ZUCCHINI

High Power

SCP - HR - EdM

CATALOGUE 08/09

ZHP08C/GB

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HIGH POWER
General contents

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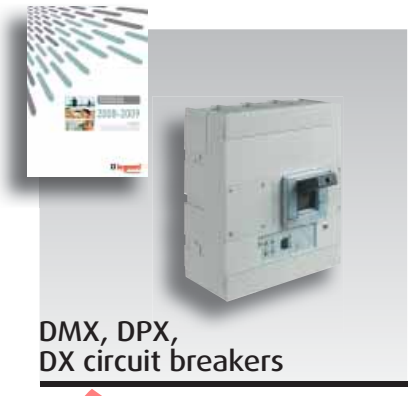

DMX, DPX,
DX circuit breakers

legrand

XL³ distribution cabinets

legrand

Zucchini busbars

ZUCCHINI

EdM
cast resin transformers

In a context of accelerated globalization and increasingly complex projects, the support of a reliable and competent partner is absolutely essential, a real key to the success of your company.
Choosing the Legrand Group means the assurance of benefiting from global expertise throughout the world thanks to its strong local presence.
A vast choice of carefully styled products compose solutions which in turn form coherent systems incorporating the latest technological innovations.
Choosing Legrand also means you are sure to be assisted by professionals at your service any time, from your project's design through to its completion.

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SIMPLICITY

Easy and fast to install

The HP range has been designed to simplify the installation, making it safe and quick.
In order to determine the installation time properly, it is necessary to consider all the required operations which, when comparing a busbar solution and a cable solution, are sometimes neglected.

Planning simplicity

The intrinsic characteristic of the busbars simplifies planning activities, which are not possible when using cables.
The design of a cable installation requires special attention, unlike a busbar system, because it is characterized a wiring installation in series, and thus not easily adjustable to design and installation variables.

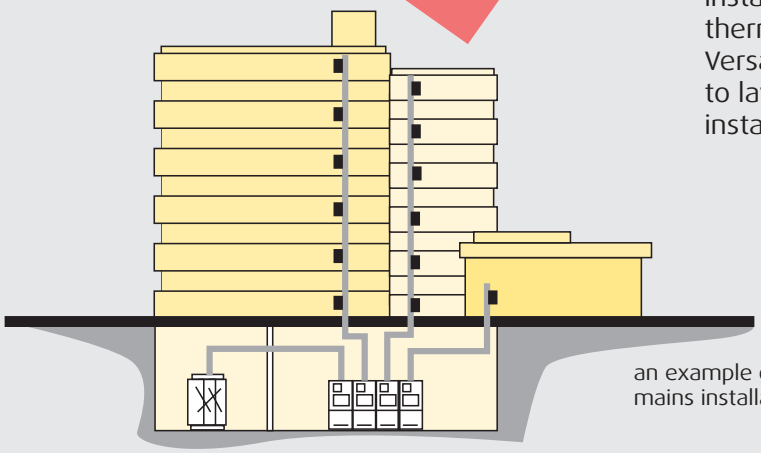
FLEXIBILITY

High performance in small spaces

High power with minimum overall dimensions is the strong point of the Zucchini High Power range.
Even in small spaces, busbar trunking systems allow for any type of installation solution; also cast resin transformers do not require additional masonry structures.
The HP range gives you all the necessary elements for a quick, efficient and safe installation.

Versatility

The HP range is the ideal solution for all needs; it gives you the maximum versatility for any type of power application and in any environment. Busbar trunking systems and cast resin transformers are equipped with all the accessories necessary for creating installations in riser mains, even in seismic areas.
The high quality standard of all Zucchini insulating components are suitable for being installed in environments subject to high thermal stress.
Versatility also means immediately adapting to layout modifications or expansions of the installation environment.



an example of a rising mains installation.

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SECTION CONTENTS

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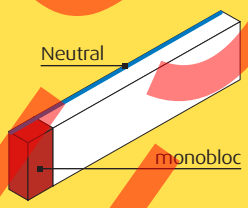
SCP Features

SAFETY
The best protection for your system

FLEXIBILITY
Adapts to all present and future needs

SIMPLICITY
A solution for everyone

Notes:
The product versions in the whole catalogue will be simplified as shown opposite, highlighting the part with the monobloc installed in red and the neutral side in blue.



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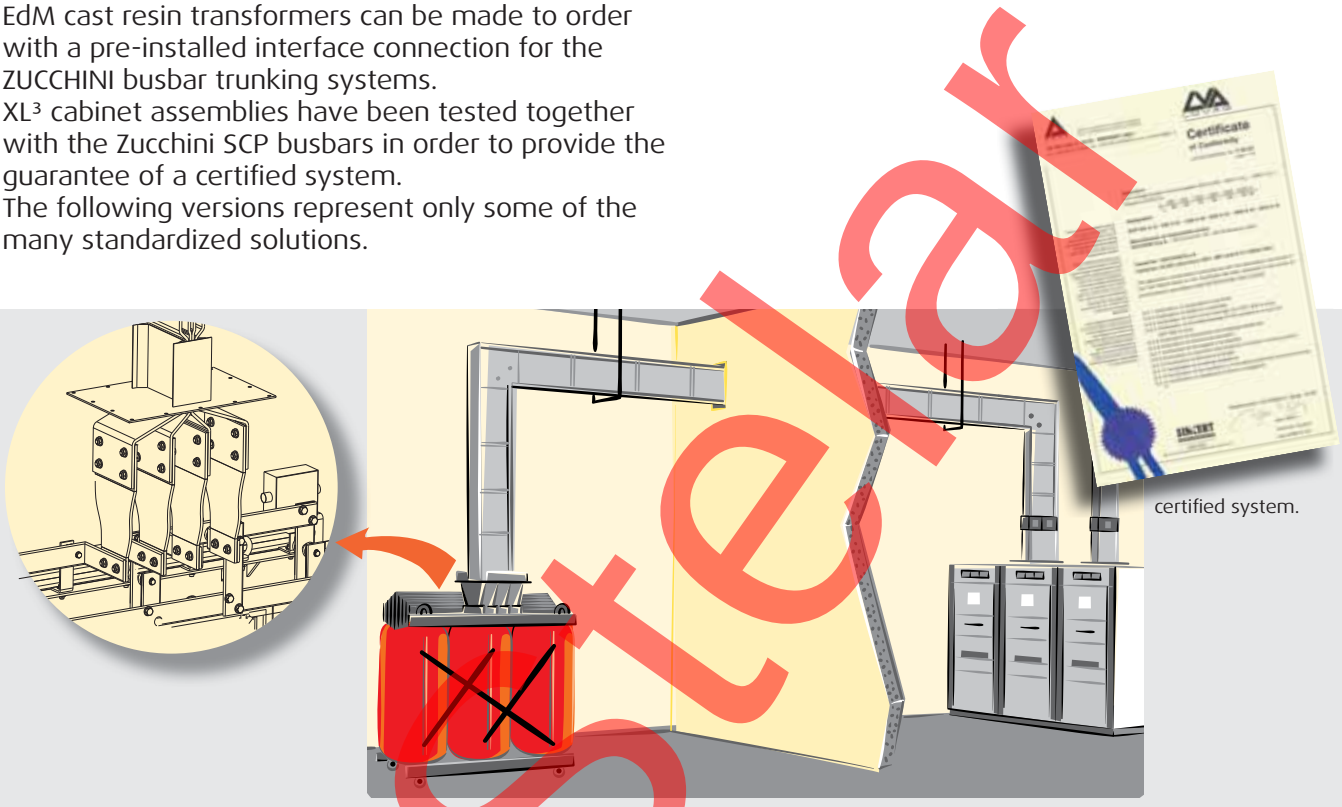
Zucchini - Legrand – EdM system concept

Group synergy allows for immediate integration between **ZUCCHINI busbar trunking systems**, **EdM** cast **resin transformers and Legrand XL³ cabinets**.
EdM cast resin transformers can be made to order with a pre-installed interface connection for the ZUCCHINI busbar trunking systems.
XL³ cabinet assemblies have been tested together with the Zucchini SCP busbars in order to provide the guarantee of a certified system.
The following versions represent only some of the many standardized solutions.



certified system.

Transformer				Aluminium busbar	
kVA (kVA)	Insulation class (kV)	400 V current (A)	I_k 6% (kA)	Family	Connection component
630	12 - 17.5 - 24 - 36	910	15.2	SCP 1000 A Al	**60281012P**
800		1155	19.5	SCP 1250 A Al	**60281014P**
1000		1443	24.1	SCP 1600 A Al	**60281016P**
1250		1804	30.1	SCP 2000 A Al	**60281017P**
1600		2310	38.5	SCP 2500 A Al	**60391014P**
2000		2887	48.2	SCP 3200 A Al	**60391016P**
2500		3608	60.2	SCP 4000 A Al	**60391017P**

Transformer				Copper busbar	
kVA (kVA)	Insulation class (kV)	400 V current (A)	I_k 6% (kA)	Family	Connection component
630	12 - 17.5 - 24 - 36	910	15.2	SCP 1000 A Cu	**65281011P**
800		1155	19.5	SCP 1250 A Cu	**65281013P**
1000		1443	24.1	SCP 1600 A Cu	**65281015P**
1250		1804	30.1	SCP 2000 A Cu	**65281016P**
1600		2310	38.5	SCP 2500 A Cu	**65281018P**
2000		2887	48.2	SCP 3200 A Cu	**65391015P**
2500		3608	60.2	SCP 4000 A Cu	**65391016P**
3150		4552	65.0 (I_k 7%)	SCP 5000 A Cu	**65391018P**

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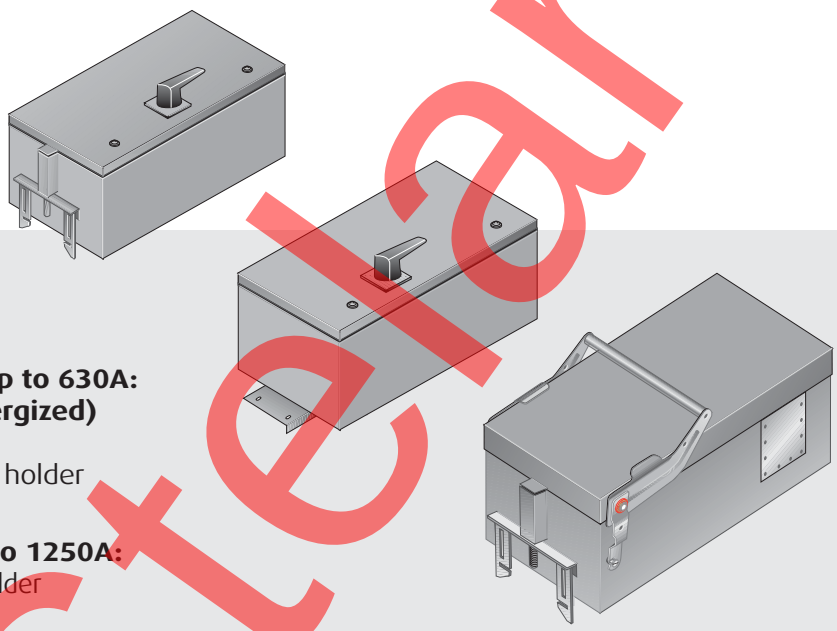


Tap-off boxes:

Elements used for connecting and energizing electric loads.

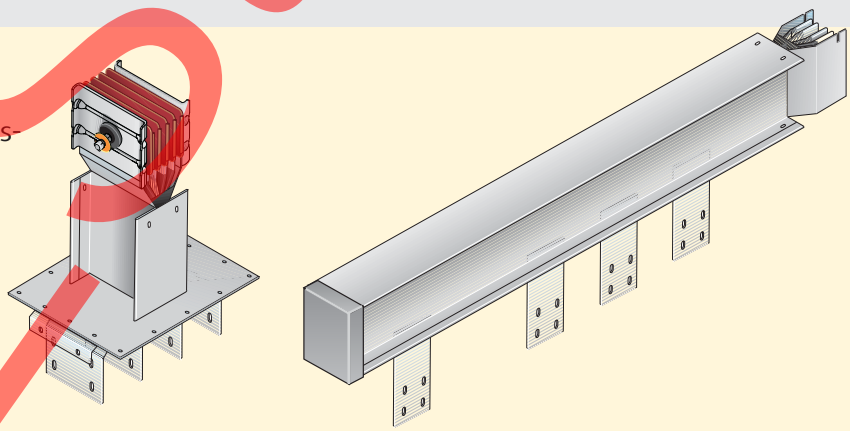
Plug-in tap-off boxes from 63A up to 630A: (can be installed with busbar energized)
- with 3P fuse holders
- with switch disconnector and fuse holder
- for DPX circuit breakers

Bolted tap-off boxes from 125A to 1250A:
- with switch disconnector and fuse holder
- for DPX circuit breakers

Connection interfaces:

Elements used for connecting the busbar to the cabinet or transformer.

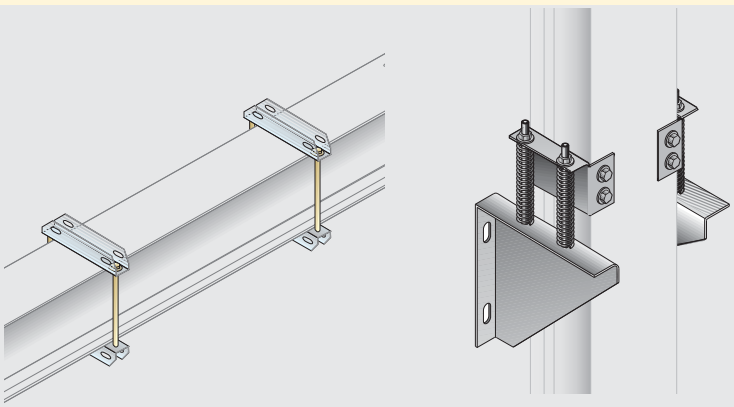
Solutions for Legrand XL³ cabinets and EdM cast resin transformers
Universal solutions



Fixing supports:

Elements used for fixing the busbar to the structure of the building.

Options for horizontal installations
Options for vertical installations
Options for special applications (seismic areas, naval environment)



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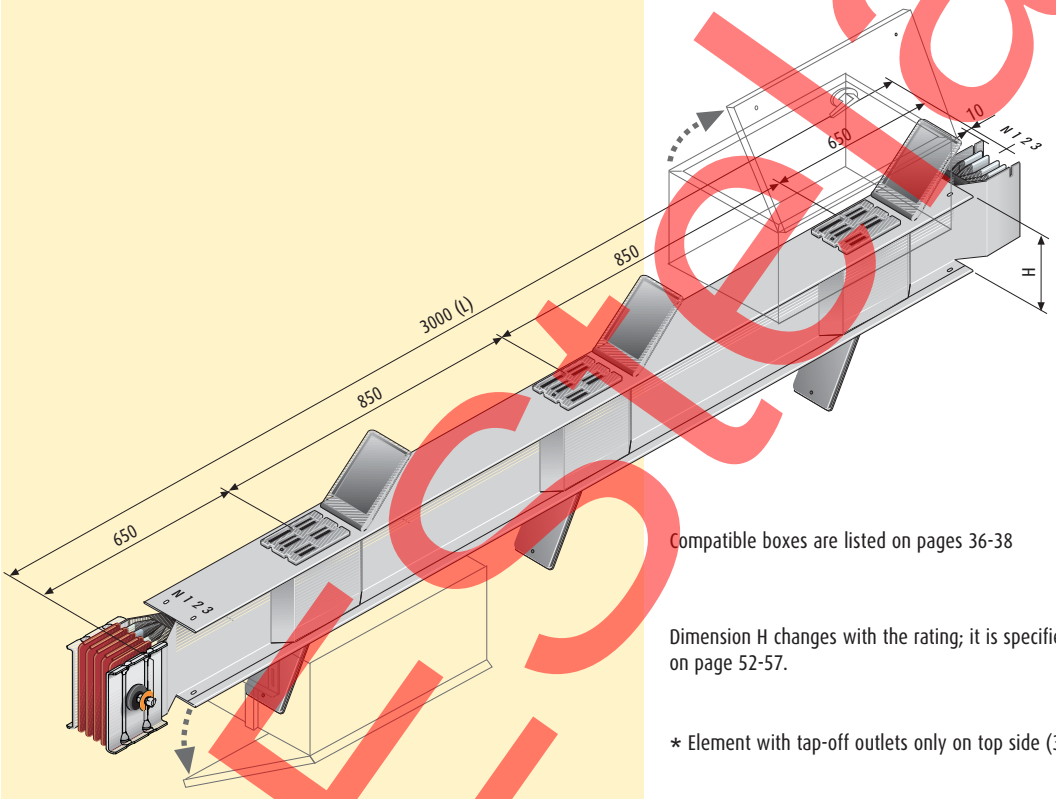
Distribution elements

ELEMENTS FOR PLUG-IN TYPE TAP-OFF BOXES - STANDARD 3000MM

Tap-off outlets on both sides

Aluminium	No. of outlets	630A*	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
L = 3000 mm	3+3	**60280130P**	**60280131P**	**60280132P**	**60280134P**	**60280136P**	**60280137P**	**60390134P**	**60390136P**	**60390137P**
L = 2000 mm	2+2	**60280260P**	**60280261P**	**60280262P**	**60280264P**	**60280266P**	**60280267P**	**60390264P**	**60390266P**	**60390267P**
L = 1000 mm	1+1	**60280280P**	**60280281P**	**60280282P**	**60280284P**	**60280286P**	**60280287P**	**60390284P**	**60390286P**	**60390287P**
							single bar	double bar		

Copper	No. of outlets	800A*	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000
L = 3000 mm	3+3	**65280130P**	**65280131P**	**65280133P**	**65280135P**	**65280136P**	**65280138P**	**65390135P**	**65390136P**	**65390138P**
L = 2000 mm	2+2	**65280260P**	**65280261P**	**65280263P**	**65280265P**	**65280266P**	**65280268P**	**65390265P**	**65390266P**	**65390268P**
L = 1000 mm	1+1	**65280280P**	**65280281P**	**65280283P**	**65280285P**	**65280286P**	**65280288P**	**65390285P**	**65390286P**	**65390288P**
							single bar	double bar		

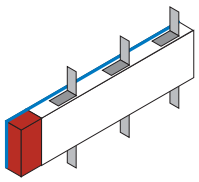


Compatible boxes are listed on pages 36-38

Dimension H changes with the rating; it is specified in the specifications on page 52-57.

* Element with tap-off outlets only on top side (3+0)

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	630A to 4000A
Copper	800A to 5000A
(L) min/MAX [mm]	**1000/3000**



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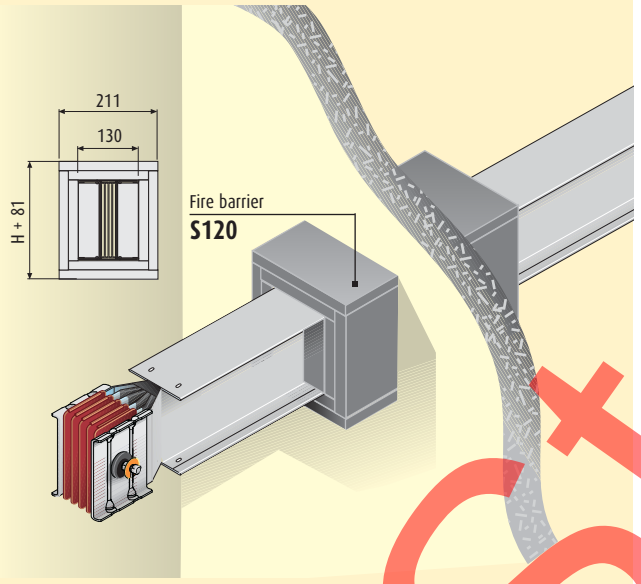
Fire barriers

FIRE BARRIER S120 (EN 1366-3, DIN 4102-09)

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
internal	**653IFB01**	-	-	-	-	-	**653IFB01**	**653IFB01**	**653IFB01**
external	**652EFB01**	**652EFB01**	**652EFB01**	**652EFB01**	**652EFB02**	**652EFB03**	**653EFB02**	**653EFB03**	**653EFB04**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
internal	**653IFB01**	-	-	-	-	-	**653IFB01**	**653IFB01**	**653IFB01**
external	**652EFB01**	**652EFB01**	**652EFB01**	**652EFB02**	**652EFB02**	**652EFB03**	**653EFB02**	**653EFB03**	**653EFB04**
						single bar	double bar		



Dimension H changes with the rating; it is specified in the specifications on page 52-57.

When ordering, specify the element that will be equipped with an internal fire barrier.
Due to the geometry of the models 800A to 2000A in aluminium and 1000A to 2500A in copper, the internal fire barrier is not needed. The external fire barrier can be used on any trunking component in compliance with the operating instructions specified in figures 1 and 2.

