

LS-TYPE



LS-TYPE series

On stage

The **LS-TYPE** enclosures are the ideal solution for the entertainment industry (lighting system power supply and related mixer and dimmer panels), including theatre stages, film sets, radio and TV studios, discos, trade fair booths, concert halls and night public events, both indoors and outdoors, etc.

All parts are in elegant RAL 9005 black to make them suitable for situations and locations where they should not be visible in the dark.

Functional characteristics

These enclosures can be installed beside stages.

They do not have any bright components that would distract and simple plastic levers that are easy to replace.

- ✔ UL certified for USA and Canada for NEMA 4, NEMA 4X and NEMA 12 degrees of protection (enclosure type ratings) printed on the packaging.
IP65/IP69 degree of protection.



SUM-UP OF MATERIALS USED FOR CH..N - MA..N and MH..N - MF..N LS-TYPE series

- ☑ Made of die cast aluminium alloy
- ☑ Powder-coated with RAL 9005
- ☑ Gaskets in anti-aging, oil resistant, grease resistant and fuel resistant vinyl nitrile elastomer
- ☑ Locking device with levers in black made of plastic
- ☑ Ambient temperature range -40 °C / +125 °C.

CH..N - MA..N and MH..N - MF..N LS-TYPE version

inserts		page:
CDD	24 poles + ⊕	76
CDS	9 poles + ⊕	-
CDSH	9 poles + ⊕	86
CDSH NC	6 poles + ⊕	95
CNE	6 poles + ⊕	110
CSE	6 poles + ⊕	-
CSH	6 poles + ⊕	110
CSH S	6 poles + ⊕	122
CCE	6 poles + ⊕	130
CSS	6 poles + ⊕	148
CT, CTSE (16A) *	6 poles + ⊕	160
CQE	10 poles + ⊕	168
MIXO	2 modules	262 - 317

*) only in the CHIN 06 LCH and CHIN 06 L enclosure

housings with 2 pegs and 1 lever



hoods with 2 pegs

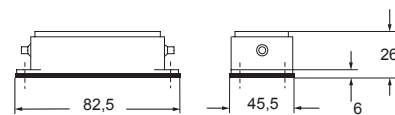


description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 2 pegs	CHIN 06 LCH			
bulkhead mounting housing, with lever	CHIN 06 L			
surface mounting housing, high construction, with lever	MAPN 06 L32	32		
with pegs, side entry			MHON 06 L25	25
with pegs, top entry			MHVN 06 L25	25
with pegs, side entry, high construction, without adapter ¹⁾			MFON 06 L25	25
with pegs, top entry, high construction, without adapter ¹⁾			MFVN 06 L25	25

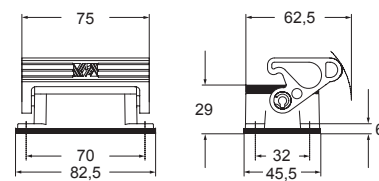
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

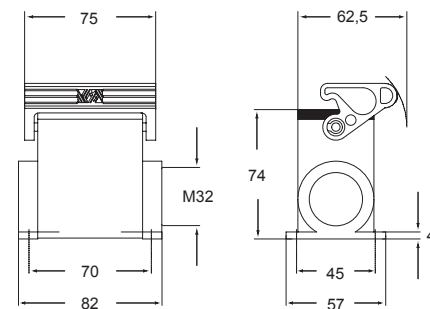
CHIN LCH



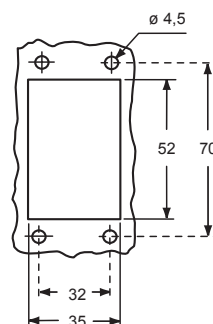
CHIN L



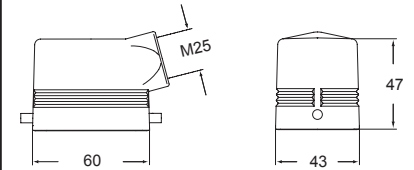
MAPN L32



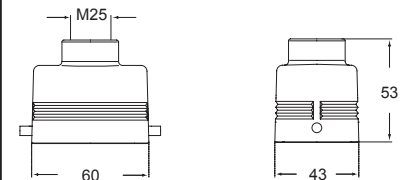
panel cut-out for bulkhead mounting housings CHIN LCH and CHIN L



