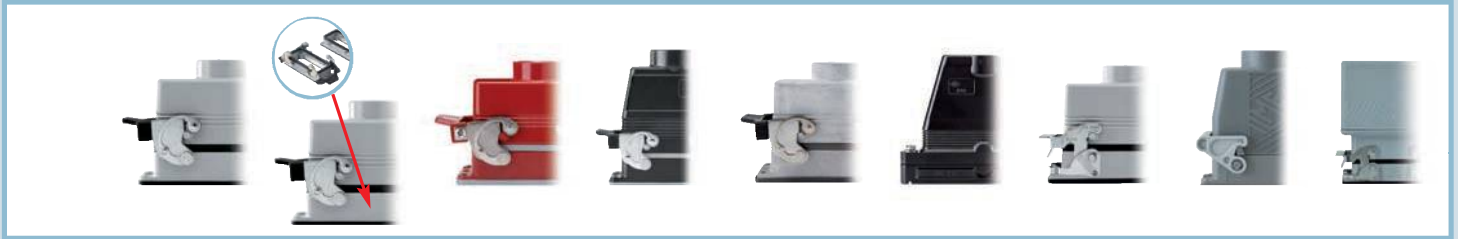
N.B.: connectors must not be handled live.

The COB system may be assembled in the three following ways:

- on panels with window snap fastening device* (**Figure 1**)
- on DIN EN 60715 rails, both lengthways and crossways to the support (**Figure 2**)
- on fixed panels using screws (**Figure 2**)

The COB system offers the following advantages:

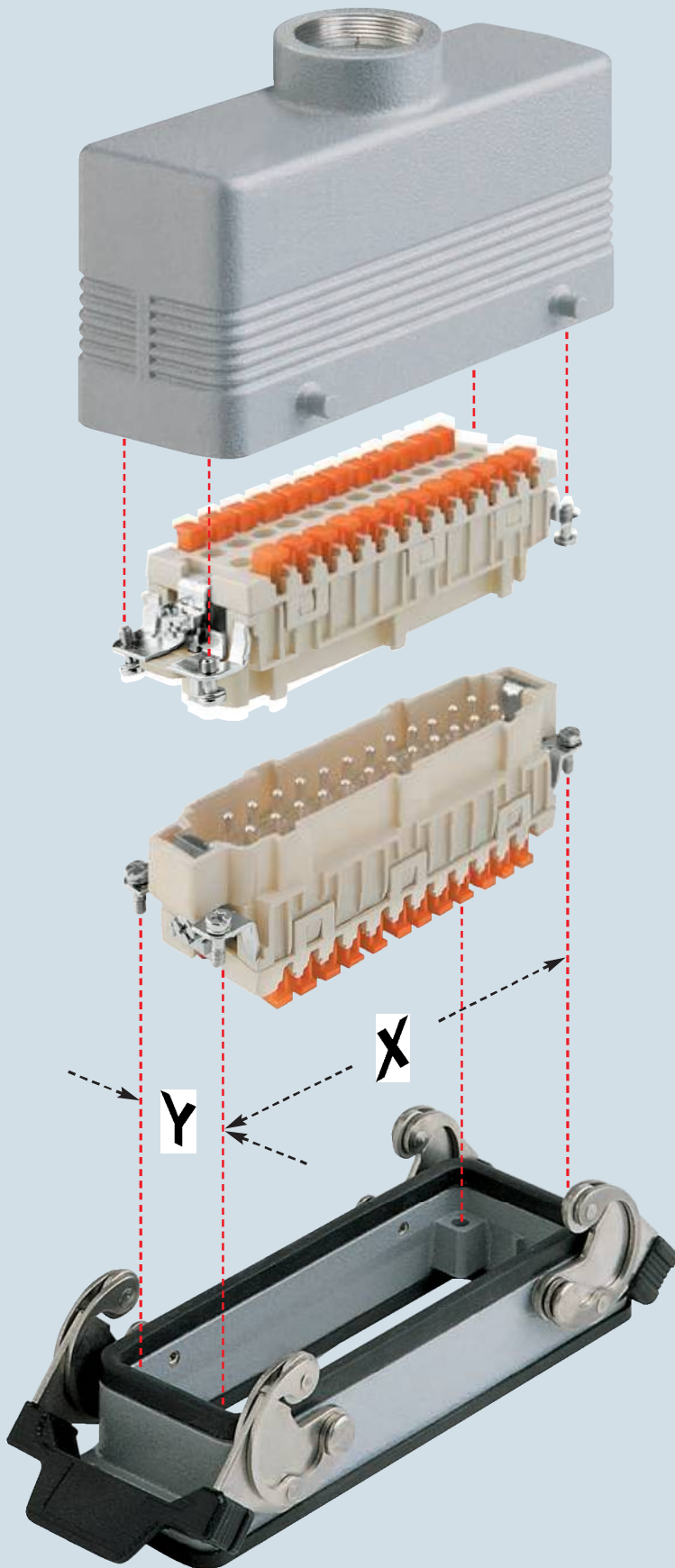
- reduction in cost and space with respect to metallic enclosures and traditional terminal boards
- possibility of rewiring at the connector bench with connected devices
- easy wiring inspection and tests with coupled connectors, thanks to rear access to the inserts via the turnover device
- fast mounting in panels thanks to the snap fastening device on the DIN EN 60715 rails
- sturdy support structure, specific to the size of each insert and does not require any preparation
- broad passage for housing of conductor cables
- mobile parts prearranged for the clamping of bundles of conductors of multipolar cables to prevent contact with the connector contacts