Figure 1

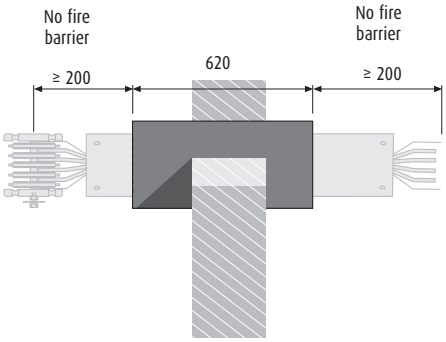
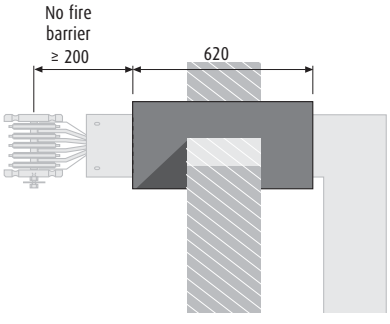


Figure 2



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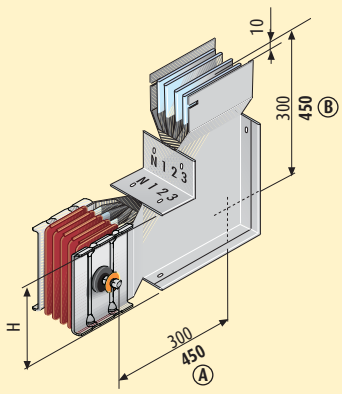
Direction changes

VERTICAL ELBOW

Aluminium		630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 2	Standard RH	**60280400P**	**60280401P**	**60280402P**	**60280404P**	**60280406P**	**60280407P**	**60390404P**	**60390406P**	**60390407P**
Type 1	Standard LH	**60280410P**	**60280411P**	**60280412P**	**60280414P**	**60280416P**	**60280417P**	**60390414P**	**60390416P**	**60390417P**
Type 2	Special RH	**60280420P**	**60280421P**	**60280422P**	**60280424P**	**60280426P**	**60280427P**	**60390424P**	**60390426P**	**60390427P**
Type 1	Special LH	**60280430P**	**60280431P**	**60280432P**	**60280434P**	**60280436P**	**60280437P**	**60390434P**	**60390436P**	**60390437P**
							single bar	double bar		

Copper		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 2	Standard RH	**65280400P**	**65280401P**	**65280403P**	**65280405P**	**65280406P**	**65280408P**	**65390405P**	**65390406P**	**65390408P**
Type 1	Standard LH	**65280410P**	**65280411P**	**65280413P**	**65280415P**	**65280416P**	**65280418P**	**65390415P**	**65390416P**	**65390418P**
Type 2	Special RH	**65280420P**	**65280421P**	**65280423P**	**65280425P**	**65280426P**	**65280428P**	**65390425P**	**65390426P**	**65390428P**
Type 1	Special LH	**65280430P**	**65280431P**	**65280433P**	**65280435P**	**65280436P**	**65280438P**	**65390435P**	**65390436P**	**65390438P**
							single bar	double bar		



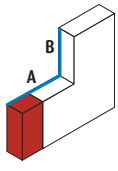
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

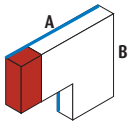
The word "special" is referred to an element with measurements that are different from those shown in the figure, yet included between the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR	
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**300/1299**
(B) min/MAX [mm]	**300/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**450/1449**



Type 1



Type 2

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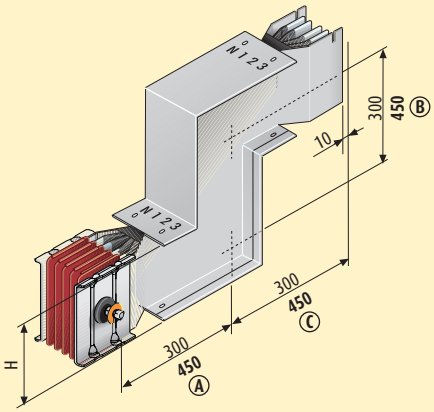
Direction changes

DOUBLE VERTICAL ELBOW

Aluminium		630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 2	Right	**60280440P**	**60280441P**	**60280442P**	**60280444P**	**60280446P**	**60280447P**	**60390444P**	**60390446P**	**60390447P**
Type 1	Left	**60280450P**	**60280451P**	**60280452P**	**60280454P**	**60280456P**	**60280457P**	**60390454P**	**60390456P**	**60390457P**
							single bar	double bar		

Copper		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 2	Right	**65280440P**	**65280441P**	**65280443P**	**65280445P**	**65280446P**	**65280448P**	**65390445P**	**65390446P**	**65390448P**
Type 1	Left	**65280450P**	**65280451P**	**65280453P**	**65280455P**	**65280456P**	**65280458P**	**65390455P**	**65390456P**	**65390458P**
							single bar	double bar		



Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

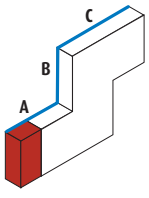
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

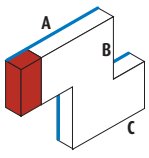
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**300/1299**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**300/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**450/1449**



Type 1



Type 2

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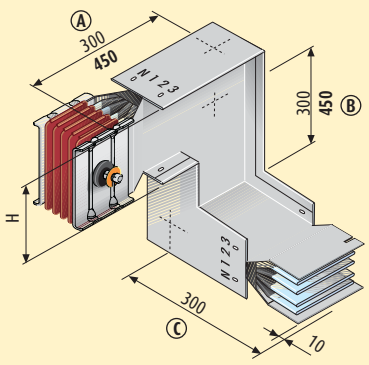
Direction changes

DOUBLE ELBOW VERTICAL+HORIZONTAL

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60280500P**	**60280501P**	**60280502P**	**60280504P**	**60280506P**	**60280507P**	**60390504P**	**60390506P**	**60390507P**
Type 2	**60280510P**	**60280511P**	**60280512P**	**60280514P**	**60280516P**	**60280517P**	**60390514P**	**60390516P**	**60390517P**
Type 3	**60280520P**	**60280521P**	**60280522P**	**60280524P**	**60280526P**	**60280527P**	**60390524P**	**60390526P**	**60390527P**
Type 4	**60280530P**	**60280531P**	**60280532P**	**60280534P**	**60280536P**	**60280537P**	**60390534P**	**60390536P**	**60390537P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65280500P**	**65280501P**	**65280503P**	**65280505P**	**65280506P**	**65280508P**	**65390505P**	**65390506P**	**65390508P**
Type 2	**65280510P**	**65280511P**	**65280513P**	**65280515P**	**65280516P**	**65280518P**	**65390515P**	**65390516P**	**65390518P**
Type 3	**65280520P**	**65280521P**	**65280523P**	**65280525P**	**65280526P**	**65280528P**	**65390525P**	**65390526P**	**65390528P**
Type 4	**65280530P**	**65280531P**	**65280533P**	**65280535P**	**65280536P**	**65280538P**	**65390535P**	**65390536P**	**65390538P**
						single bar	double bar		



Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

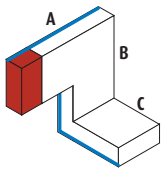
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

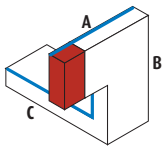
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**300/1299**
(B) min/MAX [mm]	**200 - 599**
(C) min/MAX [mm]	**250/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

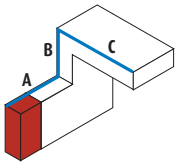
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**330 - 749**
(C) min/MAX [mm]	**250/1449**



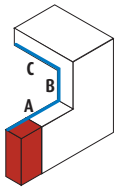
Type 1



Type 2



Type 3



Type 4

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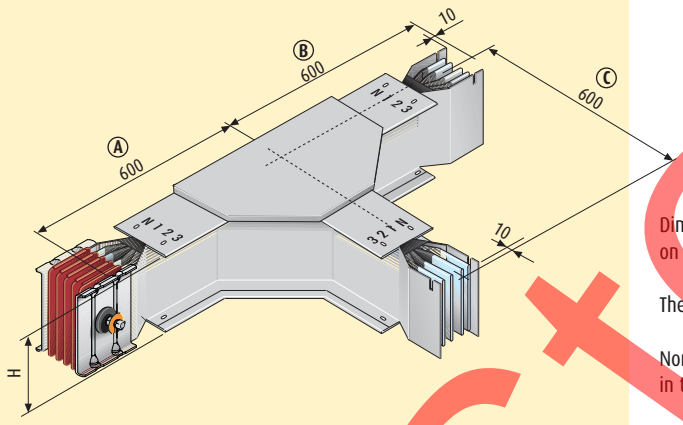
Direction changes

HORIZONTAL "T"

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60280700P**	**60280701P**	**60280702P**	**60280704P**	**60280706P**	**60280707P**	**60390704P**	**60390706P**	**60390707P**
Type 2	**60280710P**	**60280711P**	**60280712P**	**60280714P**	**60280716P**	**60280717P**	**60390714P**	**60390716P**	**60390717P**
Type 3	**60280720P**	**60280721P**	**60280722P**	**60280724P**	**60280726P**	**60280727P**	**60390724P**	**60390726P**	**60390727P**
Type 4	**60280730P**	**60280731P**	**60280732P**	**60280734P**	**60280736P**	**60280737P**	**60390734P**	**60390736P**	**60390737P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65280700P**	**65280701P**	**65280703P**	**65280705P**	**65280706P**	**65280708P**	**65390705P**	**65390706P**	**65390708P**
Type 2	**65280710P**	**65280711P**	**65280713P**	**65280715P**	**65280716P**	**65280718P**	**65390715P**	**65390716P**	**65390718P**
Type 3	**65280720P**	**65280721P**	**65280723P**	**65280725P**	**65280726P**	**65280728P**	**65390725P**	**65390726P**	**65390728P**
Type 4	**65280730P**	**65280731P**	**65280733P**	**65280735P**	**65280736P**	**65280738P**	**65390735P**	**65390736P**	**65390738P**
						single bar	double bar		



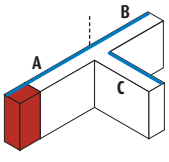
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.

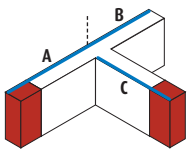
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR

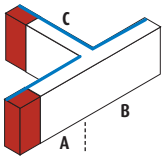
Aluminium	630A to 4000A
Copper	800A to 5000A
(A) min/MAX [mm]	**550/1049**
(B) min/MAX [mm]	**550/1049**
(C) min/MAX [mm]	**550/1049**



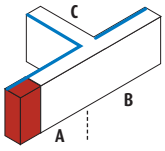
Type 1



Type 2



Type 3



Type 4

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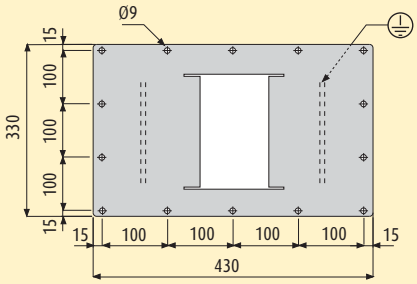
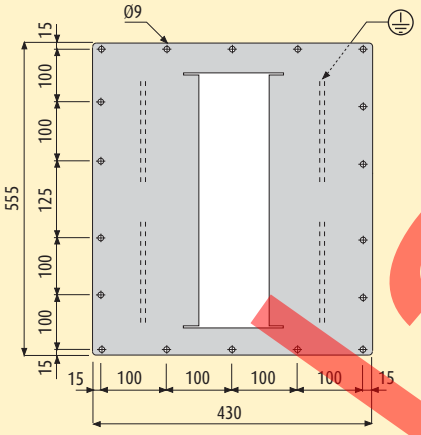
Connection interfaces

COVERPLATE DRILLING DETAILS (1)

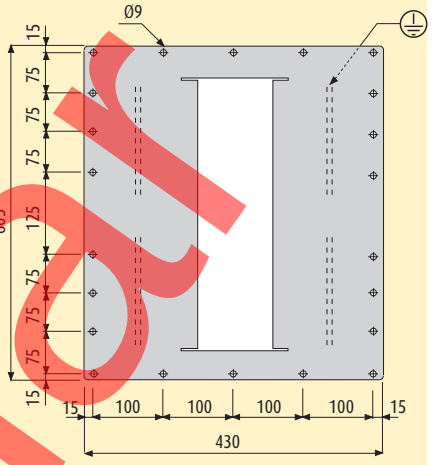
Aluminium 630A to 2000A
Copper 800A to 2500A



Aluminium 2500A to 3200A
Copper 3200A to 4000A

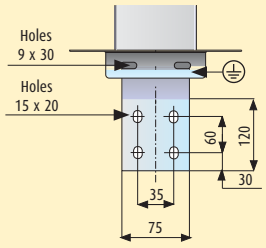


Aluminium 4000A
Copper 5000A

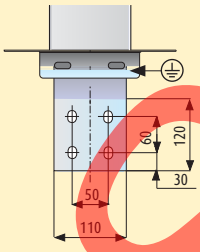


BAR DRILLING DETAILS (2)

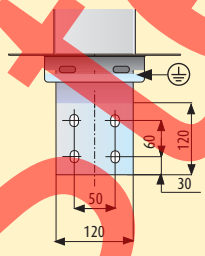
Al 630A
Cu 800A



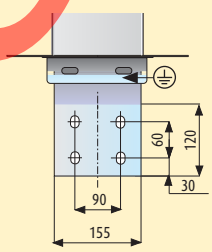
Al 800A-1000A
Cu 1000A-1250A



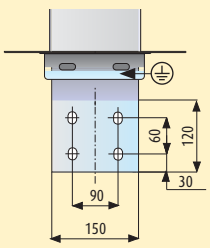
Al 1250A



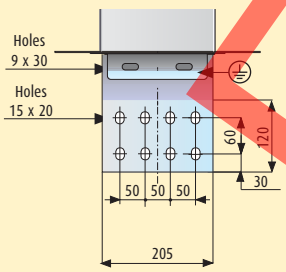
Al 1600A



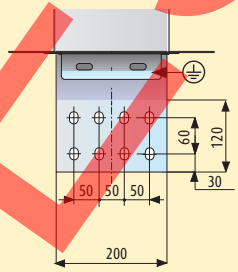
Cu 1600A



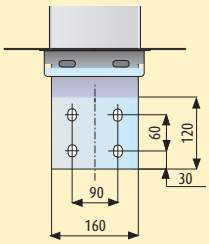
Al 2000A



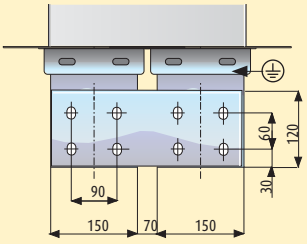
Cu 2500A



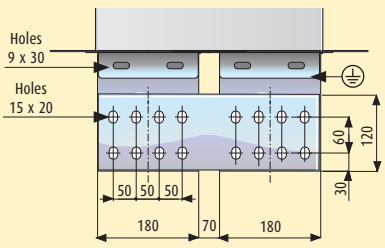
Cu 2000A



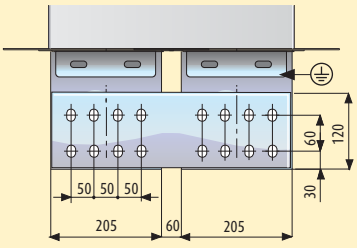
Al 2500A
Cu 3200A



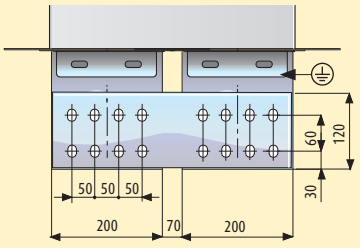
Al 3200A
Cu 4000A



Al 4000A



Cu 5000A



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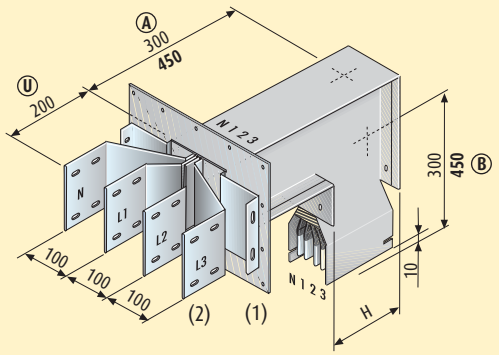
Connection interfaces

CONNECTION INTERFACE + VERTICAL ELBOW

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60281400P**	**60281401P**	**60281402P**	**60281404P**	**60281406P**	**60281407P**	**60391404P**	**60391406P**	**60391407P**
Type 2	**60281410P**	**60281411P**	**60281412P**	**60281414P**	**60281416P**	**60281417P**	**60391414P**	**60391416P**	**60391417P**
Type 3	**60281420P**	**60281421P**	**60281422P**	**60281424P**	**60281426P**	**60281427P**	**60391424P**	**60391426P**	**60391427P**
Type 4	**60281430P**	**60281431P**	**60281432P**	**60281434P**	**60281436P**	**60281437P**	**60391434P**	**60391436P**	**60391437P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65281400P**	**65281401P**	**65281403P**	**65281405P**	**65281406P**	**65281408P**	**65391405P**	**65391406P**	**65391408P**
Type 2	**65281410P**	**65281411P**	**65281413P**	**65281415P**	**65281416P**	**65281418P**	**65391415P**	**65391416P**	**65391418P**
Type 3	**65281420P**	**65281421P**	**65281423P**	**65281425P**	**65281426P**	**65281428P**	**65391425P**	**65391426P**	**65391428P**
Type 4	**65281430P**	**65281431P**	**65281433P**	**65281435P**	**65281436P**	**65281438P**	**65391435P**	**65391436P**	**65391438P**
						single bar	double bar		



Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

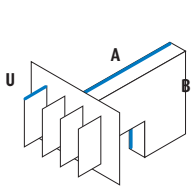
See page 25 for dimensions of coverplate (1) and bars (2).

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

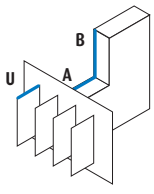
Aluminium	630A to 2000A
Copper	800A to 2500A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**300/1299**
(B) min/MAX [mm]	**300/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

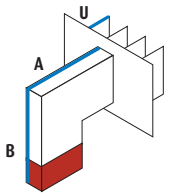
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**450/1449**



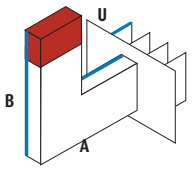
Type 1



Type 2



Type 3



Type 4

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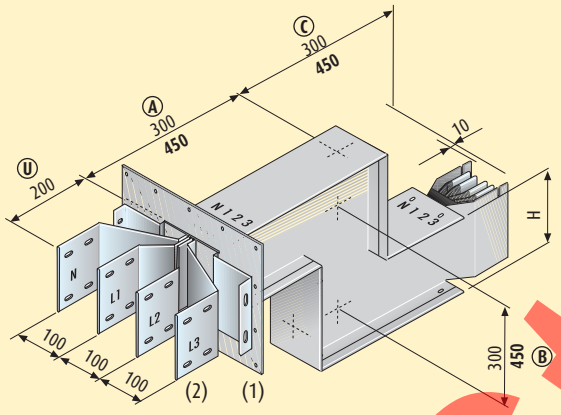
Connection interfaces

CONNECTION INTERFACE + DOUBLE VERTICAL ELBOW

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60281440P**	**60281441P**	**60281442P**	**60281444P**	**60281446P**	**60281447P**	**60391444P**	**60391446P**	**60391447P**
Type 2	**60281450P**	**60281451P**	**60281452P**	**60281454P**	**60281456P**	**60281457P**	**60391454P**	**60391456P**	**60391457P**
Type 3	**60281460P**	**60281461P**	**60281462P**	**60281464P**	**60281466P**	**60281467P**	**60391464P**	**60391466P**	**60391467P**
Type 4	**60281470P**	**60281471P**	**60281472P**	**60281474P**	**60281476P**	**60281477P**	**60391474P**	**60391476P**	**60391477P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65281440P**	**65281441P**	**65281443P**	**65281445P**	**65281446P**	**65281448P**	**65391445P**	**65391446P**	**65391448P**
Type 2	**65281450P**	**65281451P**	**65281453P**	**65281455P**	**65281456P**	**65281458P**	**65391455P**	**65391456P**	**65391458P**
Type 3	**65281460P**	**65281461P**	**65281463P**	**65281465P**	**65281466P**	**65281468P**	**65391465P**	**65391466P**	**65391468P**
Type 4	**65281470P**	**65281471P**	**65281473P**	**65281475P**	**65281476P**	**65281478P**	**65391475P**	**65391476P**	**65391478P**
						single bar	double bar		



Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

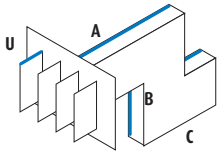
See page 25 for dimensions of coverplate (1) and bars (2).