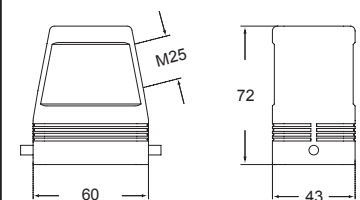
MHON L25



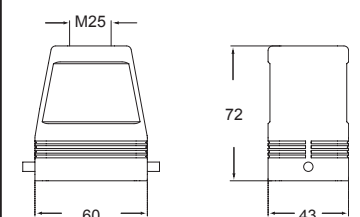
MHVN L25



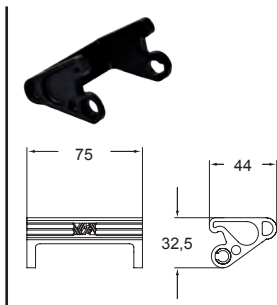
MFON L25



MFVN L25



CR LN
Spare part lever for "44.27" enclosures with levers



CAIUS Type 4/4X/12



CH..N and MH..N - MF..N LS-TYPE version

inserts		page:
CDD	24 poles + ⊕	76
CDS	9 poles + ⊕	-
CDSH	9 poles + ⊕	86
CDSH NC	6 poles + ⊕	95
CNE	6 poles + ⊕	110
CSE	6 poles + ⊕	-
CSH	6 poles + ⊕	110
CSH S	6 poles + ⊕	122
CCE	6 poles + ⊕	130
CSS	6 poles + ⊕	148
CQE	10 poles + ⊕	168
MIXO	2 modules	262 - 317

hoods with single lever



covers



description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
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with lever and gasket, top entry
with lever and gasket, top entry, high construction, without adapter ¹⁾

MHVN 06 LG25 25
MFVN 06 LG25 25

covers with pegs
covers with lever

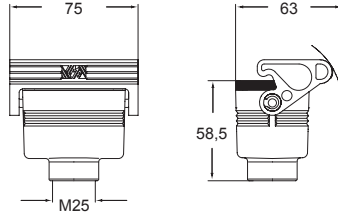
CHCN 06 L

CHCN 06 LG

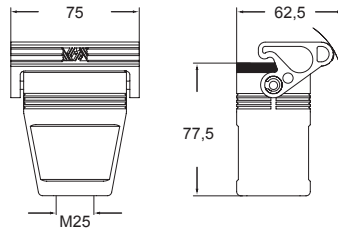
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

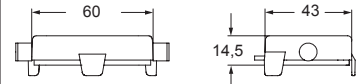
MHVN LG25



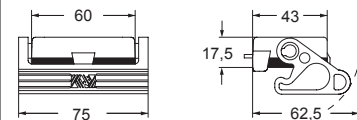
MFVN LG25



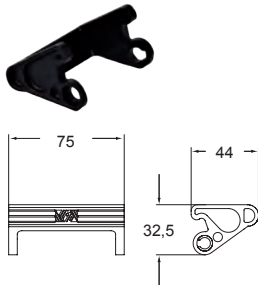
CHCN L



CHCN LG



CR LN
Spare part lever for "44.27" enclosures with levers

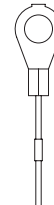


CRUS Type 4/4X/12



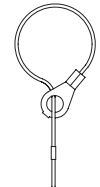
For fixing on housings

eyelet



For fixing on hoods

loop



CH..N - MA..N and MH..N - MF..N LS-TYPE version

inserts		page:
CDD	42 poles + ⊕	78
CDS	18 poles + ⊕	-
CDSH	18 poles + ⊕	87
CNE	10 poles + ⊕	111
CSE	10 poles + ⊕	-
CSH	10 poles + ⊕	111
CSH S	10 poles + ⊕	123
CCE	10 poles + ⊕	131
CMSH	3+2 (aux) poles + ⊕	136
CMCE	3+2 (aux) poles + ⊕	137
CSS	10 poles + ⊕	149
CT, CTSE (16A) *)	10 poles + ⊕	161
CQE	18 poles + ⊕	169
CX	8/24 poles + ⊕	194
MIXO	3 modules	262 - 317

*) only in the CHIN 10 CH and CHIN 10 enclosure

housings with 4 pegs and 2 levers



hoods with 4 pegs

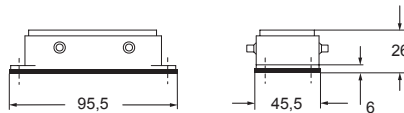


description	part No.		entry M	
bulkhead mounting housing, with 4 pegs	CHIN 10 CH			
bulkhead mounting housing, with 2 levers	CHIN 10			
surface mounting housing, high construction, with 2 levers	MAPN 10.32		32	
with pegs, side entry	MHON 10.25		25	
with pegs, top entry	MHVN 10.25		25	
with pegs, side entry, high construction, without adapter ¹⁾	MFON 10.32		32	
with pegs, top entry, high construction, without adapter ¹⁾	MFVN 10.32		32	