enclosure versions

enclosures size	standard pages	insulated 830V pages	180 °C pages	for aggressive environments pages	EMC pages	high protection IP68 pages	vertical closure V-TYPE pages	insulating T-TYPE pages	hoods BIG pages
21.21	✓ 201 + 205	✗	✓ 353	✓ 325	✓ 343	✓ 372 + 373	✗	✗	✗
32.13	✓ 206 + 207	✗	✗	✗	✓ 344 + 345	✗	✗	✗	✗
49.16	✓ 208 + 210	✗	✎ on request	✓ 326	✓ 346	✗	✗	✗	✗
66.16	✓ 211 + 213	✗	✎ on request	✓ 327	✓ 347	✗	✗	✗	✗
66.40	✓ 215 + 217	✗	✗	✓ 328	✗	✗	✗	✗	✗
44.27	✓ 218 + 221	✗	✓ 354	✓ 329	✓ 348	✓ 374 + 377	✓ 254/260	✓ 282	✓ 304 + 306
57.27	✓ 222 + 227	✓ 391 + 395	✓ 355	✓ 330	✓ 349	✓ 378 + 381	✓ 255/264	✓ 283	✓ 308 + 311
77.27	✓ 228 + 234	✓ 397 + 401	✓ 356	✓ 331	✓ 350	✓ 382 + 385	✓ 256/268	✓ 284	✓ 312 + 315
104.27	✓ 236 + 243	✓ 403 + 407	✓ 357	✓ 332	✓ 351	✓ 386 + 389	✓ 257/272	✓ 285	✓ 316 + 319
77.62	✓ 244 + 247	✓ see standard enclosures	✗	✓ 333	✗	✗	✗	✗	✗
104.62	✓ 248	✓ see standard enclosures	✓ 358	✓ 334	✗	✗	✗	✗	✗

- ✓ = normal production
- ✎ = may be supplied on request, contact our sales offices
- ✗ = currently unavailable



Identification of enclosures

Connector inserts and their enclosures are numerous and therefore the search for the correct pairing of one with another can be complex.

To facilitate this operation (in addition to the normal part number) the definition of “size” has been introduced in this catalogue.

As indicated in the illustration on the left and in the table below the size value refers to the screw fixing centre distances which constitute a unique element since they are common to both the inserts and the enclosures.

All the pages that illustrate combinable articles (inserts and enclosures) carry references as per the examples illustrated on the opposite page.

Following is a table that shows all the sizes of the enclosures and the dimensions of the housings where the inserts will be fastened.

enclosures size	insert housing with screw fixing centre distance x-y
“21.21”	(21 x 21 mm) **
“32.13”	32 x 13 mm
“49.16”	49.5 x 16 mm
“66.16”	66 x 16 mm
“66.40”	66 x 16 mm (2 inserts)
“44.27”	44 x 27 mm
“57.27”	57 x 27 mm
“77.27”	77.5 x 27 mm
“104.27”	104 x 27 mm
“77.62”	77.5 x 27 mm (2 inserts)
“104.62”	104 x 27 mm (2 inserts)

** dimensions relating to the insert cross-section size not being able to identify a screw fixing centre distance since provided with a single screw.