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

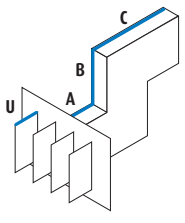
Aluminium	630A to 2000A
Copper	800A to 2500A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**200/1299**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**300/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

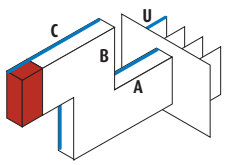
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**350/1449**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**450/1449**



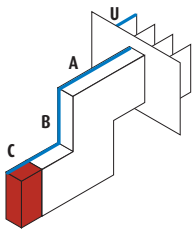
Type 1



Type 2



Type 3



Type 4

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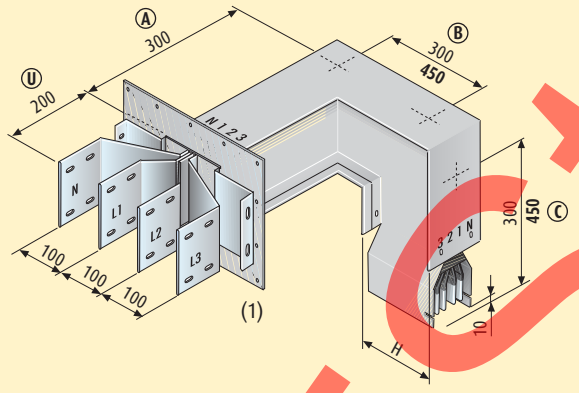
Connection interfaces

CONNECTION INTERFACE + HORIZONTAL ELBOW + VERTICAL ELBOW

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60281600P**	**60281601P**	**60281602P**	**60281604P**	**60281606P**	**60281607P**	**60391604P**	**60391606P**	**60391607P**
Type 2	**60281610P**	**60281611P**	**60281612P**	**60281614P**	**60281616P**	**60281617P**	**60391614P**	**60391616P**	**60391617P**
Type 3	**60281620P**	**60281621P**	**60281622P**	**60281624P**	**60281626P**	**60281627P**	**60391624P**	**60391626P**	**60391627P**
Type 4	**60281630P**	**60281631P**	**60281632P**	**60281634P**	**60281636P**	**60281637P**	**60391634P**	**60391636P**	**60391637P**
Type 5	**60281640P**	**60281641P**	**60281642P**	**60281644P**	**60281646P**	**60281647P**	**60391644P**	**60391646P**	**60391647P**
Type 6	**60281650P**	**60281651P**	**60281652P**	**60281654P**	**60281656P**	**60281657P**	**60391654P**	**60391656P**	**60391657P**
Type 7	**60281660P**	**60281661P**	**60281662P**	**60281664P**	**60281666P**	**60281667P**	**60391664P**	**60391666P**	**60391667P**
Type 8	**60281670P**	**60281671P**	**60281672P**	**60281674P**	**60281676P**	**60281677P**	**60391674P**	**60391676P**	**60391677P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65281600P**	**65281601P**	**65281603P**	**65281605P**	**65281606P**	**65281608P**	**65391605P**	**65391606P**	**65391608P**
Type 2	**65281610P**	**65281611P**	**65281613P**	**65281615P**	**65281616P**	**65281618P**	**65391615P**	**65391616P**	**65391618P**
Type 3	**65281620P**	**65281621P**	**65281623P**	**65281625P**	**65281626P**	**65281628P**	**65391625P**	**65391626P**	**65391628P**
Type 4	**65281630P**	**65281631P**	**65281633P**	**65281635P**	**65281636P**	**65281638P**	**65391635P**	**65391636P**	**65391638P**
Type 5	**65281640P**	**65281641P**	**65281643P**	**65281645P**	**65281646P**	**65281648P**	**65391645P**	**65391646P**	**65391648P**
Type 6	**65281650P**	**65281651P**	**65281653P**	**65281655P**	**65281656P**	**65281658P**	**65391655P**	**65391656P**	**65391658P**
Type 7	**65281660P**	**65281661P**	**65281663P**	**65281665P**	**65281666P**	**65281668P**	**65391665P**	**65391666P**	**65391668P**
Type 8	**65281670P**	**65281671P**	**65281673P**	**65281675P**	**65281676P**	**65281678P**	**65391675P**	**65391676P**	**65391678P**
						single bar	double bar		

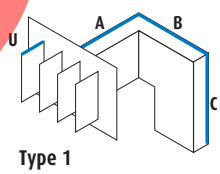


Dimension H changes with the rating; it is specified in the specifications on page 52-57.

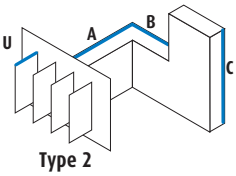
The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

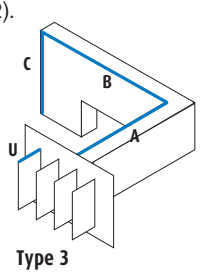
See page 25 for dimensions of coverplate (1) and bars (2).



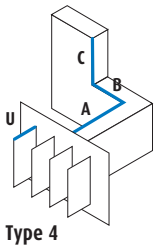
Type 1



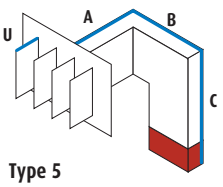
Type 2



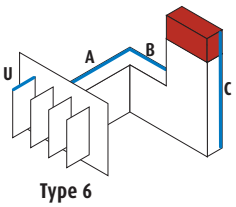
Type 3



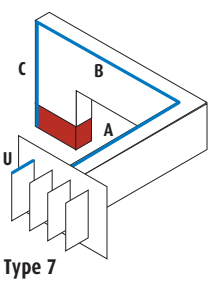
Type 4



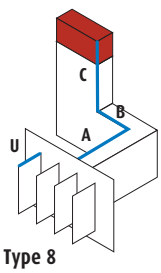
Type 5



Type 6



Type 7



Type 8

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

Aluminium	630A to 2000A
Copper	800A to 2500A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**100/1299**
(B) min/MAX [mm]	**200 - 599**
(C) min/MAX [mm]	**300/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**165/1449**
(B) min/MAX [mm]	**330 - 749**
(C) min/MAX [mm]	**450/1449**

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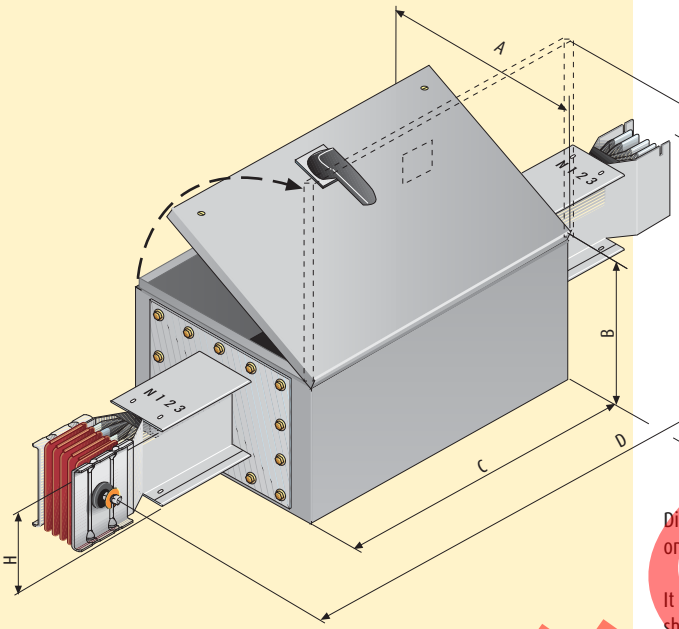
Complementary run components

RATE REDUCER WITH ISOLATOR SWITCH



Dimension H changes with the rating; it is specified in the specifications on page 52-57.

It is possible to have the opening of the box with a position different from that shown in the picture (different types indicated below).

The direction of the reducer must be specified when ordering.

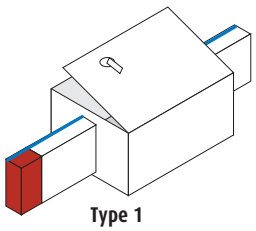
Please contact Zucchini for more details on the dimensions of the reducer.

Fuses not included. See Legrand catalogue.

The bolted boxes are to be installed when the busbar is disconnected and not energized.
For operating voltages (Ue) different from 400V, please contact Zucchini.

GENERAL DIMENSIONS OF THE DISCONNECTOR WITH REFERENCE TO THE RATING

Dimensions according to type 1	A	B	C	D	E
From 630A to 1250A (in mm)	**450**	**300**	**1050**	**1500**	**750**
From 1600A to 2500A (in mm)	**700**	**400**	**1300**	**2000**	**1100**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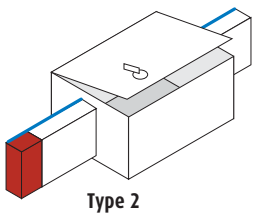
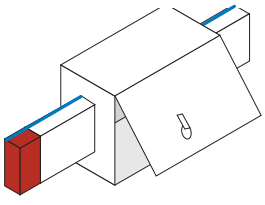
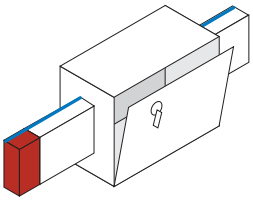

Type 2


Type 3


Type 4

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Bolt-on tap-off boxes

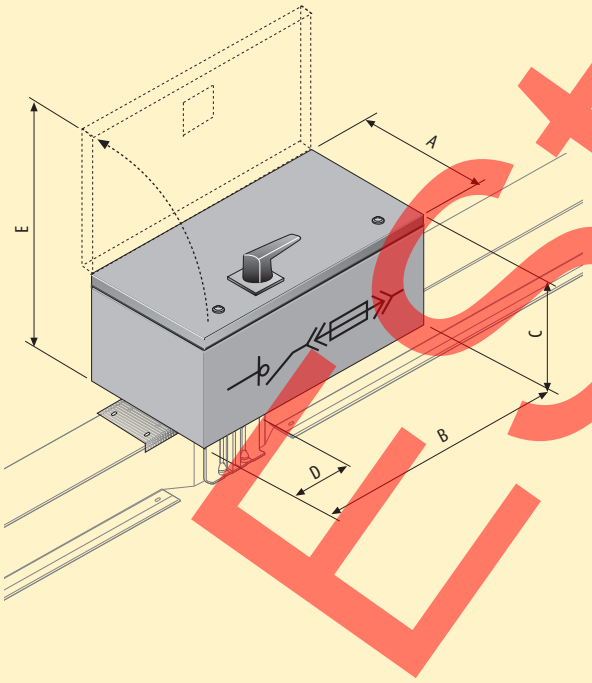
WITH AC23 SWITCH DISCONNECTOR AND FUSE CARRIER : 125A TO 1250A

Aluminium

	NH	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
125A	00	**65281811P**	**65281811P**	**65281811P**	**65281811P**	**65281812P**	**65281814P**	**65391812P**	**65391813P**	**65391814P**
250A	1	**65281821P**	**65281821P**	**65281821P**	**65281821P**	**65281822P**	**65281824P**	**65391822P**	**65391823P**	**65391824P**
400A	2	**65281831P**	**65281831P**	**65281831P**	**65281831P**	**65281832P**	**65281834P**	**65391832P**	**65391833P**	**65391834P**
630A	3	**65286041P**	**65286041P**	**65286041P**	**65286041P**	**65286042P**	**65286044P**	**65396042P**	**65396043P**	**65396044P**
800A	4	**65281851P**	**65281851P**	**65281851P**	**65281851P**	**65281852P**	**65281854P**	**65391852P**	**65391853P**	**65391854P**
1000A	4	**65281861P**	**65281861P**	**65281861P**	**65281861P**	**65281862P**	**65281864P**	**65391862P**	**65391863P**	**65391864P**
1250A	4	**65281871P**	**65281871P**	**65281871P**	**65281871P**	**65281872P**	**65281874P**	**65391872P**	**65391873P**	**65391874P**
							single bar	double bar		

Copper

	NH	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
125A	00	**65281811P**	**65281811P**	**65281811P**	**65281812P**	**65281812P**	**65281814P**	**65391812P**	**65391813P**	**65391814P**
250A	1	**65281821P**	**65281821P**	**65281821P**	**65281822P**	**65281822P**	**65281824P**	**65391822P**	**65391823P**	**65391824P**
400A	2	**65281831P**	**65281831P**	**65281831P**	**65281832P**	**65281832P**	**65281834P**	**65391832P**	**65391833P**	**65391834P**
630A	3	**65286041P**	**65286041P**	**65286041P**	**65286042P**	**65286042P**	**65286044P**	**65396042P**	**65396043P**	**65396044P**
800A	4	**65281851P**	**65281851P**	**65281851P**	**65281852P**	**65281852P**	**65281854P**	**65391852P**	**65391853P**	**65391854P**
1000A	4	**65281861P**	**65281861P**	**65281861P**	**65281862P**	**65281862P**	**65281864P**	**65391862P**	**65391863P**	**65391864P**
1250A	4	**65281871P**	**65281871P**	**65281871P**	**65281872P**	**65281872P**	**65281874P**	**65391872P**	**65391873P**	**65391874P**
							single bar	double bar		



In order to finalize the order, it is necessary to specify the type of Super Compact the box will be installed on.

The boxes cannot be installed simultaneously on both sides of the same junction.

WARNING

The bolted boxes are to be installed directly on the junction when the busbar is disconnected and not energized.
For operating voltages (Ue) different from 400V please contact Zucchini.

Fuses not included. See Legrand catalogue.

Rated insulating AC voltage	Ui [V]	**1000**
Rated impulse withstand voltage	Uimp [kV]	**12**
Type of rated duty		**AC23A**
Rated conditional short circuit current	[kA]	**100**
		CEI EN 60947-3

DIMENSIONS OF THE BOX

Box rating	125A to 400A	630A	800A to 1250A
(A) [mm]	**365**	**400**	**450**
(B) [mm]	**630**	**750**	**1050**
(C) [mm]	**270**	**280**	**300**
(D) [mm]	**95**	**115**	**115**
(E) [mm]	**635**	**680**	**750**

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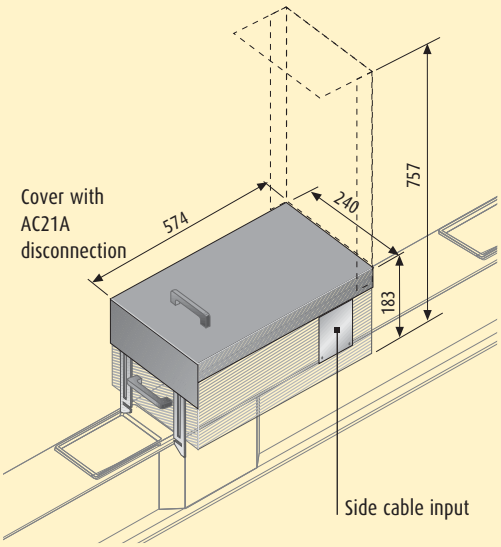
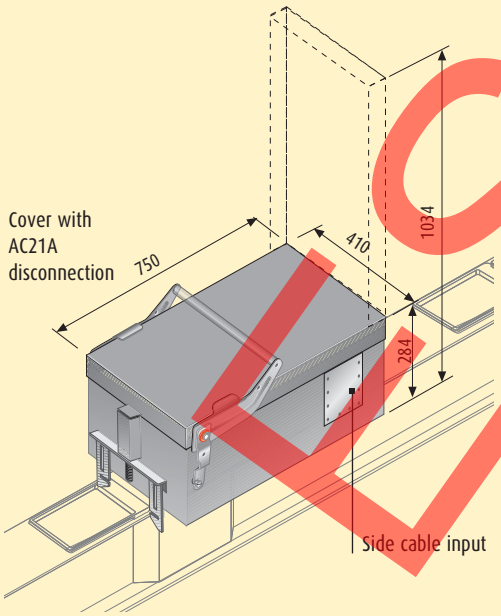
Tap-off boxes

TAP-OFF BOX 63A TO 630A : PLUG-IN TYPE



from 63A to 160A



from 250A to 630A

WITH FUSE CARRIER

Rating A	Fuse	Items
63	CH22	**65285031P**
125	NH00	**65285032P**
160	NH00	**65285033P**
250	NH2	**65285034P**
630	NH3	**65285036P**

Polyester coated, galvanized steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current.
Fuses not included.

WITH SWITCH DISCONNECTOR (AC23)

Rating A	Items
63	**65285051P**
125	**65285052P**
160	**65285053P**
250	**65285054P**
400	**65285055P**
630	**65285076P**

Polyester coated, galvanized steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current.

These tap-off boxes are equipped with a switch disconnector (AC23) and a fuse carrier. The disconnector switch is operated through a rotary handle on the cover (not shown in the picture).
N.B. Cover with AC21A disconnection: it is not possible to open, close, install or pull out the tap-off box if the switch is in "ON" position.

Fuses not included. See Legrand catalogue.

Can be installed and removed when the busbar is energized.
To be applied on elements with any rating, with tap-off outlets.

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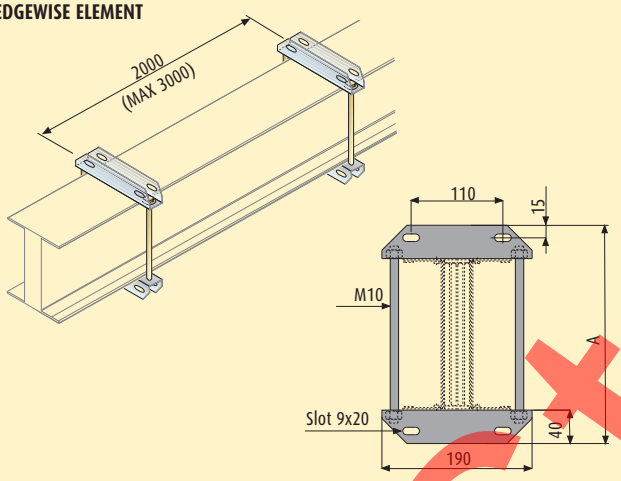
Fixing supports

SUSPENSION BRACKET FOR EDGEWISE INSTALLATION

	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
AL busbars	**65202001**	**65202001**	**65202001**	**65202001**	**65202002**	**65202004**	**65222002**	**65222003**	**65222004**
Dimension A	210	210	210	210	250	300	460	520	560
						single bar	double bar		

	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Cu busbars	**65202001**	**65202001**	**65202001**	**65202002**	**65202002**	**65202004**	**65222002**	**65222003**	**65222004**
Dimension A	210	210	210	250	250	300	460	520	560
						single bar	double bar		

EDGEWISE ELEMENT

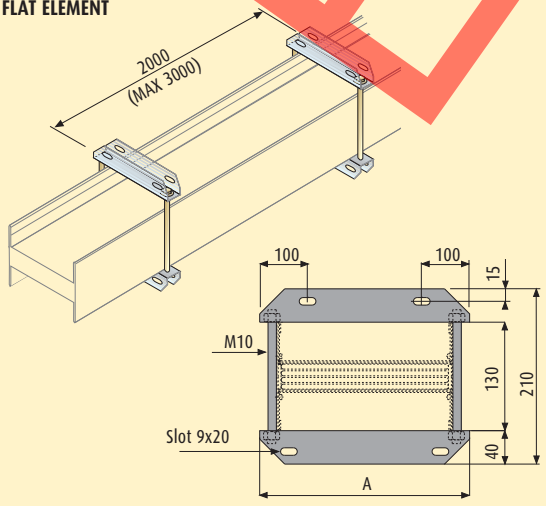


SUSPENSION BRACKET FOR FLAT INSTALLATION

	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Al busbars	**65202001**	**65202001**	**65202001**	**65202001**	**65202013**	**65202013**	**65202112**	**65202113**	**65202114**
Dimension A	190	190	190	190	315	315	430	490	530
						single bar	double bar		

	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Cu busbars	**65202001**	**65202001**	**65202001**	**65202013**	**65202013**	**65202013**	**65202112**	**65202113**	**65202114**
Dimension A	190	190	190	315	315	315	430	490	530
						single bar	double bar		

FLAT ELEMENT



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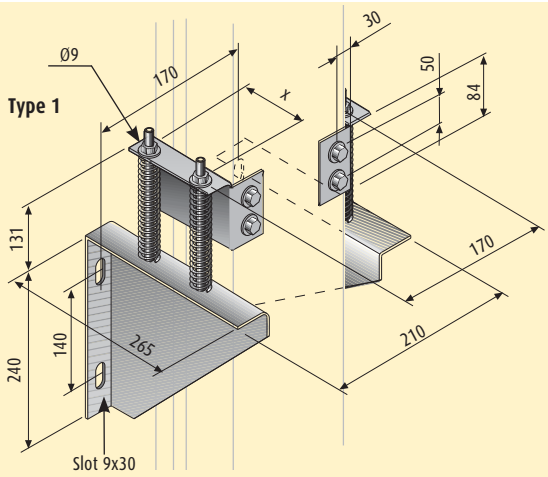
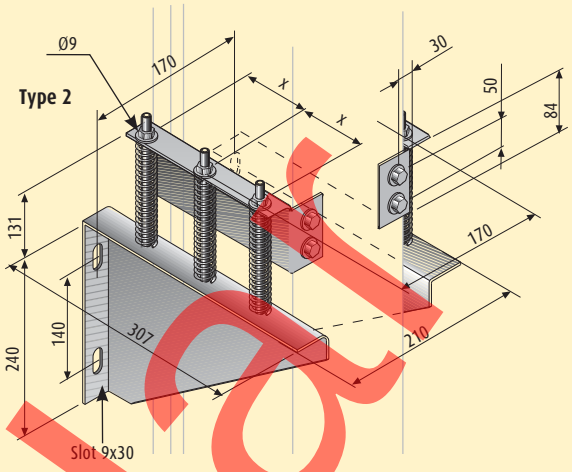
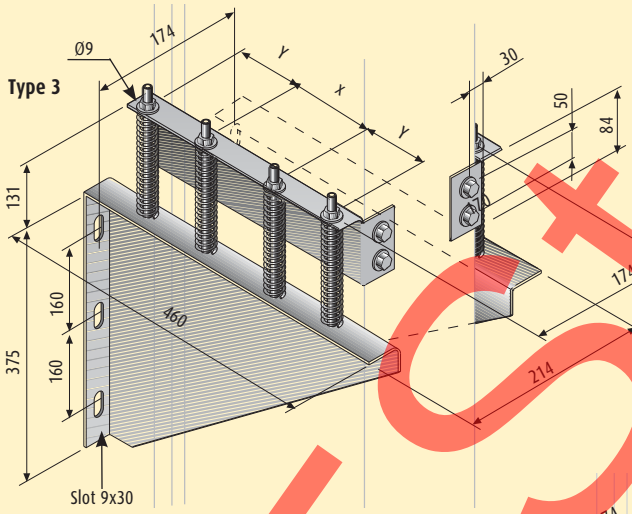
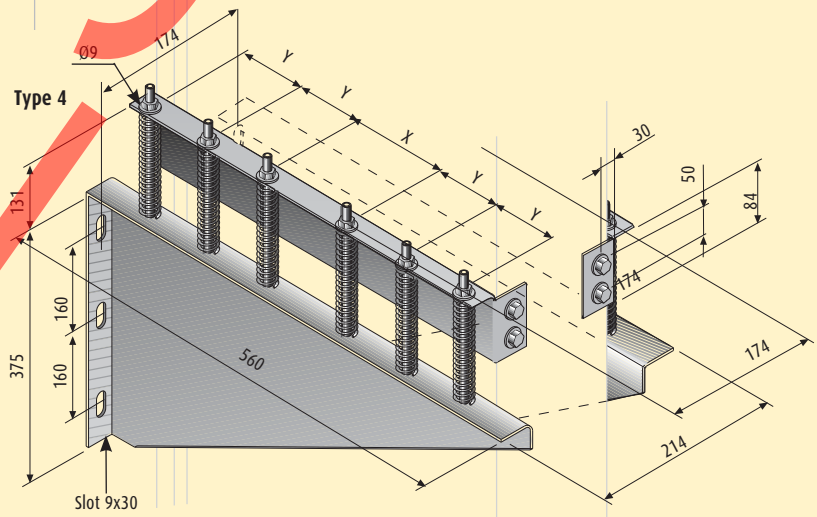
Fixing supports
Dimensions