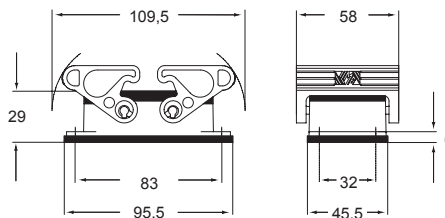
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

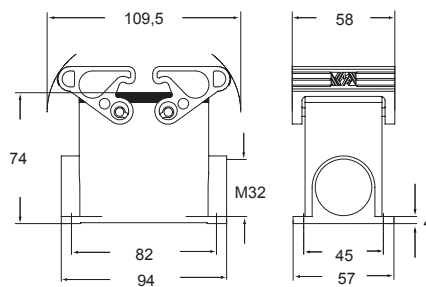
CHIN CH



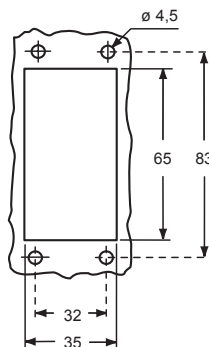
CHIN



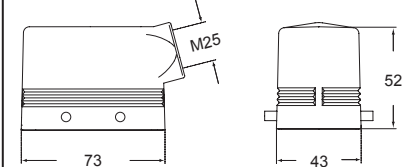
MAPN



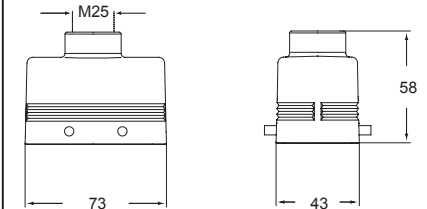
panel cut-out for bulkhead mounting housings CHIN CH and CHIN



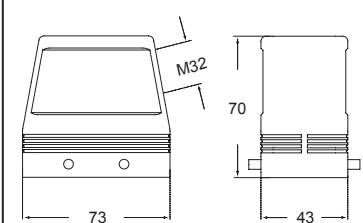
MHON



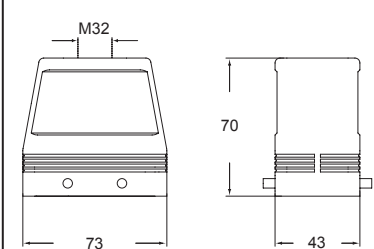
MHVN



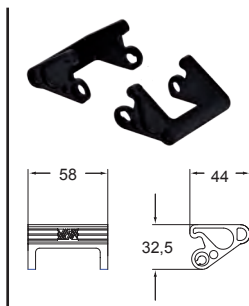
MFON



MFVN



CR LN
Spare part lever
for "57.27"
enclosures
with levers



CAUS Type 4/4X/12



CH..N and MH..N - MF..N LS-TYPE version

inserts		page:
CDD	42 poles + ⊕	78
CDS	18 poles + ⊕	-
CDSH	18 poles + ⊕	87
CNE	10 poles + ⊕	111
CSE	10 poles + ⊕	-
CSH	10 poles + ⊕	111
CSH S	10 poles + ⊕	123
CCE	10 poles + ⊕	131
CMSH	3+2 (aux) poles + ⊕	136
CMCE	3+2 (aux) poles + ⊕	137
CSS	10 poles + ⊕	149
CQE	18 poles + ⊕	169
CX	8/24 poles + ⊕	194
MIXO	3 modules	262 - 317

hoods with 2 levers



covers



description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
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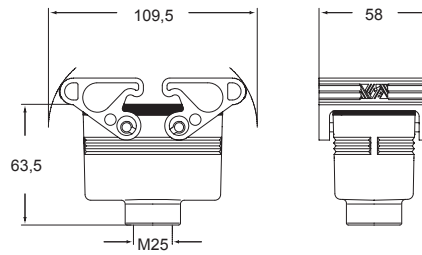
with levers and gasket, top entry	MHVN 10 G25	25		
with levers and gasket, top entry, high construction, without adapter ¹⁾	MFVN 10 G220	20 x 2		
with levers and gasket, top entry, high construction, without adapter ¹⁾	MFVN 10 G32	32		

covers with pegs			CHCN 10	
covers with 2 levers				CHCN 10 G

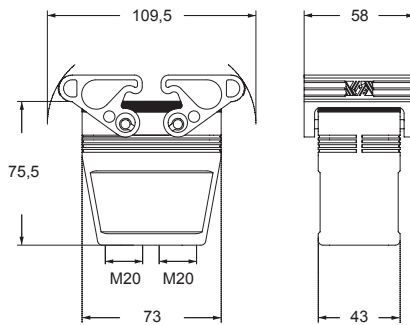
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

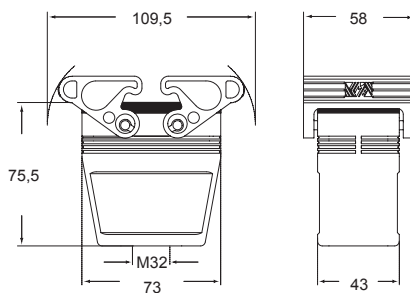
MHVN G25



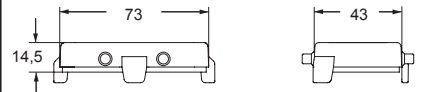
MFVN 10 G220



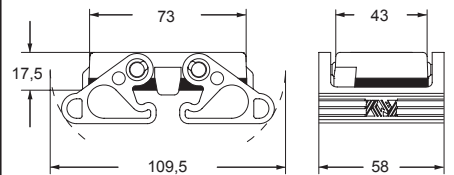
MFVN G32



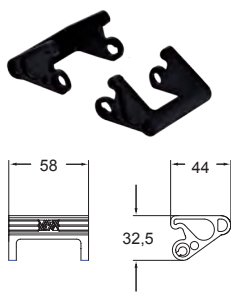
CHCN



CHCN G



CR LN
Spare part lever for "57.27" enclosures with levers

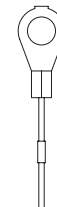


CRUS Type 4/4X/12



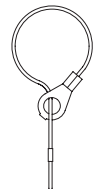
For fixing on housings

eyelet



For fixing on hoods

loop



CH..N - MA..N and MH..N - MF..N LS-TYPE version

inserts		page:
CD	40 poles + ⊕	70
CDD	72 poles + ⊕	79
CDS	27 poles + ⊕	-
CDSH	27 poles + ⊕	88
CNE	16 poles + ⊕	112
CSE	16 poles + ⊕	-
CSH	16 poles + ⊕	112
CSH S	16 poles + ⊕	124
CCE	16 poles + ⊕	132
CMSH, CMCE	6+2 (aux) poles + ⊕	138 - 139
CSS	16 poles + ⊕	150
CT, CTS (10A) *)	40 poles + ⊕	156
CT, CTSE (16A) *)	16 poles + ⊕	162
CQE	32 poles + ⊕	170
CQEE	40 poles + ⊕	176
CP	6 poles + ⊕	178
CX	6/12, 6/36 and 12/2 poles + ⊕	197 - 199
CX	4/0 and 4/2 poles + ⊕	200 - 201
MIXO	4 modules	262 - 317

*) only in the CHIN 16 CH and CHIN 16 enclosure

housings with 4 pegs and 2 levers



hoods with 4 pegs

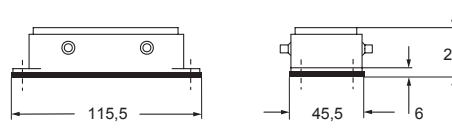


description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 4 pegs	CHIN 16 CH			
bulkhead mounting housing, with 2 levers	CHIN 16			
surface mounting housing, high construction, with 2 levers	MAPN 16.32	32		
with pegs, side entry			MHON 16.32	32
with pegs, top entry			MHVN 16.32	32
with pegs, side entry, high construction, without adapter ¹⁾			MFON 16.32	32
with pegs, top entry, high construction, without adapter ¹⁾			MFVN 16.32	32

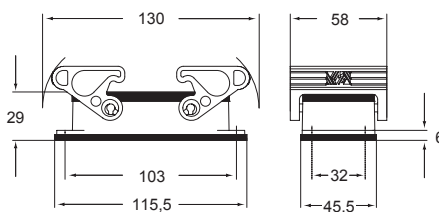
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