X AND Y DIMENSIONS OF THE BRACKETS

	Type 1	Type 1	Type 2	Type 2	Type 3	Type 4	Type 4
Aluminium	630A to 1000A	1250A	1600A	2000A	2500A	3200A	4000A
Copper	800A to 1250A	1600A	2000A	2500A	3200A	4000A	5000A
x [mm]	**90**	**120**	**80**	**90**	**80**	**80**	**80**
y [mm]	-	-	-	-	**110**	**80**	**90**

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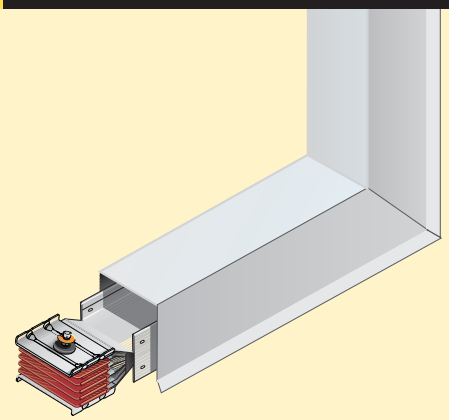
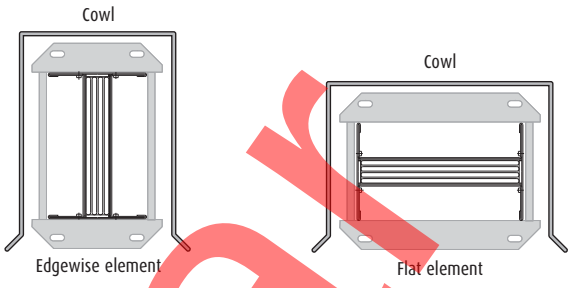
Protection accessories

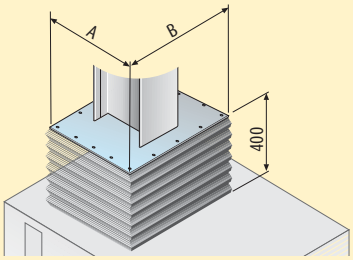
PROTECTIVE COVER FOR OUTDOOR APPLICATIONS





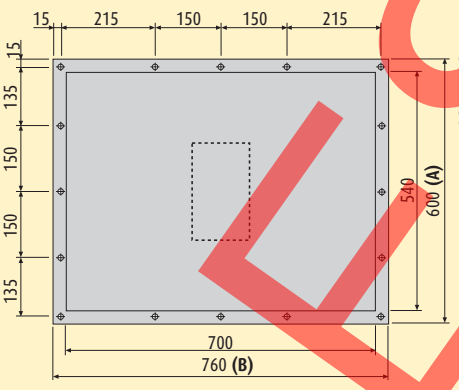
Covering accessory to be used for outdoor installations and wherever the standard IP55 Degree of protection is not adequate.

PROTECTIVE BELLOWS

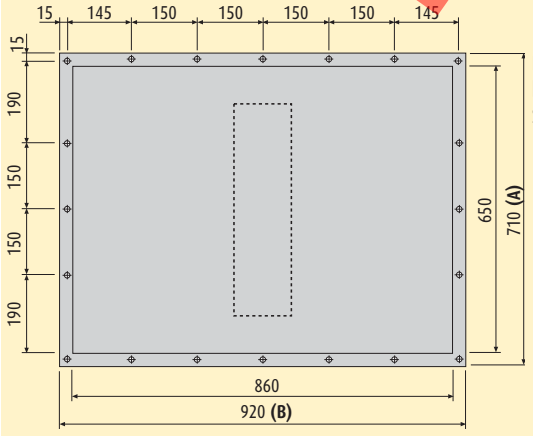


Aluminium	630A to 2000A	2500A to 4000A
	SF766040	**SF927140**
	single bar	double bar
Copper	800A to 2500A	3200A to 5000A
	SF766040	**SF927140**
	single bar	double bar

Recommended for protection of the interface connection on panelboards, dry-type transformer with enclosure and oil-type transformers.
For EdM cast resin transformers, custom-made connections are available upon request (see p.48)



Single bar
SF766040



Double bar
SF927140

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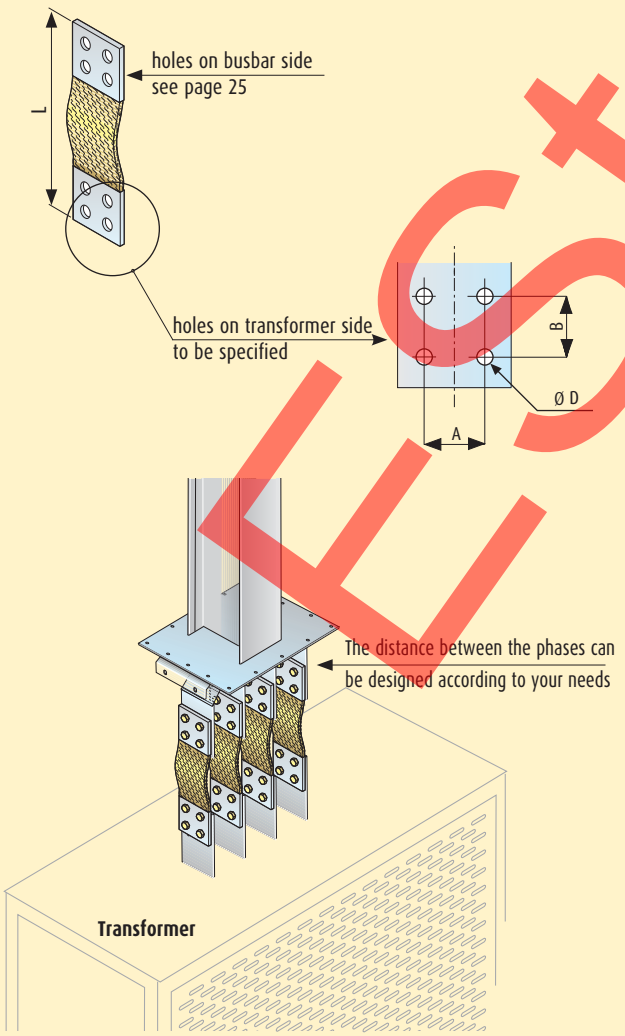
Zucchini transformer connections

FLEXIBLE BRAID CONNECTIONS

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
No. of braids per phase	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**2**
Length [mm]									
300-450	**FC100010**	**FC100010**	**FC200010**	**FC300010**	**FC500010**	**FC600010**	**FC400010**	**FC500010**	**FC600010**
451-600	**FC100020**	**FC100020**	**FC200020**	**FC300020**	**FC500020**	**FC600020**	**FC400020**	**FC500020**	**FC600020**
601-750	**FC100030**	**FC100030**	**FC200030**	**FC300030**	**FC500030**	**FC600030**	**FC400030**	**FC500030**	**FC600030**
More than 750	**FC100099**	**FC100099**	**FC200099**	**FC300099**	**FC500099**	**FC600099**	**FC400099**	**FC500099**	**FC600099**

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
No. of braids per phase	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**2**	**2**
Length [mm]									
300-450	**FC100010**	**FC200010**	**FC300010**	**FC500010**	**FC600010**	**FC400010**	**FC500010**	**FC600010**	**FC700010**
451-600	**FC100020**	**FC200020**	**FC300020**	**FC500020**	**FC600020**	**FC400020**	**FC500020**	**FC600020**	**FC700020**
601-750	**FC100030**	**FC200030**	**FC300030**	**FC500030**	**FC600030**	**FC400030**	**FC500030**	**FC600030**	**FC700030**
More than 750	**FC100099**	**FC200099**	**FC300099**	**FC500099**	**FC600099**	**FC400099**	**FC500099**	**FC600099**	**FC700099**

When ordering, specify:
holes on transformer side (dimensions A, B, Ø D) and length L.



Example of a vertical connection

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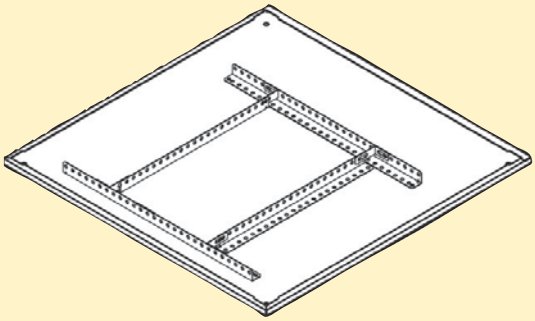
The system:
The Legrand XL³ advantage

INSTALLATION KIT FOR MAS 400 CABINET



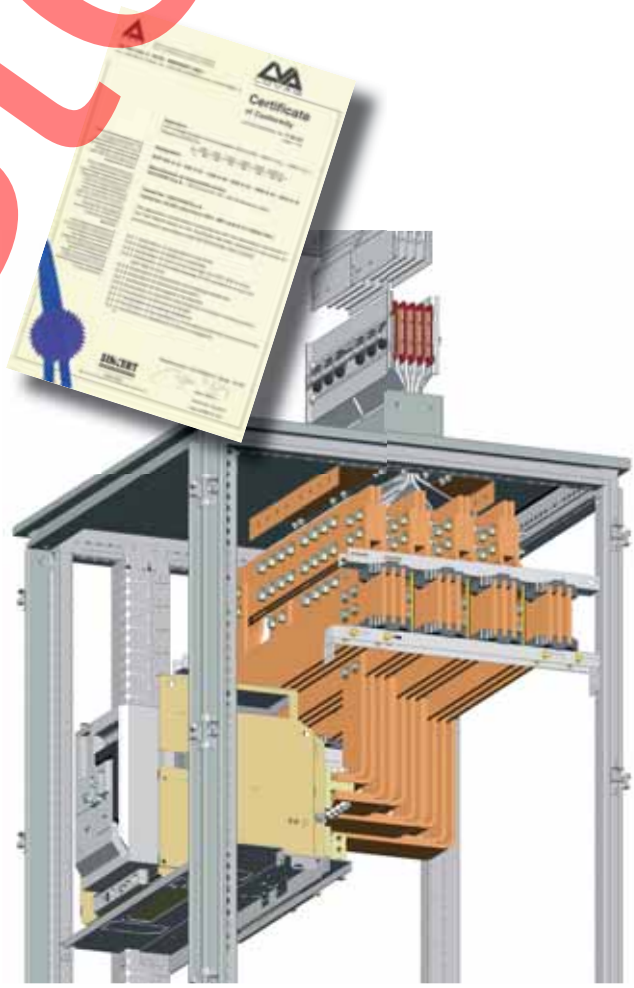
Item	
205 29	kit for reinforcing the roof of the XL³ cabinets for the installation of the Zucchini interface to connect the busbar systems

The Super Compact – SCP range can be easily and immediately combined with the Legrand XL³ 4000 cabinets.
The reinforcement kit enables you to install any type of unit to the board (see page 24-31) onto the roof of the XL³ structure in a quick and easy way.

Upon request, and with the specific measurements, custom made connections between the SCP interface and the DMX air-circuit breaker can be supplied for installation in the XL³ cabinets

The safety and the operational efficiency of the Zucchini - Legrand system are guaranteed by the **system certification**, achieved after rigorous tests carried out in the most important international laboratories.

For more details about the XL³, please refer to the Legrand Catalogue.



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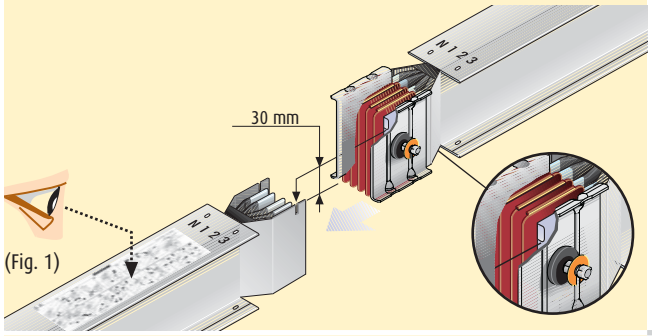
Installation guidelines

INSTALLATION SEQUENCE OF THE JUNCTION

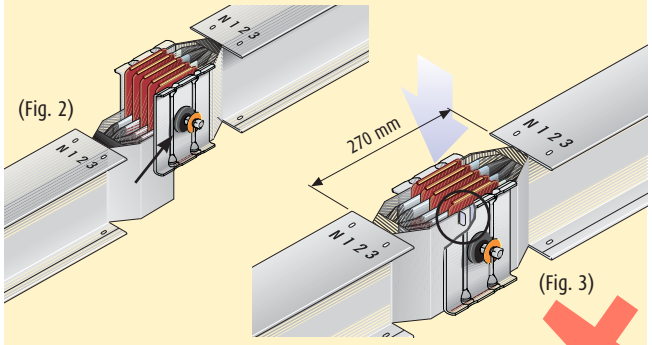


(Fig. 1)

The installation instructions are placed on every element near the junction (Fig.1)

Make sure that the contacts are clean.

Join the two elements together.

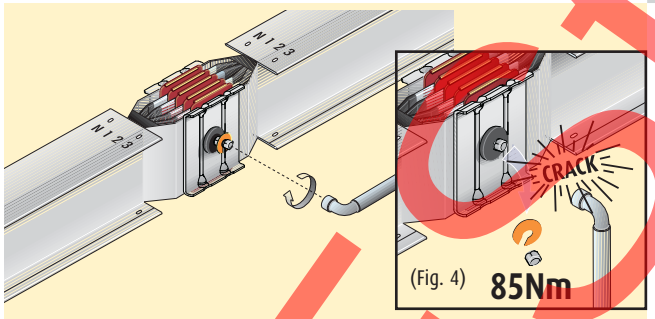


(Fig. 2)

(Fig. 3)

Make sure that the earth plate of the straight element is inserted behind the front plate of the junction monobloc (Fig.2)

The positioning pin on the monobloc should be fitted into the corresponding slot on the earth plate. Verify the distance between elements, 270mm, before tightening the monobloc completely (Fig.3).

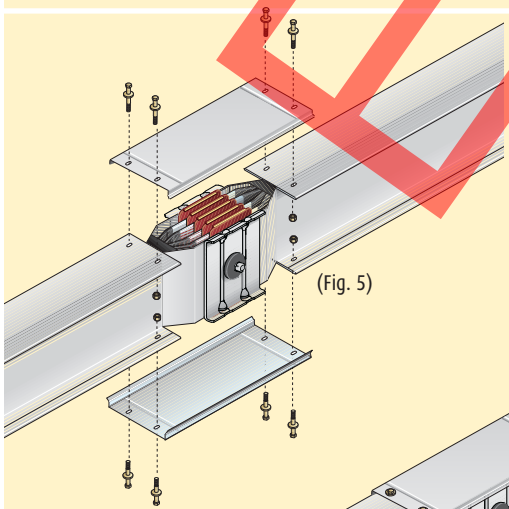


(Fig. 4)

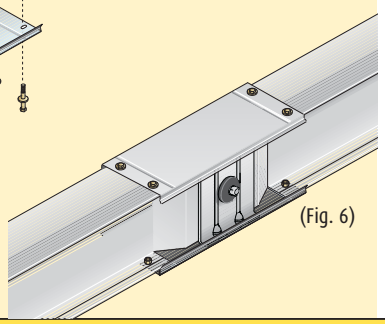
Tighten the bolt of the monobloc until the 1st head breaks off (Fig. 4).

The bolt that tightens the monobloc has a second head which is used when carrying out operations or inspections on the line.

The nominal tightening torque is 85Nm.


(Fig. 5)

Install the covers of the junction (Fig. 5).


(Fig. 6)

Connection completed correctly with degree of protection IP55 (Fig. 6).

For further information, please refer to the technical guide.

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Certificates

The Super-Compact has been given Type-Approval Certifications by the most prestigious Electro-technical agencies:

- Certificate of Compliance with Standards CEI 60439-2 (ACAE - LOVAG)
- RINA Type-Approval (Italian Register of Shipping)
- ABS Type-Approval (American Bureau of Standard)
- GOST Type-Approval (Russia)
- REI120 fire resistance measurements
- Noise measurements (CESI)
- Fire resistance measurements with Fire Barrier
- Electromagnetic emissions measurements
- Mechanical vibration resistance measurements (Dynamic Test - ENEL HYDRO)

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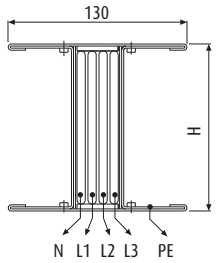


Technical data
SCP (3L+N+PE)

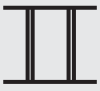
COPPER

		single bar						double bar		
Rated current	I_n [A]	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**
Casing overall dimensions	L x H [mm]	130x130	130x130	130x130	130x170	130x170	130x220	130x380	130x440	130x480
Operating voltage	U_e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	U_i [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current for three-phase fault (1 s)	I_{cw} [kA]rms	45	50	60	85	88	88	170	176	176
Allowable peak current for three-phase fault	I_{pk} [kA]	95	110	132	187	194	194	374	387	387
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	27	30	36	51	53	53	102	106	106
Allowable peak current for single-phase fault	[kA]	57	66	79	112	116	116	224	232	232
Allowable specific energy for three-phase fault	I^2t [MA^2s]	2025	2500	3600	7225	7744	7744	28900	30976	30976
Phase resistance	R_{20} [mΩ/m]	0.041	0.032	0.032	0.024	0.020	0.016	0.012	0.010	0.008
Phase reactance (50 Hz)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Phase impedance	Z [mΩ/m]	0.047	0.037	0.037	0.028	0.024	0.019	0.014	0.012	0.010
Phase resistance at thermal conditions	R_t [mΩ/m]	0.045	0.037	0.040	0.029	0.024	0.019	0.015	0.013	0.010
Neutral resistance	R_{20} [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Phase impedance at thermal conditions	Z [mΩ/m]	0.050	0.041	0.043	0.033	0.028	0.022	0.016	0.014	0.012
Resistance of the protective conductor (PE 1)	R_{PE} [mΩ/m]	0.125	0.125	0.125	0.113	0.113	0.101	0.075	0.069	0.065
Resistance of the protective conductor (PE 2)	R_{PE} [mΩ/m]	0.036	0.036	0.036	0.028	0.028	0.023	0.014	0.012	0.011
Resistance of the protective conductor (PE 3)	R_{PE} [mΩ/m]	0.050	0.050	0.050	0.041	0.041	0.033	0.021	0.018	0.017
Reactance of the protective conductor (50 Hz)	X_{PE} [mΩ/m]	0.054	0.054	0.054	0.044	0.044	0.032	0.022	0.017	0.016
Resistance of the fault loop (PE 1)	R_o [mΩ/m]	0.170	0.162	0.165	0.142	0.137	0.120	0.090	0.082	0.075
Resistance of the fault loop (PE 2)	R_o [mΩ/m]	0.081	0.073	0.076	0.057	0.052	0.042	0.029	0.025	0.021
Resistance of the fault loop (PE 3)	R_o [mΩ/m]	0.095	0.087	0.090	0.070	0.065	0.052	0.036	0.031	0.027
Reactance of the fault loop (50 Hz)	X_o [mΩ/m]	0.077	0.071	0.071	0.059	0.058	0.043	0.029	0.023	0.022
Impedance of the fault loop (PE 1)	Z_o [mΩ/m]	0.186	0.177	0.179	0.154	0.149	0.128	0.094	0.085	0.078
Impedance of the fault loop (PE 2)	Z_o [mΩ/m]	0.111	0.102	0.104	0.082	0.078	0.060	0.041	0.034	0.030
Impedance of the fault loop (PE 3)	Z_o [mΩ/m]	0.122	0.112	0.114	0.092	0.087	0.068	0.046	0.039	0.035
Zero-sequence resistance phase - N	R_o [mΩ/m]	0.170	0.155	0.155	0.115	0.120	0.098	0.083	0.071	0.062
Zero-sequence reactance phase - N	X_o [mΩ/m]	0.159	0.151	0.151	0.114	0.098	0.065	0.056	0.055	0.042
Zero-sequence Impedance phase - N	Z_o [mΩ/m]	0.233	0.216	0.216	0.162	0.155	0.118	0.100	0.090	0.075
Zero-sequence resistance phase- PE	R_o [mΩ/m]	0.507	0.429	0.429	0.331	0.283	0.221	0.177	0.178	0.144
Zero-sequence reactance phase - PE	X_o [mΩ/m]	0.201	0.177	0.177	0.143	0.150	0.124	0.111	0.094	0.086
Zero-sequence Impedance phase - PE	Z_o [mΩ/m]	0.545	0.464	0.464	0.361	0.320	0.253	0.209	0.201	0.168
Voltage drop factor with distributed load $\Delta V = k \cdot L \cdot I_e \cdot 10^{-6}$ [V]	k [V/m/A]10^{-6} cosφ = 0.70	41.3	33.0	34.6	27.1	23.5	18.5	13.2	11.5	9.8
	cosφ = 0.75	42.1	33.8	35.5	27.7	23.9	18.8	13.5	11.8	9.9
	cosφ = 0.80	42.8	34.5	36.3	28.1	24.2	19.1	13.8	12.1	10.0
	cosφ = 0.85	43.3	35.0	37.0	28.4	24.4	19.2	14.0	12.2	10.1
	cosφ = 0.90	43.4	35.3	37.3	28.5	24.4	19.2	14.1	12.3	10.1
	cosφ = 0.95	42.9	35.1	37.2	28.2	23.9	18.8	14.0	12.2	9.8
	cosφ = 1.00	38.6	32.1	34.4	25.4	21.2	16.7	12.7	11.2	8.7
Weight (PE 1)	p [kg/m]	28.9	32.6	32.6	41.8	47.9	60.6	79.0	93.4	116.7
Weight (PE 2)	p [kg/m]	38.4	42.1	42.1	54.2	60.3	76.8	103.4	122.3	148.6
Weight (PE 3)	p [kg/m]	32.0	35.7	35.7	45.8	51.9	65.9	87.0	102.8	127.1
Fire load	[kWh/m]	4.5	5.5	5.5	8	8.2	10.5	16	19	21
Degree of protection	IP	55	55	55	55	55	55	55	55	55
Thermal resistance class of the insulating materials		B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*
Joule effect losses at rated current	P [W/m]	86	111	186	225	294	361	451	619	750
Min/Max Ambient Temperature	[°C]	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50