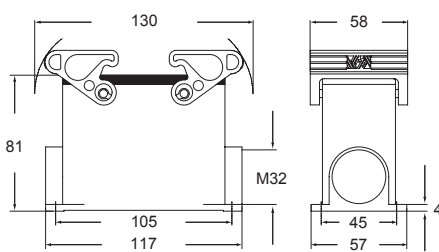
CHIN CH



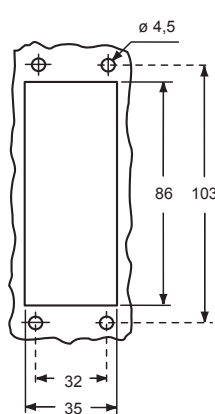
CHIN



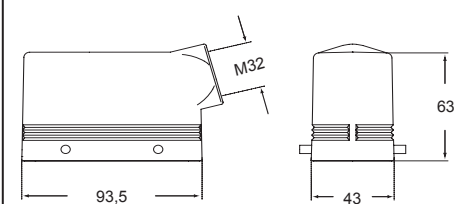
MAPN



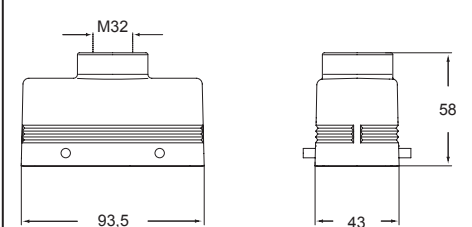
panel cut-out for bulkhead mounting housings
CHIN CH and CHIN



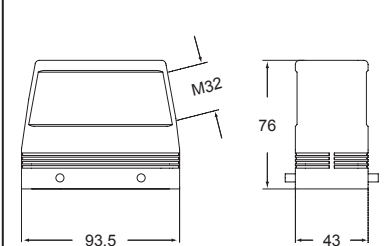
MHON



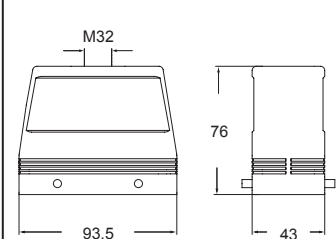
MHVN



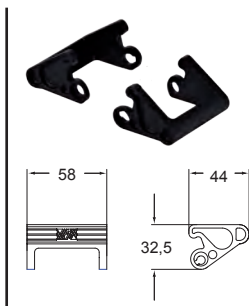
MFON



MFVN



CR LN
Spare part lever
for "77.27"
enclosures
with levers



CAUS Type 4/4X/12



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CSE	16 poles + ⊕	-
CSH	16 poles + ⊕	112
CSH S	16 poles + ⊕	124
CCE	16 poles + ⊕	132
CMSH, CMCE	6+2 (aux) poles + ⊕	138 - 139
CSS	16 poles + ⊕	150
CQE	32 poles + ⊕	170
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CP	6 poles + ⊕	178
CX	6/12, 6/36 and 12/2 poles + ⊕	197 - 199
CX	4/0 and 4/2 poles + ⊕	200 - 201
MIXO	4 modules	262 - 317

hoods with 2 levers



covers



description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
-------------	----------	---------	------------------------	----------------------

with levers and gasket, top entry	MHVN 16 G32	32		
with levers and gasket, top entry, high construction, without adapter ¹⁾	MFVN 16 G225	25 x 2		
with levers and gasket, top entry, high construction, without adapter ¹⁾	MFVN 16 G32	32		

covers with pegs
covers with 2 levers

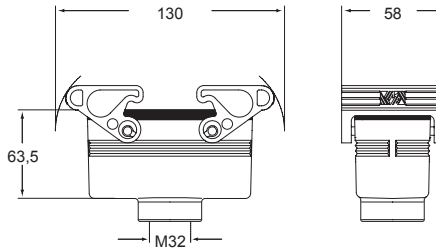
CHCN 16

CHCN 16 G

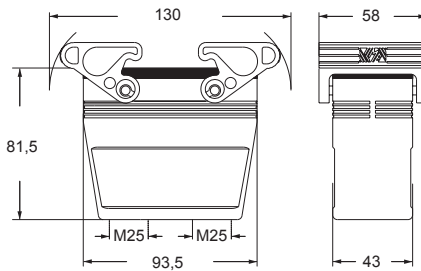
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

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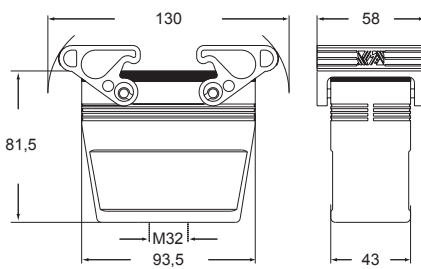
MHVN G32



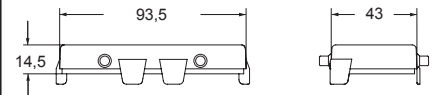
MFVN 16 G225



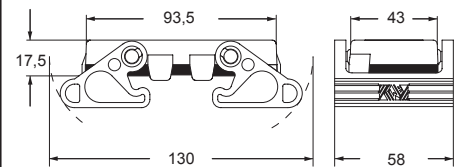
MFVN G32



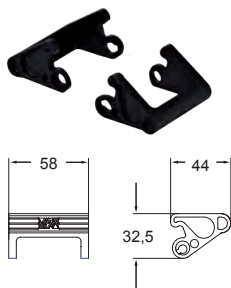
CHCN



CHCN G



CR LN
Spare part lever for "77.27" enclosures with levers

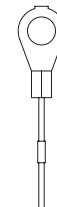


CRUS Type 4/4X/12



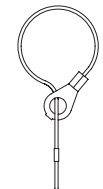
For fixing on housings

eyelet



For fixing on hoods

loop



CH..N - MA..N and MH..N - MF..N LS-TYPE version

inserts		page:
CD	64 poles + ⊕	72
CDD	108 poles + ⊕	81
CDS	42 poles + ⊕	-
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CNE	24 poles + ⊕	113
CSE	24 poles + ⊕	-
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CQE	46 poles + ⊕	171
CQEE	64 poles + ⊕	177
CX	4/8 and 6/6 poles + ⊕	204 and 206
MIXO	6 modules	262 - 317

*) only in the CHIN 24 CH and CHIN 24 enclosure

housings with 4 pegs and 2 levers



hoods with 4 pegs

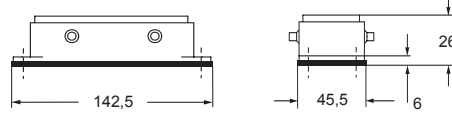


description	part No.	entry M	part No.	entry M
bulkhead mounting housing, with 4 pegs	CHIN 24 CH			
bulkhead mounting housing, with 2 levers	CHIN 24			
surface mounting housing, high construction, with 2 levers	MAPN 24.32	32		
with pegs, side entry			MHON 24.32	32
with pegs, top entry			MHVN 24.32	32
with pegs, side entry, high construction, without adapter ¹⁾			MFON 24.32	32
with pegs, top entry, high construction, without adapter ¹⁾			MFVN 24.32	32

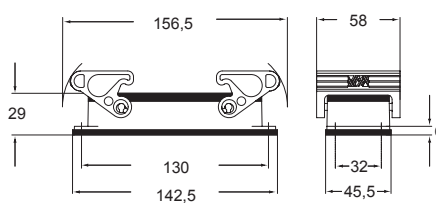
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

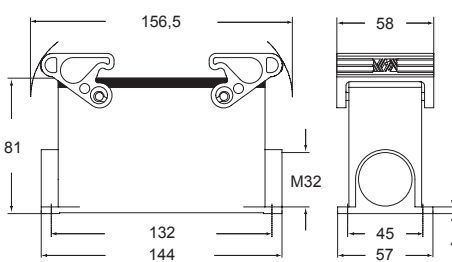
CHIN CH



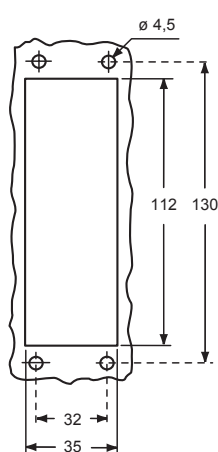
CHIN



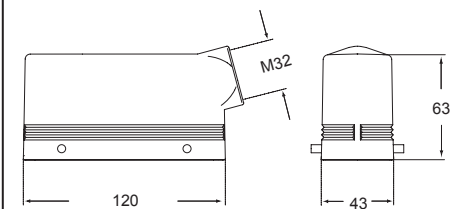
MAPN



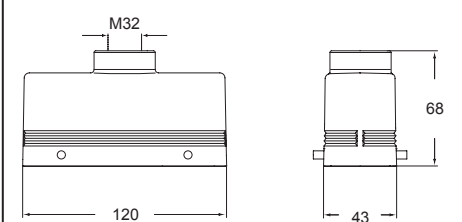
panel cut-out for bulkhead mounting housings CHIN CH and CHIN