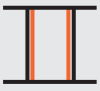
∗ Class F thermal resistance (155°C) available on request

In: rated current referred to a room temperature of 40°C
ΔV : for calculations, see page 95

- **Regulations and conformity**:
  IEC/EN 60439-1 & 2; DIN VDE 0660 500 & 502
- **Product suitable for Constant/Cyclic Warm, humid climates:**
  DIN IEC 68 part 2-3; DIN IEC 68 part 2-30
- **Degree of protection**:
  IP55; IPx7 carrying lines available with accessories, on request
- **Insulation and surface treatment of the conductors:**
  Insulated conductors for the whole length, aluminum copper-plated and tin-plated
- **Busbar casing material**:
  1.5mm galvanized steel plate, pre-painted or stainless steel
  (available, if required, with special paint and/or with thickness 2mm)



(*)
PE 1
Standard version



(*)
PE 2
Extra earth - COPPER

(*)
PE 3
Extra earth - ALUMINIUM

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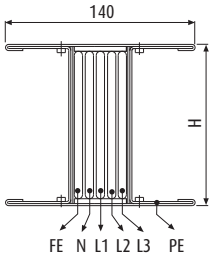

SCP Technical Data Functional Earth ("clean earth") SCP5C (3L+N+PE+FE)

COPPER

		single bar						double bar		
Rated current	I_n [A]	800	1000	1250	1600	2000	2500	3200	4000	5000
Casing overall dimensions	L x H [mm]	140x130	140x130	140x130	140x170	140x170	140x220	140x380	140x440	140x480
Operating voltage	U_e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	U_i [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current for three-phase fault (1 s)	I_{cw} [kA]rms	45	50	60	85	88	88	170	176	176
Allowable peak current for three-phase fault	I_{pk} [kA]	95	110	132	187	194	194	374	387	387
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	27	30	36	51	53	53	102	106	106
Allowable peak current for single-phase fault	I_{pk} [kA]	57	66	79	112	116	116	224	232	232
Allowable specific energy for three-phase fault	I^2t [MA²s]	2025	2500	3600	7225	7744	7744	28900	30976	30976
Phase resistance	R_{20} [mΩ/m]	0.041	0.032	0.032	0.024	0.020	0.016	0.012	0.010	0.008
Phase reactance (50 Hz)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Phase impedance	Z [mΩ/m]	0.047	0.037	0.037	0.028	0.024	0.019	0.014	0.012	0.010
Phase resistance at thermal conditions	R_t [mΩ/m]	0.045	0.037	0.040	0.029	0.024	0.019	0.015	0.013	0.010
Phase impedance at thermal conditions	Z [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Neutral resistance	R_{20} [mΩ/m]	0.041	0.032	0.032	0.024	0.020	0.016	0.012	0.010	0.008
Functional earthing resistance (FE)	R_{20} [mΩ/m]	0.041	0.032	0.032	0.024	0.020	0.016	0.012	0.010	0.008
Functional earthing reactance (FE)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Resistance of the protective conductor (PE type 1)	R_{PE} [mΩ/m]	0.125	0.125	0.125	0.113	0.113	0.101	0.075	0.069	0.065
Resistance of the protective conductor (PE type 2)	R_{PE} [mΩ/m]	0.036	0.036	0.036	0.028	0.028	0.023	0.014	0.012	0.011
Resistance of the protective conductor (PE type 3)	R_{PE} [mΩ/m]	0.050	0.050	0.050	0.041	0.041	0.033	0.021	0.018	0.017
Reactance of the protective conductor (50 Hz)	X_{PE} [mΩ/m]	0.054	0.054	0.054	0.044	0.044	0.032	0.022	0.017	0.016
Resistance of the fault loop (PE 1)	R_o [mΩ/m]	0.076	0.063	0.065	0.049	0.042	0.033	0.025	0.022	0.017
Resistance of the fault loop (PE 2)	R_o [mΩ/m]	0.064	0.054	0.057	0.042	0.036	0.029	0.021	0.018	0.015
Resistance of the fault loop (PE 3)	R_o [mΩ/m]	0.067	0.057	0.059	0.045	0.038	0.030	0.023	0.020	0.015
Reactance of the fault loop (50 Hz)	X_o [mΩ/m]	0.077	0.071	0.071	0.059	0.058	0.043	0.029	0.023	0.022
Impedance of the fault loop (PE 1)	Z_o [mΩ/m]	0.108	0.095	0.097	0.077	0.071	0.054	0.039	0.032	0.028
Impedance of the fault loop (PE 2)	Z_o [mΩ/m]	0.100	0.089	0.091	0.073	0.068	0.052	0.036	0.030	0.026
Impedance of the fault loop (PE 3)	Z_o [mΩ/m]	0.102	0.091	0.093	0.074	0.069	0.052	0.037	0.030	0.027
Zero-sequence resistance phase - N	R_o [mΩ/m]	0.170	0.155	0.155	0.115	0.120	0.098	0.083	0.071	0.062
Zero-sequence reactance phase - N	X_o [mΩ/m]	0.159	0.151	0.151	0.114	0.098	0.065	0.056	0.055	0.042
Zero-sequence Impedance phase - N	Z_o [mΩ/m]	0.233	0.216	0.216	0.162	0.155	0.118	0.100	0.090	0.075
Zero-sequence resistance phase- PE	R_o [mΩ/m]	0.408	0.320	0.320	0.220	0.188	0.142	0.092	0.077	0.061
Zero-sequence reactance phase - PE	X_o [mΩ/m]	0.196	0.158	0.158	0.126	0.135	0.136	0.104	0.088	0.075
Zero-sequence Impedance phase - PE	Z_o [mΩ/m]	0.453	0.357	0.357	0.254	0.231	0.197	0.139	0.117	0.097
Voltage drop factor with distributed load $\Delta V = k \cdot L \cdot I_e \cdot 10^{-6}$ [V]	k [V/m/A]10^{-6} cosφ = 0.70	41.3	33.0	34.6	27.1	23.5	18.5	13.2	11.5	9.8
	cosφ = 0.75	42.1	33.8	35.5	27.7	23.9	18.8	13.5	11.8	9.9
	cosφ = 0.80	42.8	34.5	36.3	28.1	24.2	19.1	13.8	12.1	10.0
	cosφ = 0.85	43.3	35.0	37.0	28.4	24.4	19.2	14.0	12.2	10.1
	cosφ = 0.90	43.4	35.3	37.3	28.5	24.4	19.2	14.1	12.3	10.1
	cosφ = 0.95	42.9	35.1	37.2	28.2	23.9	18.8	14.0	12.2	9.8
	cosφ = 1.00	38.6	32.1	34.4	25.4	21.2	16.7	12.7	11.2	8.7
Weight (PE 1)	p [kg/m]	34.7	39.2	39.2	50.1	57.4	72.7	94.8	112.0	140.1
Weight (PE 2)	p [kg/m]	37.8	42.3	42.3	54.3	61.6	78.1	103.0	121.7	150.7
Weight (PE 3)	p [kg/m]	35.7	40.2	40.2	51.5	58.8	74.5	97.5	115.2	143.5
Fire load	[kWh/m]	5.6	6.9	6.9	10.0	10.3	13.1	20.0	23.8	26.3
Degree of protection	IP	55	55	55	55	55	55	55	55	55
Thermal resistance class of the insulating materials		B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*
Joule effect losses at rated current	P [W/m]	86	111	186	225	294	361	451	619	750
Min/Max Ambient Temperature	[°C]	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50

- **Regulations and conformity**:
  IEC/EN 60439-1 & 2; DIN VDE 0660 500 & 502
- **Product suitable for Constant/Cyclic Warm, humid climates:**
  DIN IEC 68 part 2-3; DIN IEC 68 part 2-30
- **Degree of protection**:
  IP55; IPx7 carrying lines available with accessories, on request
- **Insulation and surface treatment of the conductors:**
  Insulated conductors for the whole length, aluminum copper-plated and tin-plated
- **Busbar casing material**:
  1.5mm galvanized steel plate, pre-painted or stainless steel
  (available, if required, with special paint and/or with thickness 2mm)

* Class F thermal resistance (155°C) available on request

In: rated current referred to a room temperature of 40°C
ΔV : for calculations, see page 95

(*)
PE 1
Standard version

(*)
PE 2
Extra earth - COPPER

(*)
PE 3
Extra earth - ALUMINIUM

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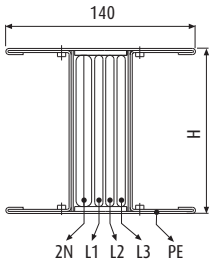


"Double neutral" technical data
SCP2N (3L+2N+PE)

COPPER

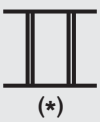
		single bar						double bar		
Rated current	I_n [A]	800	1000	1250	1600	2000	2500	3200	4000	5000
Casing overall dimensions	L x H [mm]	140x130	140x130	140x130	140x170	140x170	140x220	140x380	140x440	140x480
Operating voltage	U_e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	U_i [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current for three-phase fault (1 s)	I_{cw} [kA]rms	45	50	60	85	88	88	170	176	176
Allowable peak current for three-phase fault	I_{pk} [kA]	95	110	132	187	194	194	374	387	387
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	27	30	36	51	53	53	102	106	106
Allowable peak current for single-phase fault	I_{pk} [kA]	57	66	79	112	116	116	224	232	232
Rated short-time protection current (1 s)	I_{cw} [kA]rms	27	30	36	51	53	53	102	106	106
Protection circuit peak rated current	I_{pk} [kA]	57	66	79	112	116	116	224	232	232
Allowable specific energy for three-phase fault	I^2t [MA^2s]	2025	2500	3600	7225	7744	7744	28900	30976	30976
Phase resistance	R_{20} [mΩ/m]	0.041	0.032	0.032	0.024	0.020	0.016	0.012	0.010	0.008
Phase reactance (50 Hz)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Phase impedance	Z [mΩ/m]	0.0471	0.0365	0.0365	0.0284	0.0244	0.019	0.0143	0.012	0.0101
Phase resistance at thermal conditions	R_t [mΩ/m]	0.0446	0.037	0.0397	0.0293	0.0245	0.0192	0.0147	0.0129	0.01
Phase impedance at thermal conditions	Z [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.007	0.006	0.006
Neutral resistance	R_{20} [mΩ/m]	0.0205	0.0162	0.0162	0.012	0.01	0.078	0.0062	0.0052	0.0041
Resistance of the protective conductor (PE type 1)	R_{PE} [mΩ/m]	0.125	0.125	0.125	0.113	0.113	0.101	0.075	0.069	0.065
Resistance of the protective conductor (PE type 2)	R_{PE} [mΩ/m]	0.036	0.036	0.036	0.028	0.028	0.023	0.014	0.012	0.011
Resistance of the protective conductor (PE type 3)	R_{PE} [mΩ/m]	0.05	0.05	0.05	0.041	0.041	0.033	0.021	0.018	0.017
Reactance of the protective conductor (50 Hz)	X_{PE} [mΩ/m]	0.054	0.054	0.054	0.044	0.044	0.032	0.022	0.017	0.016
Resistance of the fault loop (PE 1)	R_o [mΩ/m]	0.170	0.162	0.1647	0.1423	0.1375	0.1202	0.0897	0.0819	0.075
Resistance of the fault loop (PE 2)	R_o [mΩ/m]	0.081	0.073	0.0757	0.0573	0.0525	0.0422	0.0287	0.0249	0.021
Resistance of the fault loop (PE 3)	R_o [mΩ/m]	0.946	0.087	0.0897	0.0703	0.0655	0.0522	0.0357	0.0309	0.027
Reactance of the fault loop (50 Hz)	X_o [mΩ/m]	0.077	0.071	0.071	0.059	0.058	0.043	0.029	0.023	0.022
Impedance of the fault loop (PE 1)	Z_o [mΩ/m]	0.186	0.177	0.179	0.154	0.149	0.128	0.094	0.085	0.078
Impedance of the fault loop (PE 2)	Z_o [mΩ/m]	0.111	0.102	0.104	0.082	0.078	0.060	0.041	0.034	0.030
Impedance of the fault loop (PE 3)	Z_o [mΩ/m]	0.122	0.112	0.114	0.092	0.087	0.068	0.046	0.039	0.035
Zero-sequence resistance phase - N	R_o [mΩ/m]	0.128	0.125	0.125	0.121	0.117	0.094	0.088	0.065	0.046
Zero-sequence reactance phase - N	X_o [mΩ/m]	0.184	0.152	0.152	0.143	0.127	0.122	0.078	0.076	0.073
Zero-sequence Impedance phase - N	Z_o [mΩ/m]	0.2241	0.1968	0.1968	0.1873	0.1727	0.154	0.1176	0.100	0.0863
Zero-sequence resistance phase- PE	R_o [mΩ/m]	0.507	0.429	0.429	0.331	0.283	0.221	0.177	0.178	0.144
Zero-sequence reactance phase - PE	X_o [mΩ/m]	0.201	0.177	0.177	0.143	0.15	0.124	0.111	0.094	0.086
Zero-sequence Impedance phase - PE	Z_o [mΩ/m]	0.545	0.4641	0.4641	0.3606	0.3203	0.2534	0.2089	0.2013	0.1677
Voltage drop factor with distributed load $\Delta V = k \cdot L \cdot I_e \cdot 10^{-6}$ [V]	k [V/m/A]10^{-6} cosφ = 0.70	41.3	33.0	34.6	27.1	23.5	18.5	13.2	11.5	9.8
	cosφ = 0.75	42.1	33.8	35.5	27.7	23.9	18.8	13.5	11.8	9.9
	cosφ = 0.80	42.8	34.5	36.3	28.1	24.2	19.1	13.8	12.1	10.0
	cosφ = 0.85	43.3	35.0	37.0	28.4	24.4	19.2	14.0	12.2	10.1
	cosφ = 0.90	43.4	35.3	37.3	28.5	24.4	19.2	14.1	12.3	10.1
	cosφ = 0.95	42.9	35.1	37.2	28.2	23.9	18.8	14.0	12.2	9.8
	cosφ = 1.00	38.6	32.1	34.4	25.4	21.2	16.7	12.7	11.2	8.7
Weight (PE 1)	p [kg/m]	34.7	39.2	39.2	50.1	57.4	72.7	94.8	112.0	140.1
Weight (PE 2)	p [kg/m]	37.8	42.3	42.3	54.3	61.6	78.1	103.0	121.7	150.7
Weight (PE 3)	p [kg/m]	35.7	40.2	40.2	51.5	58.8	74.5	97.5	115.2	143.5
Fire load	[kWh/m]	5.6	6.9	6.9	10.0	10.3	13.1	20.0	23.8	26.3
Degree of protection	IP	55	55	55	55	55	55	55	55	55
Thermal resistance class of the insulating materials		B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*
Joule effect losses at rated current	P [W/m]	86	111	186	225	294	361	451	619	750
Min/Max Ambient Temperature	[°C]	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50

- **Regulations and conformity**:
  IEC/EN 60439-1 & 2; DIN VDE 0660 500 & 502
- **Product suitable for Constant/Cyclic Warm, humid climates:**
  DIN IEC 68 part 2-3; DIN IEC 68 part 2-30
- **Degree of protection**:
  IP55; IPx7 carrying lines available with accessories, on request
- **Insulation and surface treatment of the conductors:**
  Insulated conductors for the whole length, aluminum copper-plated and tin-plated
- **Busbar casing material**:
  1.5mm galvanized steel plate, pre-painted or stainless steel
  (available, if required, with special paint and/or with thickness 2mm)

* Class F thermal resistance (155°C) available on request

In: rated current referred to a room temperature of 40°C

ΔV : for calculations, see page 95



(*)
PE 1
Standard version

(*)
PE 2
Extra earth - COPPER

(*)
PE 3
Extra earth - ALUMINIUM

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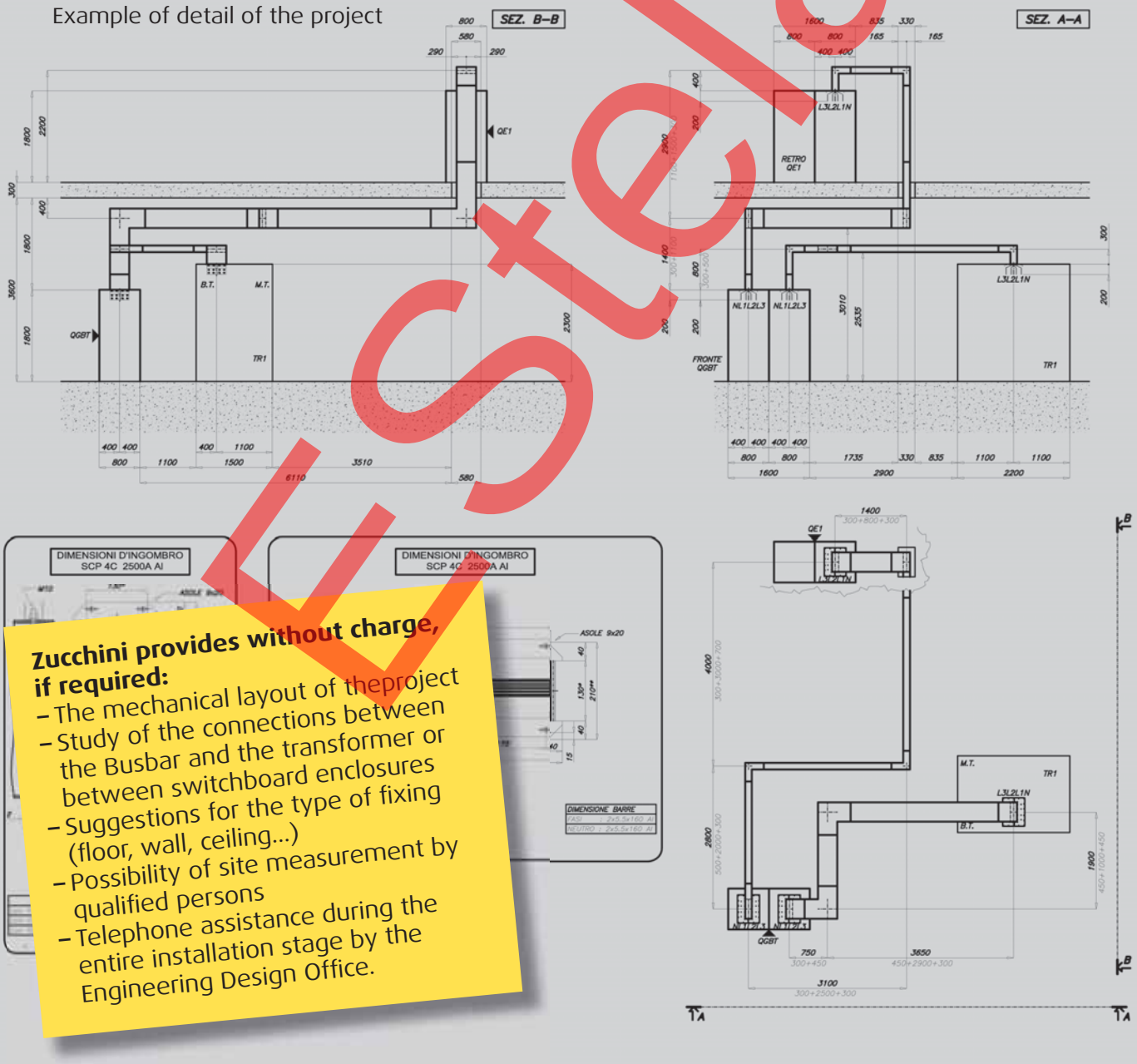
CHECKLIST TO BE DONE DURING THE PROJECT

1. Verify the measurements of the drawings, the correct position of the equipment (MV/LV transformer and LV switchboard enclosures
2. Check the availability of drawings required (transformer, switchboard board, etc.)
3. Check for the existence of unforeseen obstacles in the installation which could impede the run of the Busbar (for example pipelines, ventilation and air-conditioning ducts).
4. Agree upon who is responsible for providing the connection from the Busbar to the other devices (MV/LV transformer and LV switchboards).

Example of detail of the project



Zucchini provides without charge, if required:

- The mechanical layout of theproject
- Study of the connections between the Busbar and the transformer or between switchboard enclosures
- Suggestions for the type of fixing (floor, wall, ceiling...)
- Possibility of site measurement by qualified persons
- Telephone assistance during the entire installation stage by the Engineering Design Office.