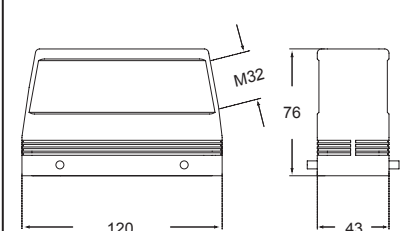
MHON



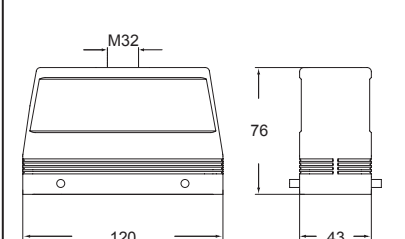
MHVN



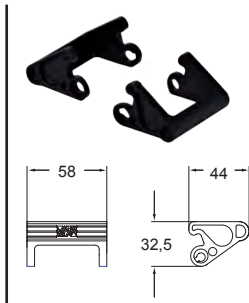
MFON



MFVN



CR LN
Spare part lever for "104.27" enclosures with levers



CAIUS Type 4/4X/12



CH..N and MH..N - MF..N LS-TYPE version

inserts		page:
CD	64 poles + ⊕	72
CDD	108 poles + ⊕	81
CDS	42 poles + ⊕	-
CDSH	42 poles + ⊕	89
CNE	24 poles + ⊕	113
CSE	24 poles + ⊕	-
CSH	24 poles + ⊕	113
CSH S	24 poles + ⊕	125
CCE	24 poles + ⊕	133
CMSH	10+2 (aux) poles + ⊕	140
CMCE	10+2 (aux) poles + ⊕	141
CSS	24 poles + ⊕	151
CQE	46 poles + ⊕	171
CQEE	64 poles + ⊕	177
CX	4/8 and 6/6 poles + ⊕	204 and 206
MIXO	6 modules	262 - 317

hoods with 2 levers



covers



description	part No.	entry M	part No. (with eyelet)	part No. (with loop)
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with levers and gasket, top entry	MHVN 24 G32	32		
with levers and gasket, top entry, high construction, without adapter ¹⁾	MFVN 24 G232	32 x 2		
with levers and gasket, top entry, high construction, without adapter ¹⁾	MFVN 24 G32	32		

covers with pegs
covers with 2 levers

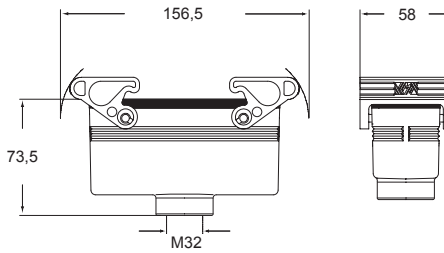
CHCN 24

CHCN 24 G

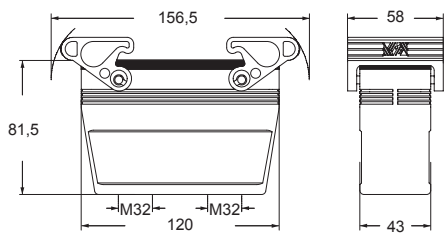
¹⁾ enclosure without adapter, threaded on the enclosure body, to be used only with a complete cable gland.

- kiln powder coating with RAL 9005 black epoxy polyester powder
- RAL 9005 black self-extinguishing thermoplastic locking lever

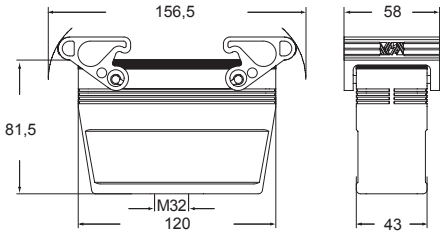
MHVN G32



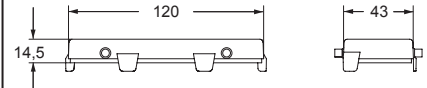
MFVN 24 G232



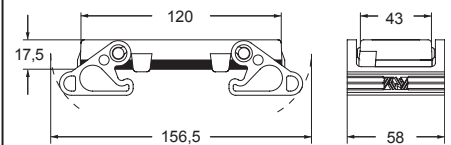
MFVN G32



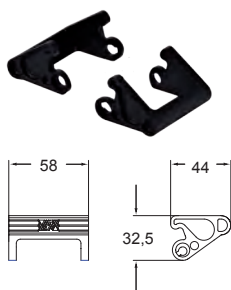
CHCN



CHCN G



CR LN
Spare part lever for "104.27" enclosures with levers

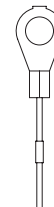


CAIUS Type 4/4X/12



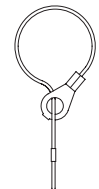
For fixing on housings

eyelet



For fixing on hoods

loop



CGK/MGK (“21.21”) series and CG/MG (“44.27”, “57.27”, “77.27”, “104.27”) series

CGK/MGK and CG/MG series of free and fixed enclosures (hoods and housings) for heavy-duty rectangular connectors combine water tightness to **IP68** according EN IEC 60529, the “versatile” complete IP degree of protection of these enclosures being currently IP66/IP68/IP69, high mechanical sturdiness and enhanced immunity to electromagnetic disturbances and shielding of the surrounding against emission (EMC features).

The enclosures ensure the highest degree of protection from external interferences; more specifically, they protect people from accessing the hazardous components housed inside the enclosures (protection against shock by direct contact) and they protect the internal connector inserts from the ingress of foreign matters (dust tightness) and from the harmful effects of ingress of fluids (water tightness).

The water tightness between the bulkhead-mounting housings and the panel is ensured by an O-ring seal held in position in a slot within the bulkhead-mounting housing base.

A second O-ring seal fitted around the mating edges of the enclosure ensures the water tightness between the free and the fixed enclosure when the connector is mated and locked.

To ensure the water tightness when the enclosure is fitted onto a cabinet panel, the optional mounting frame with four M6 threaded blind holes may need to be installed inside the panel.

The fastening screws must be fitted inside the enclosure and, through the fastening holes to be drilled on the panel, must be tightened onto the M6 mounting frame internal thread instead of the usual fastening nuts. The bulkhead-mounting fixed enclosure fastening holes have been drilled within the perimeter of the O-ring seal, in order to avoid having to use further seals.

Although these enclosures are larger than the standard enclosures, to leave more space for the cables, and the walls are thicker to achieve more mechanical robustness, the fixing points have remained the same as those of the standard enclosures. The series is offered with two types of locking systems: **bayonet** and **screw**.

The two closing points are located in asymmetrical positions on the short side of the housing so as to ensure an optimal water tightness while keeping the lowest footprint to allow more compactness in case of multiple enclosures placed one close to the other on the short side. The locking means of both versions are made of high quality stainless steel and are firmly fastened inside the free enclosure. These locking means can be fitted and removed by using either a 1,5 mm flat blade screwdriver or a 10 mm hexagonal key. The fixed and free enclosures of series CG/MG are made of foundry grade aluminium alloy, particularly resistant to seawater corrosion.

Series CGK/MGK enclosures are made of zinc alloy. The finish of CG/MG series is made from epoxy powder, which gives the enclosures high scratch and shock resistant properties as well as good chemical resistance.

The finish of CGK/MGK series (size “21.21”) is made by black chrome plating RoHS 2 conform.

The metal covers are made with the same quality materials as the enclosures, and are fitted with a short cord to make it always retrievable.

Scope of application

External interconnections in vehicles, in harsh environments and in humid areas and with sensitive interconnections requiring shielding from electromagnetic interference.

They are particularly suitable for the applications in the railway industry and any application requiring high resistance to pressure, impact and corrosion, with IP66/**IP68**/IP69 protection rating.

They also ensure a good shielding for electromagnetic compatibility.

The IP68 degree of protection marked or assigned to the enclosure is ensured if the enclosures are correctly installed and the cable entry devices have equal or higher IP rating.

Degree of protection compliant with EN IEC 60529

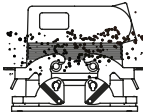
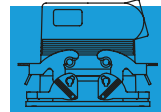
When mated and locked, the CGK/MGK (“21.21”) and the CG/MG enclosures protect the connector inserts fitted inside from outside interference, such as mechanical shocks, foreign bodies, humidity, dust, water or other fluids such as cleaning or cooling agents, oils, etc.

The IP68 degree of protection ensured by the enclosures is fully described in the EN IEC 60529 standard, which classifies the enclosures according to their protection against the entry of foreign bodies and water.

IP68 = Total protection against dust, and against the access to hazardous parts with access probe of Ø 1,0 mm (1st characteristic numeral), and protection against the effects of continuous submersion in water (duration ≥ 30 min upon agreement and water depth ≥ 1 m upon agreement) (2nd characteristic numeral).

These enclosures have also successfully passed the tests required for the **IPX6** degree of protection (tightness to powerful water jets) and for the **IPX9** degree of protection (high pressure and temperature water jets) according to EN IEC 60529. Their full “versatile” degree of protection is therefore **IP66/IP68/IP69**.

The following table shows only the IP 68 level of protection. Please see page 46 for the complete table of the different levels of protection specified by the IP standard.

FIRST Index figure	Degree of protection SOLIDS		SECOND Index figure	Degree of protection WATER	
6		Protected against access to hazardous parts with a wire dust-tight (total protection against dust)	8		Protected against the effects of continuous immersion in water at depth and/or duration upon agreement.