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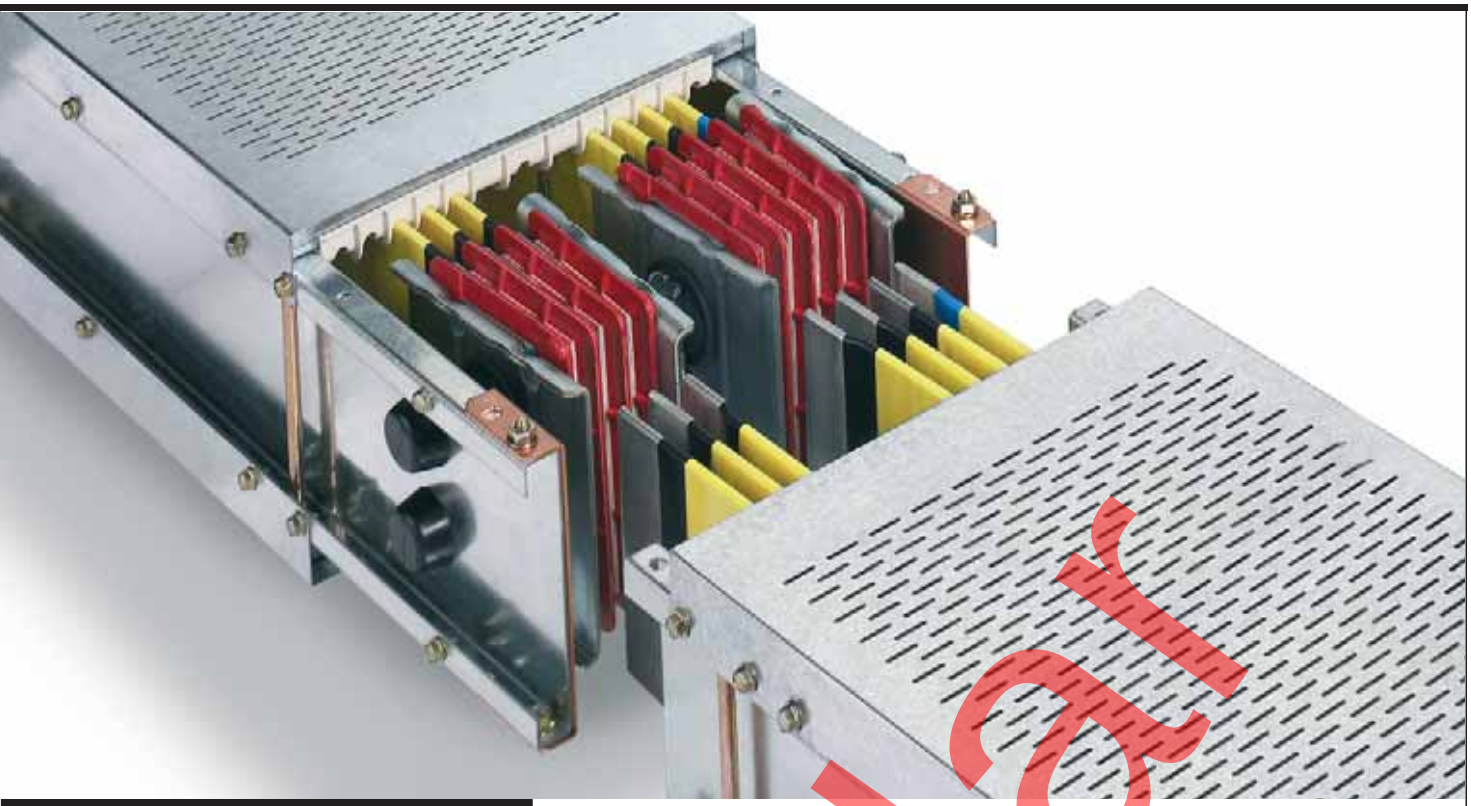

SECTION CONTENTS

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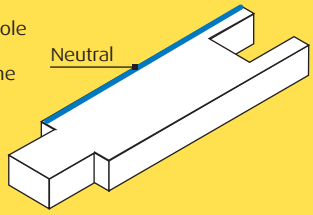
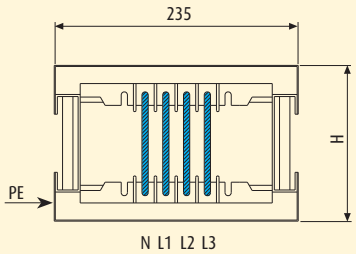
HR Features

Notes:
The product versions in the whole catalogue will be simplified as shown opposite, highlighting the neutral side with a blue line.

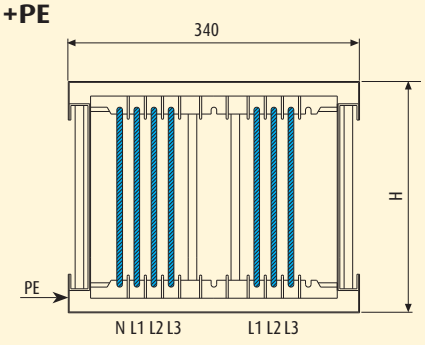


Standard versions:

Single bar (HR C1)
3L+100%N+PE



Double bar (HR C2)
3L+50%N+PE



Availability of special versions

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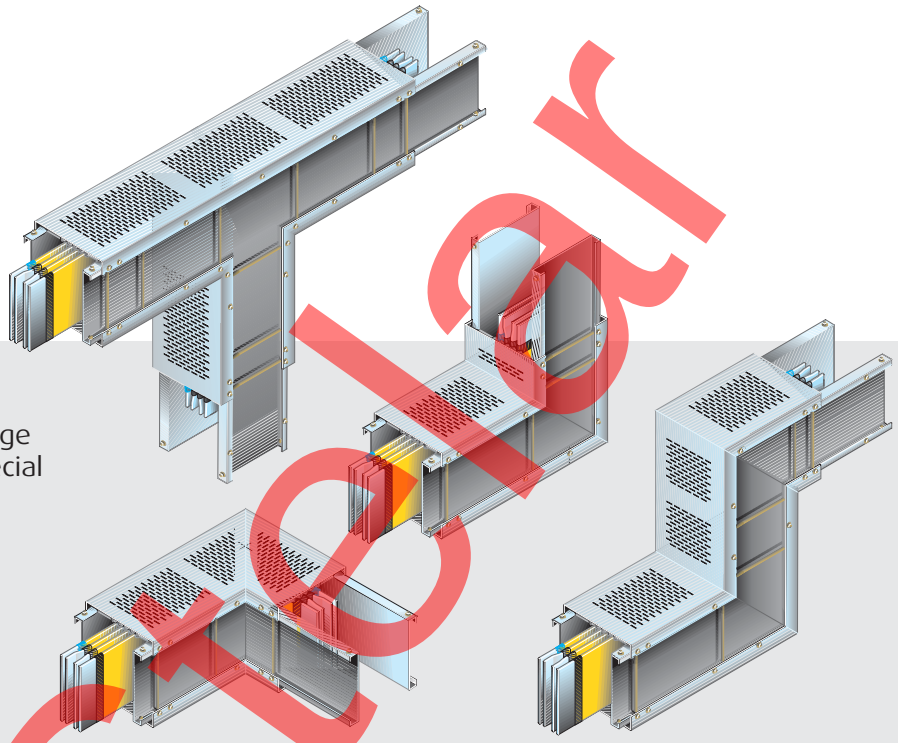
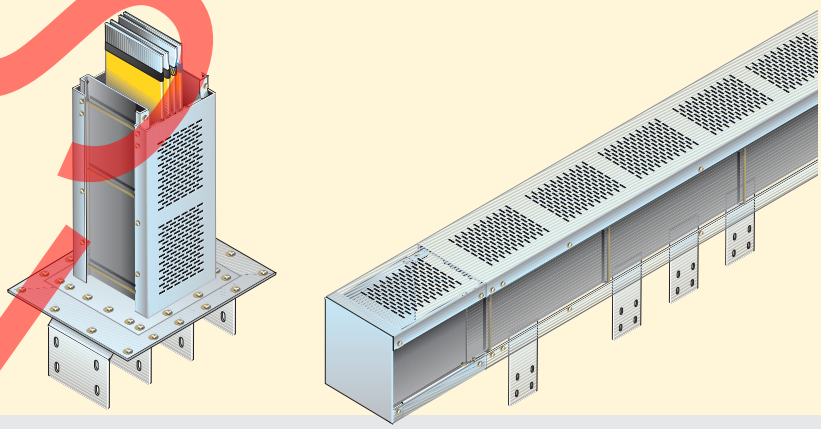


Direction changes:

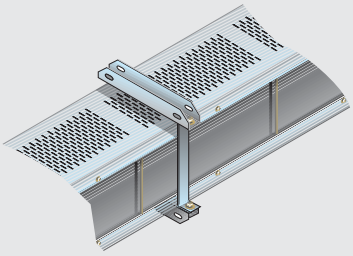
Elements able to meet any change of direction with standard or special solutions.

Elbows
Double elbows
Special T, X elements
Disconnectors
Capacity reducers



Connection interfaces:

Elements used for connecting the busbar to the board or transformer.



Fixing supports:

Elements used for fixing the busbar to the structure of the building.

Options for horizontal installations

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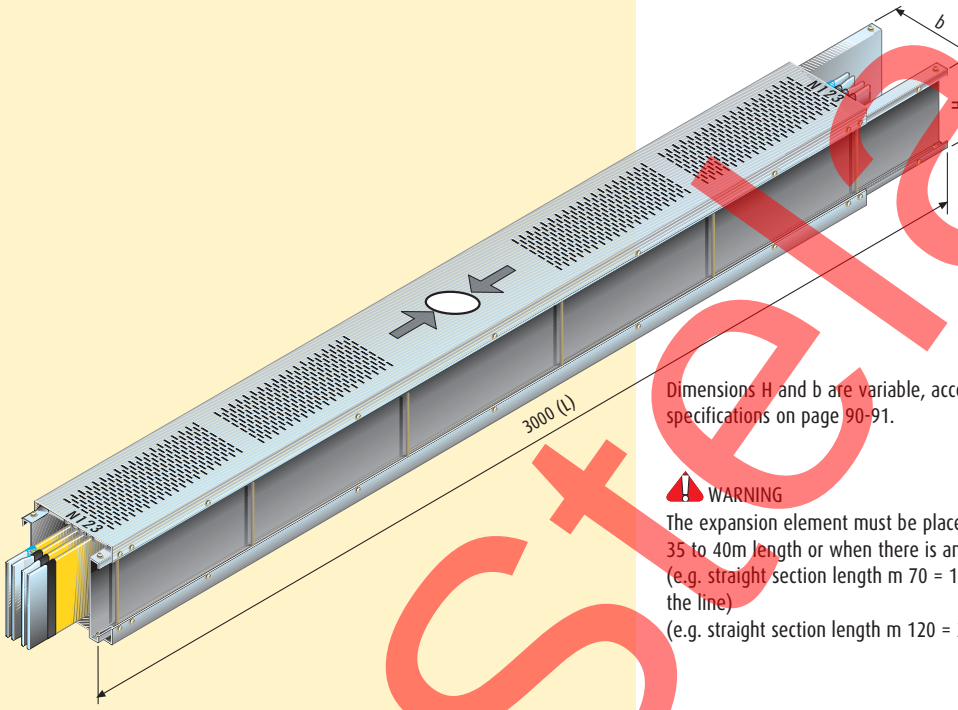
Trunking components

EXPANSION ELEMENT

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
L= 3000 mm	**90600201**	**90600202**	**90600203**	**90600205**	**90620201**	**90620202**	**90620203**	**90620205**	**90620206**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
L= 3000 mm	**95600200**	**95600201**	**95600202**	**95600203**	**95600205**	**95620201**	**95620202**	**95620204**	**95620206**
					single bar	double bar			



Dimensions H and b are variable, according to the rating specified in the specifications on page 90-91.

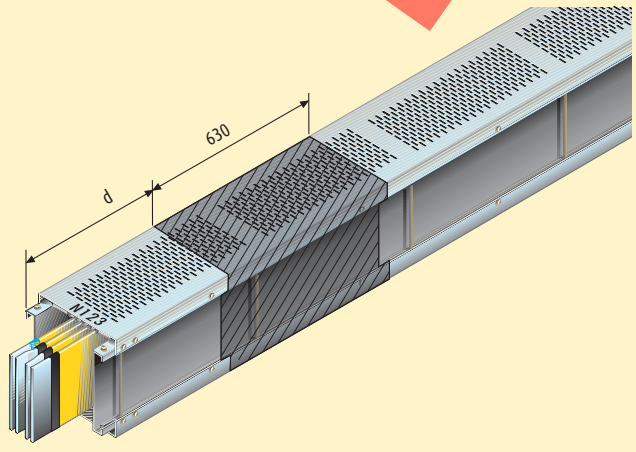
WARNING

The expansion element must be placed in the straight sections of the line with a 35 to 40m length or when there is an expansion joint in the building structure.
(e.g. straight section length m 70 = 1 element with expansion In the middle of the line)
(e.g. straight section length m 120 = 2 elements with expansion every ~40 m)

FIRE BARRIER

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
internal	**956IFB01**	**956IFB01**	**956IFB01**	**956IFB01**	**956IFB02**	**956IFB02**	**956IFB02**	**956IFB02**	**956IFB02**
external	**956EFB01**	**956EFB01**	**956EFB01**	**956EFB01**	**956EFB02**	**956EFB02**	**956EFB02**	**956EFB02**	**956EFB02**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
internal	**956IFB01**	**956IFB01**	**956IFB01**	**956IFB01**	**956IFB01**	**956IFB02**	**956IFB02**	**956IFB02**	**956IFB02**
external	**956EFB01**	**956EFB01**	**956EFB01**	**956EFB01**	**956EFB01**	**956EFB02**	**956EFB02**	**956EFB02**	**956EFB02**
					single bar	double bar			



WARNING

The codes are referred only to the fire barrier, not the straight element.
Dimension "d" must be specified when ordering

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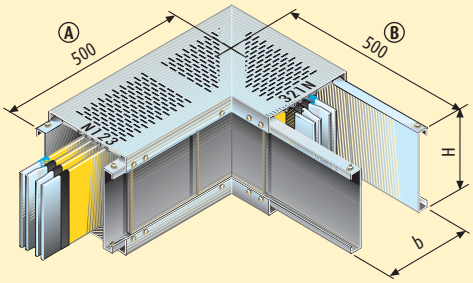
Direction changes

HORIZONTAL ELBOW

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1 Standard RH	**90600401**	**90600402**	**90600403**	**90600405**	**90620401**	**90620402**	**90620403**	**90620405**	**90620406**
Type 2 Standard LH	**90600411**	**90600412**	**90600413**	**90600415**	**90620411**	**90620412**	**90620413**	**90620415**	**90620416**
Type 1 Special RH	**90600421**	**90600422**	**90600423**	**90600425**	**90620421**	**90620422**	**90620423**	**90620425**	**90620426**
Type 2 Special LH	**90600431**	**90600432**	**90600433**	**90600435**	**90620431**	**90620432**	**90620433**	**90620435**	**90620436**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1 Standard RH	**95600400**	**95600401**	**95600402**	**95600403**	**95600405**	**95620401**	**95620402**	**95620404**	**95620406**
Type 2 Standard LH	**95600410**	**95600411**	**95600412**	**95600413**	**95600415**	**95620411**	**95620412**	**95620414**	**95620416**
Type 1 Special RH	**95600420**	**95600421**	**95600422**	**95600423**	**95600425**	**95620421**	**95620422**	**95620424**	**95620426**
Type 2 Special LH	**95600430**	**95600431**	**95600432**	**95600433**	**95600435**	**95620431**	**95620432**	**95620434**	**95620436**
					single bar	double bar			

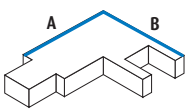


Dimensions H and b are variable, according to the rating specified in the specifications on page 90-91.

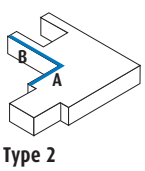
The dimensions are referred to standard elements.

The word "special" is referred to an element with measurements that are different from those shown in the figure, yet included between the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	1000A to 4500A
Copper	1000A to 5000A
(A) min/MAX [mm]	**310/909**
(B) min/MAX [mm]	**500/1099**



Type 1



Type 2

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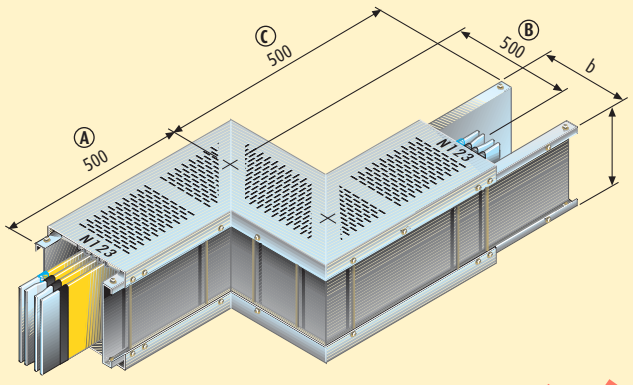
Direction changes

DOUBLE HORIZONTAL ELBOW

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1 RH	**90600441**	**90600442**	**90600443**	**90600445**	**90620441**	**90620442**	**90620443**	**90620445**	**90620446**
Type 2 LH	**90600451**	**90600452**	**90600453**	**90600455**	**90620451**	**90620452**	**90620453**	**90620455**	**90620456**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1 RH	**95600440**	**95600441**	**95600442**	**95600443**	**95600445**	**95620441**	**95620442**	**95620444**	**95620446**
Type 2 LH	**95600450**	**95600451**	**95600452**	**95600453**	**95600455**	**95620451**	**95620452**	**95620454**	**95620456**
					single bar	double bar			

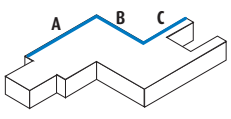


Dimensions H and b are variable, according to the rating specified in the specifications on page 90-91.

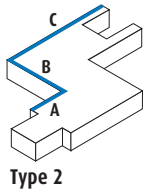
The dimensions are referred to standard elements.

Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	1000A to 4500A
Copper	1000A to 5000A
(A) min/MAX [mm]	**310/909**
(B) min/MAX [mm]	**100/999**
(C) min/MAX [mm]	**500/1099**



Type 1



Type 2

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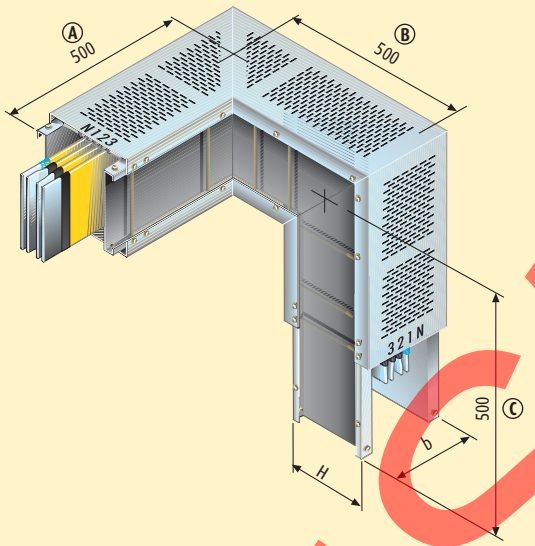
Direction changes

DOUBLE ELBOW HORIZONTAL + VERTICAL

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1	**90600501**	**90600502**	**90600503**	**90600505**	**90620501**	**90620502**	**90620503**	**90620505**	**90620506**
Type 2	**90600511**	**90600512**	**90600513**	**90600515**	**90620511**	**90620512**	**90620513**	**90620515**	**90620516**
Type 3	**90600521**	**90600522**	**90600523**	**90600525**	**90620521**	**90620522**	**90620523**	**90620525**	**90620526**
Type 4	**90600531**	**90600532**	**90600533**	**90600535**	**90620531**	**90620532**	**90620533**	**90620535**	**90620536**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1	**95600500**	**95600501**	**95600502**	**95600503**	**95600505**	**95620501**	**95620502**	**95620504**	**95620506**
Type 2	**95600510**	**95600511**	**95600512**	**95600513**	**95600515**	**95620511**	**95620512**	**95620514**	**95620516**
Type 3	**95600520**	**95600521**	**95600522**	**95600523**	**95600525**	**95620521**	**95620522**	**95620524**	**95620526**
Type 4	**95600530**	**95600531**	**95600532**	**95600533**	**95600535**	**95620531**	**95620532**	**95620534**	**95620536**
					single bar	double bar			

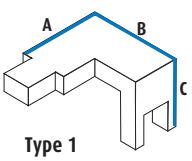


Dimensions H and b are variable, according to the rating specified in the specifications on page 90-91.

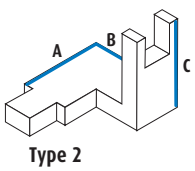
The dimensions are referred to standard elements.

Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

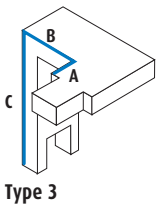
MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	1000A to 4500A
Copper	1000A to 5000A
(A) min/MAX [mm]	**310/909**
(B) min/MAX [mm]	**280/999**
(C) min/MAX [mm]	**500/1099**



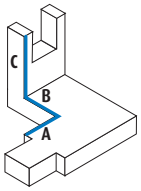
Type 1



Type 2



Type 3



Type 4

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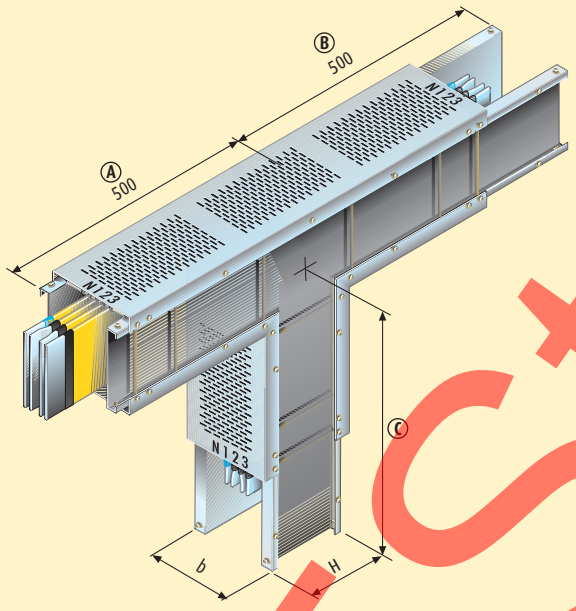
Direction changes

VERTICAL "T"

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1	**90600501**	**90600502**	**90600503**	**90600505**	**90620501**	**90620502**	**90620503**	**90620505**	**90620506**
Type 2	**90600511**	**90600512**	**90600513**	**90600515**	**90620511**	**90620512**	**90620513**	**90620515**	**90620516**
Type 3	**90600521**	**90600522**	**90600523**	**90600525**	**90620521**	**90620522**	**90620523**	**90620525**	**90620526**
Type 4	**90600531**	**90600532**	**90600533**	**90600535**	**90620531**	**90620532**	**90620533**	**90620535**	**90620536**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1	**95600500**	**95600501**	**95600502**	**95600503**	**95600505**	**95620501**	**95620502**	**95620504**	**95620506**
Type 2	**95600510**	**95600511**	**95600512**	**95600513**	**95600515**	**95620511**	**95620512**	**95620514**	**95620516**
Type 3	**95600520**	**95600521**	**95600522**	**95600523**	**95600525**	**95620521**	**95620522**	**95620524**	**95620526**
Type 4	**95600530**	**95600531**	**95600532**	**95600533**	**95600535**	**95620531**	**95620532**	**95620534**	**95620536**
					single bar	double bar			

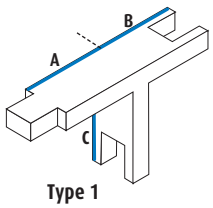


Dimensions H and b are variable, according to the rating specified in the specifications on page 90-91.

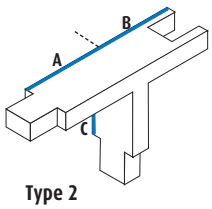
The dimensions are referred to standard elements.

Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

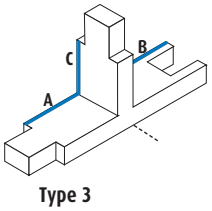
MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	1000A to 4500A
Copper	1000A to 5000A
(A) min/MAX [mm]	**310/1000**
(B) min/MAX [mm]	**500/1099**
(C) min/MAX [mm]	**500/1099**



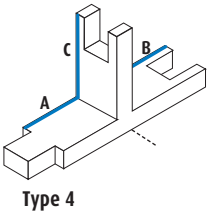
Type 1



Type 2



Type 3



Type 4

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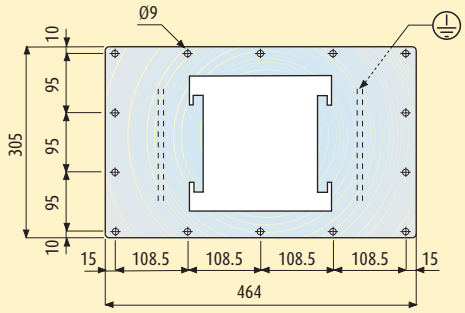
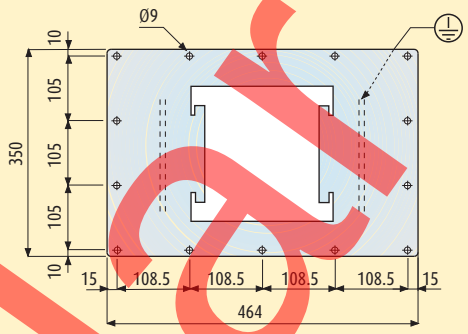
Connection interfaces

COVERPLATE DRILLING DETAILS

Aluminium 1000A-1250A-1600A-2250A-2500A-3200A
Copper 1000A-1250A-1600A-2000A-3000A-3200A-4000A

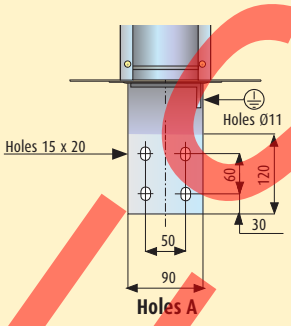


Aluminium 2000A-4000A-4500A
Copper 2500A-5000A

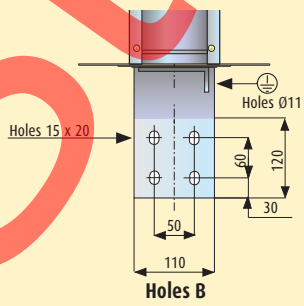


BAR DRILLING DETAILS

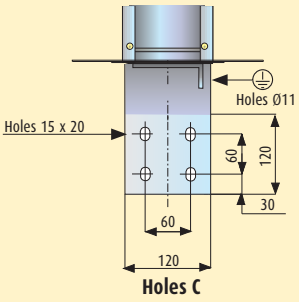
Cu 1000A



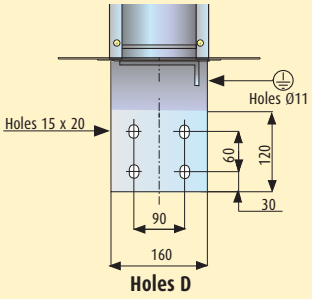
Al 1000A-2250A
Cu 1250A



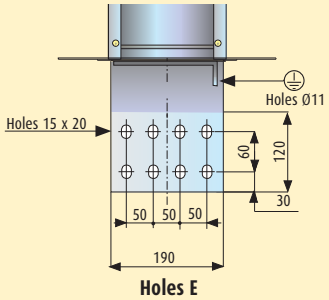
Cu 1600A-3000A-3200A



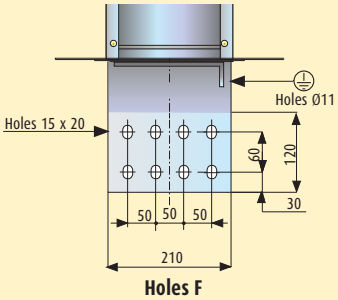
Al 1250A-1600A-2500A-3200A
Cu 2000A-4000A



Al 2000A-4000A
Cu 2500A



Al 4500A
Cu 5000A



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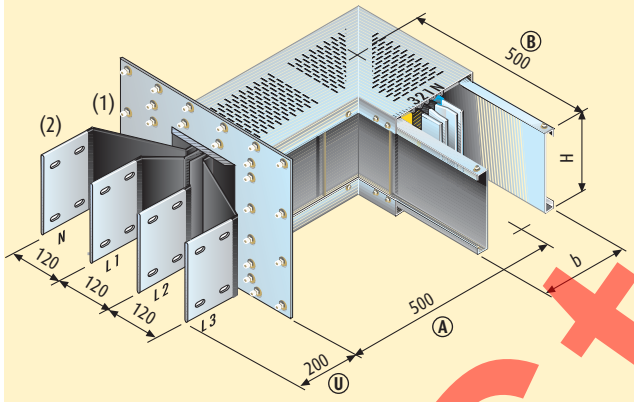
Connection interfaces

CONNECTION INTERFACE + HORIZONTAL ELBOW

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1	**90601401**	**90601402**	**90601403**	**90601405**	**90621401**	**90621402**	**90621403**	**90621405**	**90621406**
Type 2	**90601411**	**90601412**	**90601413**	**90601415**	**90621411**	**90621412**	**90621413**	**90621415**	**90621416**
Type 3	**90601421**	**90601422**	**90601423**	**90601425**	**90621421**	**90621422**	**90621423**	**90621425**	**90621426**
Type 4	**90601431**	**90601432**	**90601433**	**90601435**	**90621431**	**90621432**	**90621433**	**90621435**	**90621436**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1	**95601400**	**95601401**	**95601402**	**95601403**	**95601405**	**95621401**	**95621402**	**95621404**	**95621406**
Type 2	**95601410**	**95601411**	**95601412**	**95601413**	**95601415**	**95621411**	**95621412**	**95621414**	**95621416**
Type 3	**95601420**	**95601421**	**95601422**	**95601423**	**95601425**	**95621421**	**95621422**	**95621424**	**95621426**
Type 4	**95601430**	**95601431**	**95601432**	**95601433**	**95601435**	**95621431**	**95621432**	**95621434**	**95621436**
					single bar	double bar			



Dimensions H and b are variable, according to the rating specified in the specifications on page 90-91.

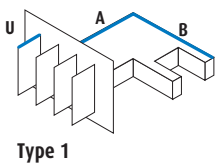
The dimensions are referred to standard elements.

See page 79 for dimensions of coverplate (1) and bars (2)

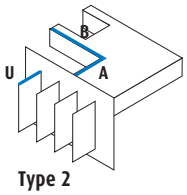
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR	
Aluminium	630A to 4000A
Copper	800A to 5000A
(U) min/MAX [mm]	**200/400**
(A) min/MAX [mm]	**310/1199**
(B) min/MAX [mm]	**500/1099**

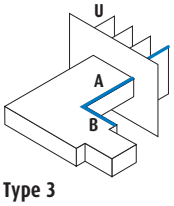
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**200/400**
(A) min/MAX [mm]	**310/1199**
(B) min/MAX [mm]	**500/1099**



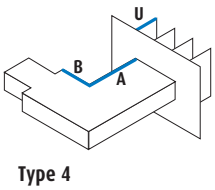
Type 1



Type 2



Type 3



Type 4

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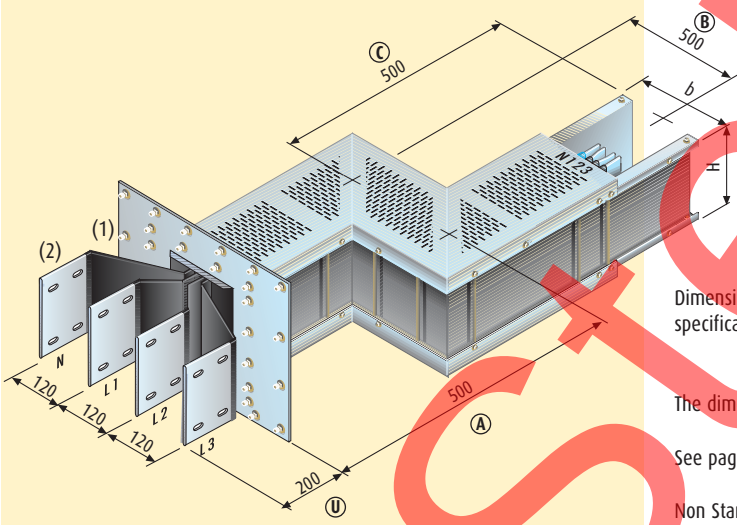
Connection interfaces

CONNECTION INTERFACE + DOUBLE HORIZONTAL ELBOW

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1	**90601441**	**90601442**	**90601443**	**90601445**	**90621441**	**90621442**	**90621443**	**90621445**	**90621446**
Type 2	**90601451**	**90601452**	**90601453**	**90601455**	**90621451**	**90621452**	**90621453**	**90621455**	**90621456**
Type 3	**90601461**	**90601462**	**90601463**	**90601465**	**90621461**	**90621462**	**90621463**	**90621465**	**90621466**
Type 4	**90601471**	**90601472**	**90601473**	**90601475**	**90621471**	**90621472**	**90621473**	**90621475**	**90621476**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1	**95601440**	**95601441**	**95601442**	**95601443**	**95601445**	**95621441**	**95621442**	**95621444**	**95621446**
Type 2	**95601450**	**95601451**	**95601452**	**95601453**	**95601455**	**95621451**	**95621452**	**95621454**	**95621456**
Type 3	**95601460**	**95601461**	**95601462**	**95601463**	**95601465**	**95621461**	**95621462**	**95621464**	**95621466**
Type 4	**95601470**	**95601471**	**95601472**	**95601473**	**95601475**	**95621471**	**95621472**	**95621474**	**95621476**
					single bar	double bar			



Dimensions H and b are variable, according to the rating specified in the specifications on page 94-95.

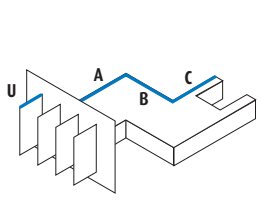
The dimensions are referred to standard elements.

See page 79 for dimensions of coverplate (1) and bars (2)

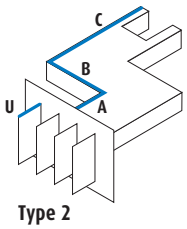
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR	
Aluminium	630A to 4000A
Copper	800A to 5000A
(U) min/MAX [mm]	**200/400**
(A) min/MAX [mm]	**280/1199**
(B) min/MAX [mm]	**100/999**
(C) min/MAX [mm]	**500/1099**

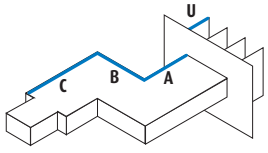
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**200/400**
(A) min/MAX [mm]	**280/1199**
(B) min/MAX [mm]	**100/999**
(C) min/MAX [mm]	**500/1099**



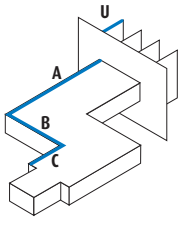
Type 1



Type 2



Type 3



Type 4

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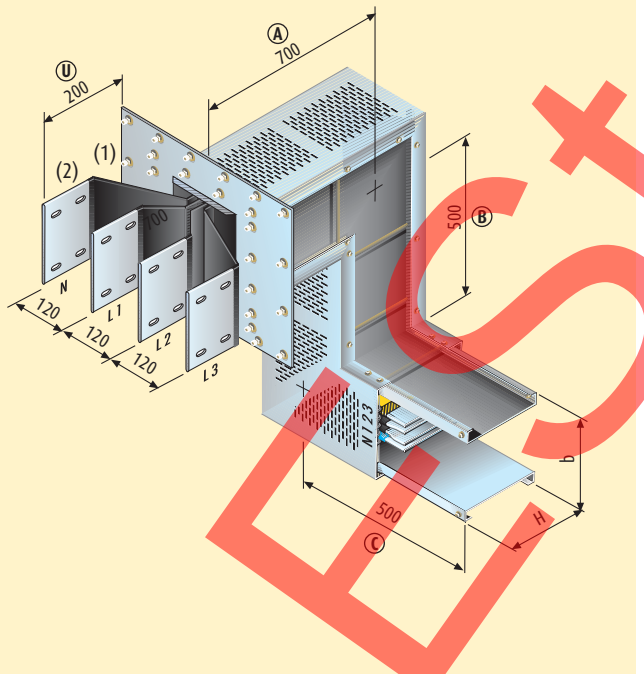
Connection interfaces

CONNECTION INTERFACE + VERTICAL ELBOW + HORIZONTAL ELBOW

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
Type 1	**90601501**	**90601502**	**90601503**	**90601505**	**90621501**	**90621502**	**90621503**	**90621505**	**90621506**
Type 2	**90601511**	**90601512**	**90601513**	**90601515**	**90621511**	**90621512**	**90621513**	**90621515**	**90621516**
Type 3	**90601521**	**90601522**	**90601523**	**90601525**	**90621521**	**90621522**	**90621523**	**90621525**	**90621526**
Type 4	**90601531**	**90601532**	**90601533**	**90601535**	**90621531**	**90621532**	**90621533**	**90621535**	**90621536**
Type 5	**90601541**	**90601542**	**90601543**	**90601545**	**90621541**	**90621542**	**90621543**	**90621545**	**90621546**
Type 6	**90601551**	**90601552**	**90601553**	**90601555**	**90621551**	**90621552**	**90621553**	**90621555**	**90621556**
Type 7	**90601561**	**90601562**	**90601563**	**90601565**	**90621561**	**90621562**	**90621563**	**90621565**	**90621566**
Type 8	**90601571**	**90601572**	**90601573**	**90601575**	**90621571**	**90621572**	**90621573**	**90621575**	**90621576**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
Type 1	**95601500**	**95601501**	**95601502**	**95601503**	**95601505**	**95621501**	**95621502**	**95621504**	**95621506**
Type 2	**95601510**	**95601511**	**95601512**	**95601513**	**95601515**	**95621511**	**95621512**	**95621514**	**95621516**
Type 3	**95601520**	**95601521**	**95601522**	**95601523**	**95601525**	**95621521**	**95621522**	**95621524**	**95621526**
Type 4	**95601530**	**95601531**	**95601532**	**95601533**	**95601535**	**95621531**	**95621532**	**95621534**	**95621536**
Type 5	**95601540**	**95601541**	**95601542**	**95601543**	**95601545**	**95621541**	**95621542**	**95621544**	**95621546**
Type 6	**95601550**	**95601551**	**95601552**	**95601553**	**95601555**	**95621551**	**95621552**	**95621554**	**95621556**
Type 7	**95601560**	**95601561**	**95601562**	**95601563**	**95601565**	**95621561**	**95621562**	**95621564**	**95621566**
Type 8	**95601570**	**95601571**	**95601572**	**95601573**	**95601575**	**95621571**	**95621572**	**95621574**	**95621576**
					single bar	double bar			



Dimensions H and b are variable, according to the rating specified in the specifications on page 94-95.

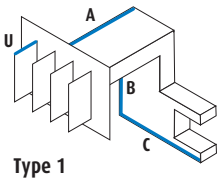
The dimensions are referred to standard elements.

See page 79 for dimensions of coverplate (1) and bars (2)

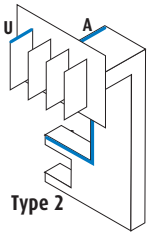
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR	
Aluminium	630A to 4000A
Copper	800A to 5000A
(U) min/MAX [mm]	**200/400**
(A) min/MAX [mm]	**310/1199**
(B) min/MAX [mm]	**280/999**
(C) min/MAX [mm]	**500/1099**

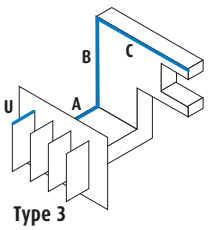
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**200/400**
(A) min/MAX [mm]	**310/1199**
(B) min/MAX [mm]	**280/999**
(C) min/MAX [mm]	**500/1099**



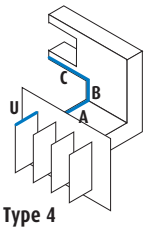
Type 1



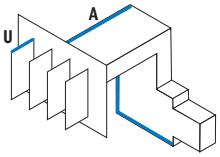
Type 2



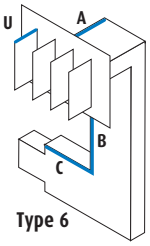
Type 3



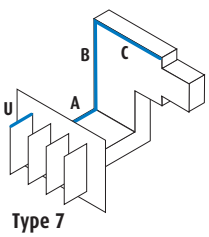
Type 4



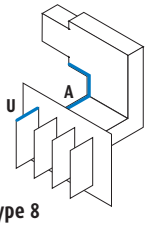
Type 5



Type 6



Type 7



Type 8

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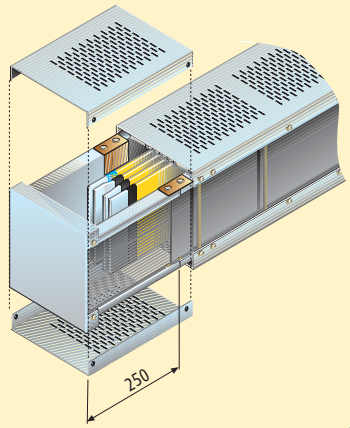
Protection accessories

END COVER

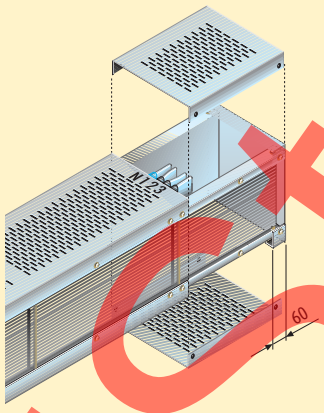
Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
RH	**95503111**	**95503131**	**95503131**	**95503141**	**95513111**	**95513131**	**95513131**	**95513141**	**95513151**
LH	**95503211**	**95503231**	**95503231**	**95503241**	**95513211**	**95513231**	**95513231**	**95513241**	**95513251**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
RH	**95503101**	**95503111**	**95503121**	**95503131**	**95503141**	**95513121**	**95513121**	**95513131**	**95513151**
LH	**95503201**	**95503211**	**95503221**	**95503231**	**95503241**	**95513221**	**95513221**	**95513231**	**95513251**
					single bar	double bar			

Right end cover



Left end cover



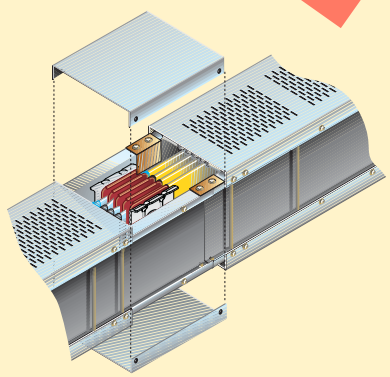
Use RH covers when starting with a LH feed unit or when reaching the LH board.

Use LH covers when starting with a RH feed unit or when reaching the RH board.

IP 31 COVER PLATES

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
IP31 junction	**95600071**	**95600081**	**95600081**	**95600051**	**95610001**	**95610081**	**95610081**	**95610071**	**95610061**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
IP31 junction	**95600061**	**95600071**	**95600091**	**95600081**	**95600051**	**95610091**	**95610091**	**95610081**	**95610061**
					single bar	double bar			



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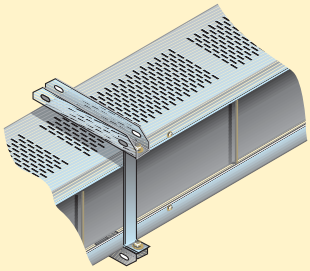
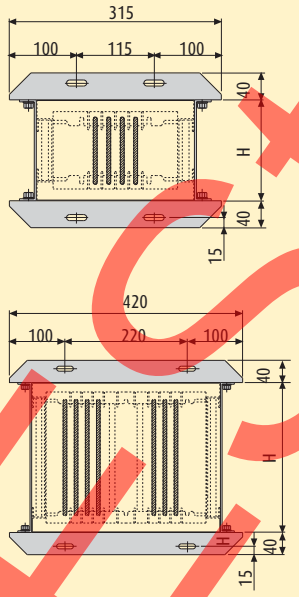
Fixing supports

SUSPENSION BRACKETS

Aluminium	1000A	1250A	1600A	2000A	2250A	2500A	3200A	4000A	4500A
	95503711	**95503731**	**95503731**	**95503741**	**95513711**	**95513731**	**95513731**	**95513741**	**95513751**
				single bar	double bar				

Copper	1000A	1250A	1600A	2000A	2500A	3000A	3200A	4000A	5000A
	95503701	**95503711**	**95503721**	**95503731**	**95503741**	**95513721**	**95513721**	**95513731**	**95513751**
					single bar	double bar			





Dimension H is variable, according to the rating specified in the specifications on page 94-95

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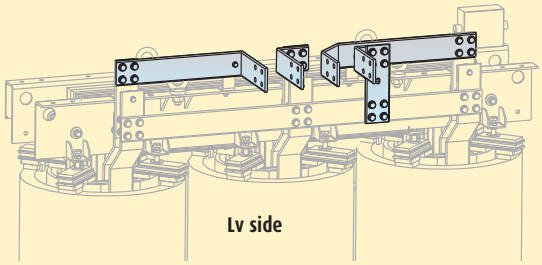
The system:
The EdM transformer advantage

CONNECTION SETUP



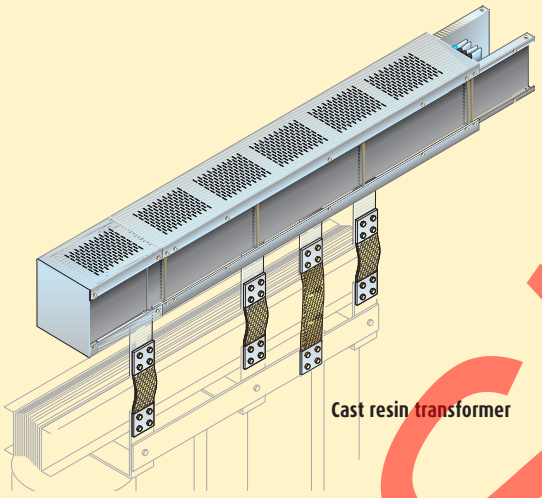
Lv side

The Legrand group product synergy answers to the global installation need.
The EdM cast resin transformers have specifically designed connections for the Zucchini busbars.

The version shown represents one of the standardized solutions.

For the outgoing busbar run from the transformer, see pages 78-85.

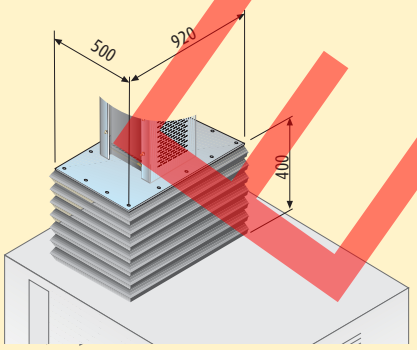
ATR CONNECTION INTERFACE

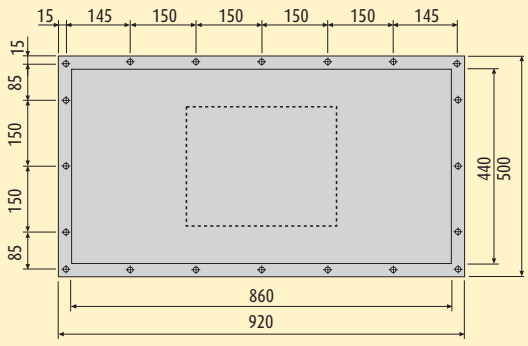


Cast resin transformer

In order to achieve an ATR element, it is necessary to have the technical drawing of the transformer.

PROTECTIVE BELLOWS





All ratings	Item
	SF925040

Recommended for protection of the interface connection on panelboards, dry-type transformer with enclosure and oil-type transformers.
For EdM cast resin transformers, custom-made connections are available upon request (see above)

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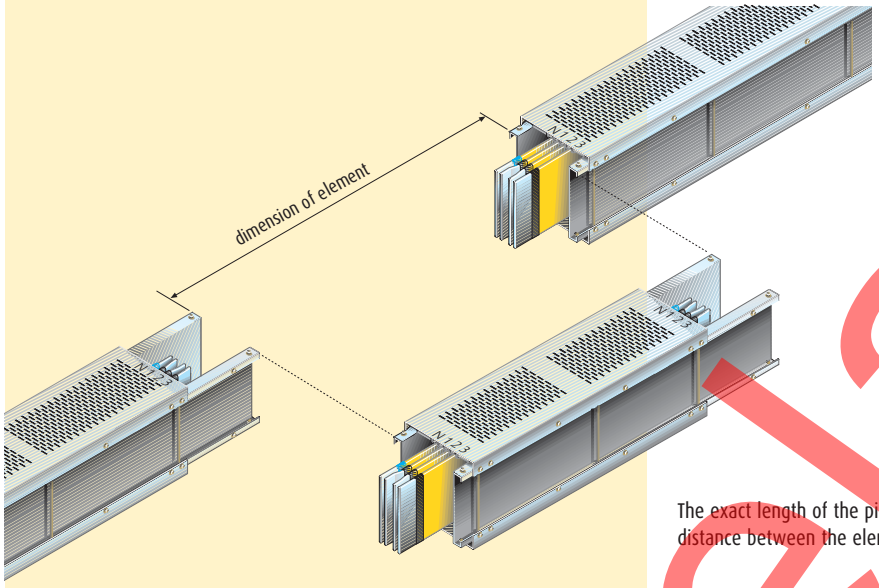
Measurement of special element lengths

MEASUREMENT OF THE DIMENSION TO ORDER A SPECIAL STRAIGHT ELEMENT



The exact length of the piece to be ordered can be determined by measuring the distance between the elements (as shown in the picture).

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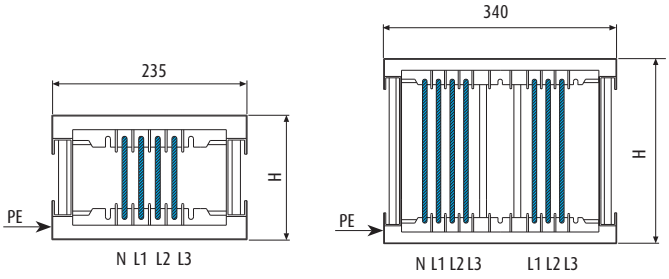
Technical data



COPPER

		HR C1 [3L+N 100%+PE (casing)] single bar					HR C2 [3L+N 50%+PE (casing)] double bar			
Rated current (standard installation)	In [A]	**1000**	**1250**	**1600**	**2000**	**2500**	**3000**	**3200**	**4000**	**5000**
Rating for different installation	In [A]	700	875	1120	1400	1575	2100	2240	2800	3500
Casing overall dimensions	b x H [mm]	235x151	235x171	235x181	235x221	235x251	340x181	340x181	340x221	340x271
Operating/insulation voltage	Ue [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current for three-phase fault (1s)	I_{cw} [kA]rms	40	50	50	60	70	90	90	90	100
Allowable peak current for three-phase fault	I_{pk} [kA]	84	105	105	132	154	198	198	198	220
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	24	30	30	36	42	54	54	54	60
Allowable peak current for single-phase fault	I_{pk} [kA]	50	63	63	76	88	119	119	119	132
Allowable specific energy for three-phase fault	I^2t [MA^2s]	1600	2500	2500	3600	4900	8100	8100	8100	10000
Phase resistance at 20° C	R_{20} [mΩ/m]	0.032	0.029	0.028	0.021	0.016	0.014	0.012	0.009	0.007
Neutral resistance at 20 °C	R_{20} [mΩ/m]	0.032	0.029	0.028	0.021	0.016	0.028	0.025	0.019	0.013
Phase reactance	X [mΩ/m]	0.097	0.076	0.074	0.074	0.040	0.031	0.031	0.026	0.023
Neutral reactance	X_n [mΩ/m]	0.097	0.076	0.074	0.074	0.040	0.062	0.062	0.052	0.046
Phase resistance at thermal conditions	R_t [mΩ/m]	0.043	0.040	0.038	0.029	0.021	0.019	0.017	0.013	0.009
Resistance of the protective conductor	R_{PE} [mΩ/m]	0.119	0.112	0.109	0.098	0.078	0.091	0.091	0.084	0.075
Reactance of the protective conductor	X_{PE} [mΩ/m]	0.130	0.130	0.130	0.130	0.130	0.110	0.110	0.110	0.110
Resistance of the fault loop Phase-PE	R_0 [mΩ/m]	0.161	0.152	0.147	0.126	0.099	0.110	0.108	0.096	0.084
Reactance of the fault loop Phase-Pe (50 Hz)	X_0 [mΩ/m]	0.227	0.206	0.204	0.204	0.170	0.141	0.141	0.136	0.133
Resistance of the fault loop phase-neutral	R_0 [mΩ/m]	0.074	0.069	0.066	0.050	0.037	0.047	0.041	0.031	0.022
Reactance of the fault loop phase-neutral (50 Hz)	X_0 [mΩ/m]	0.227	0.206	0.204	0.204	0.170	0.172	0.172	0.162	0.156
Voltage drop factor with distributed load $\Delta V = k \cdot L \cdot I_e \cdot 10^{-6}$ [V]	k [V/m/A]10^{-6} cosφ = 0.70	85.5	71.1	68.9	63.1	37.5	30.7	29.3	23.6	19.6
	cosφ = 0.75	83.3	69.3	67.2	60.9	36.6	30.2	26.6	23.0	18.9
	cosφ = 0.80	80.0	67.0	64.9	58.3	35.4	29.3	27.7	22.2	18.0
	cosφ = 0.85	75.7	63.9	61.8	54.8	33.7	28.2	26.4	21.0	16.9
	cosφ = 0.90	68.9	59.6	57.6	50.2	31.5	26.6	24.7	18.6	15.6
	cosφ = 0.95	61.4	53.2	51.4	43.5	28.2	24.0	22.1	17.3	13.4
	cosφ = 1.00	37.0	34.4	33.0	24.7	18.2	16.5	14.5	10.8	7.6
Weight	p [kg/m]	34.2	36.4	37.7	46.5	60.3	59.0	64.6	81.0	108.2
Fire load	[kWh/m]	4.1	4.1	4.1	4.1	4.1	6.6	6.6	6.6	6.6
Degree of protection (CEI EN60529)	IP	30-31	30-31	30-31	30-31	30-31	30-31	30-31	30-31	30-31
Joule effect losses at rated current	P [W/m]	128	186	293	343	395	515	513	601	660

Product fully in compliance with the following Standards:
IEC 439-1 and 2, EN 60439 part 1 and 2, DIN VDE 0660 part 500 and 502
Product suitable for these climates:
Constant humid climate (DIN IEC 68 / 2- 3)
Cyclical humid climate (DIN IEC 68 / 2- 30)

Contact Zucchini for the technical data tables of the other versions.

In: rated current referred to a room temperature of 40°C
ΔV : for calculations, see page 95

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Determination of the operating current of a busbar

In order to determine the current whereby it is necessary to choose the busbar, the following planning data must be known:
- type of load inputs: three-phase or single-phase;
- type of circuit input: from one end, from both ends, central input, etc.;
- nominal input voltage;
- number, power and cosφ of loads which are to be fed by the busbar;
- load diversity factor;
- load use nominal factor;
- assumed short circuit current at the input point;
- room temperature;
- type of busbar installation (edgewise, flat, vertical).

When using a three-phase power supply, the operating current is determined by the following formula:

$$I_b = \frac{PTOT \cdot \alpha \cdot \beta \cdot d}{\sqrt{3} \cdot Ue \cdot \cos\varphi_{medium}} [A]$$

where:

I_b	operating current [A];
α	load diversity factor [.];
β	load use factor [.];
d	feed factor [.];
P_{TOT}	sum of the total active power of installed loads [W];
Ue	operating voltage [V];
$\cos\varphi_{medium}$	average load power factor [.];

The "d" input factor has a value of 1 when the busbar is fed from one end only. The value is 1/2 if fed from the centre or if it is fed from each end.

Once the operating current has been determined, choose the busbar with a rated current immediately higher than the one calculated.

All Zucchini products have been designed and tested for an average room temperature of 40°C; should they be installed in rooms with average daily temperatures different from 40 °C the rated current of the busbar should be multiplied by a k1 factor that is greater than the unit for temperatures lower than 40°C and lower than the unit if the room temperature is higher than 40°C.

Room temperature [°C]	15	20	25	30	35	40	45	50	55	60
k_1 thermal correction factor [.]	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

Finally, the following should be considered for the most appropriate busbar choice:

$$I_{nt} \geq I_b \rightarrow I_{nt} = k_1 \cdot I_n$$

where I_{nt} represents the maximum current loaded by a busbar for an indefinite time at the specified room temperature.

CHOICE OF THE RATING WHEN IN THE PRESENCE OF HARMONICS

When in the presence of harmonics, and when using the chosen I_{nt} rated current, the HP busbar to be used shall have the rating specified in the following table:

rated current	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
HP busbar to be used:										
THD ≤ 15%	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
15% < THD ≤ 33%	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A	-
THD > 33%	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A	-	-

VOLTAGE DROP

If the length of the line is particularly long (>100m) it is necessary to check the voltage drop (hereinafter specified as v.d.). If the installation is a three phase system and the power factor is not lower than cosφ = 0.7 the v.d. may be calculated with the coefficients of the voltage drop specified in the technical data table.

$$\Delta v\% = b \cdot \frac{k \cdot I_b \cdot L}{Vn} \cdot 100$$

defined

I_b	= the current that supplies the busbar [A]
Vn	= the voltage power supply of the busbar [V]
L	= the length of the busbar [m]
Δv%	= the voltage drop percentage
b	= the distribution factor of the current [.]
k	= corresponding voltage drop factor a cosφ [V/m/A] (see technical data table)

The current distribution factor "b" depends on how the circuit is fed and on the distribution of the electric loads along the busbar:

b =2	supplies at one end and load at the end of the line
b =1	supplies at one end and with load evenly distributed
b =0.5	supplies at both ends and with load evenly distributed
b =0.5	central supply with loads at both ends
b =0.25	central supply with load distributed evenly

example: SCP 2000A Al for riser mains feed

I_b=	1600A operating current
b=1	supply from one end
k=28.7	see technical data table, page 54 (SCP 2000A Al cosφ = 0.85)
L=	100m line length
Vn=	400V operating voltage

$$\Delta v\% = 1 \cdot \frac{28.7 \cdot 10^{-6} \cdot 1600 \cdot 100}{400} \cdot 100 = 1.15\%$$

SHORT-CIRCUIT CURRENT

The short circuit current value I_{cw} that can be supported by our busbar trunking systems allows for both electrodynamic stress and thermal energy dissipated during the fault.
The busbars must be able to sustain the short circuit current for the entire duration of the fault - i.e. for the time required for the protective device (circ. breacker) to start operating, cutting off the metal continuity and extinguishing the electric arc.

JOULE EFFECT LOSSES

Losses due to the Joule effect are essentially caused by the electrical resistance of the busbar. Lost energy is transformed into heat and contributes to the heating of the conduit.

Three-phase rating	Single phase rating
$P = 3 \cdot R_t \cdot I_b^2 \cdot 10^{-3} [W/m]$	$P = 2 \cdot R_t \cdot I_b^2 \cdot 10^{-3} [W/m]$

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SECTION CONTENTS

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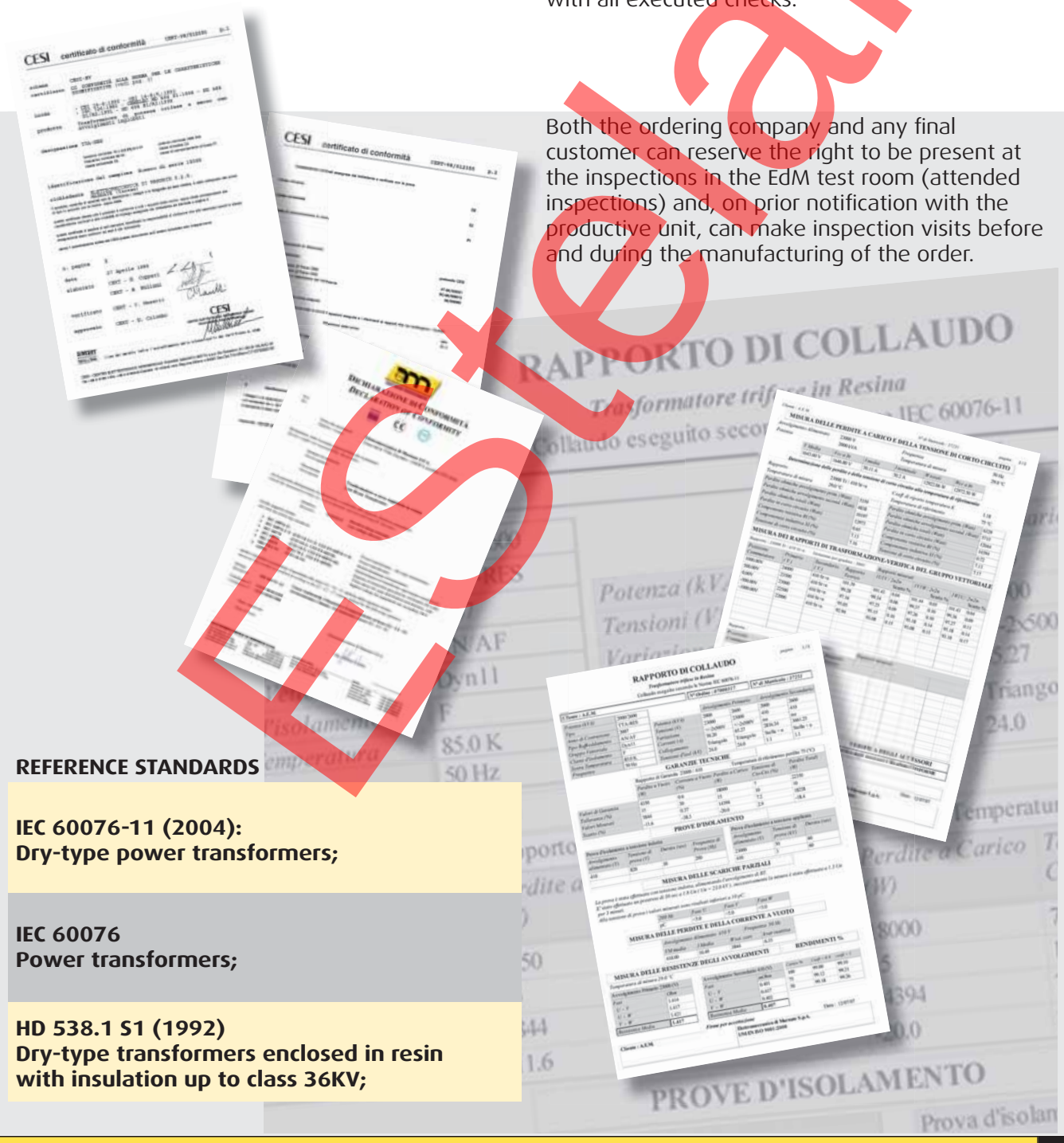
Certified quality

STANDARDS
The safety and continuity of operation of the specific users depend essentially on the reliability of the transformers installed.
EdM cast resin transformers have been designed and manufactured according to the provisions laid down by the main national and international standards.

TESTS AND INSPECTION
Before the **cast resin transformers** produced by EdM are supplied to the customer, they are **individually inspected** thus eventually passing the **acceptance and type-approval tests**, if expressly requested when ordering.
At the end of the acceptance tests a specific inspection report is attached to each transformer with all executed checks.

Both the ordering company and any final customer can reserve the right to be present at the inspections in the EdM test room (attended inspections) and, on prior notification with the productive unit, can make inspection visits before and during the manufacturing of the order.



REFERENCE STANDARDS

IEC 60076-11 (2004):
Dry-type power transformers;

IEC 60076
Power transformers;

HD 538.1 S1 (1992)
Dry-type transformers enclosed in resin with insulation up to class 36KV;

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TRANSFORMERS FOR RECTIFICATION AND TRACTION

Transformers for rectification and traction feature:

- very low total losses
- optimised design on the basis of the specific harmonic load of the application
- small dimensions
- windings designed to optimise the temperature rise of operation
- design resistant to network stresses

TRANSFORMERS FOR WIND AND PHOTOVOLTAIC GENERATORS

Transformers for wind and photovoltaic generators feature:

- very low total losses
- reduced small height and width
- resistance to atmospheric force 125kV
- design optimised for variable loads
- very silent operation
- pre-equipped for the mounting of surge arresters
- designed to be housed into the wind generator

TRANSFORMERS FOR MARINE APPLICATIONS

Transformers for marine applications feature:

- optimised design on the basis of the specific harmonic loads
- small dimensions and weight
- EdM's experience in the specific sector
- the design's adaptability to the installation dimensional conditions
- specific containment and cooling enclosure

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EdM range

EdM standard cast resin transformers are classified on the basis of their use.

SERIES:

CLE – CERTIFIED LOW ELECTROMAGNETIC-EMISSIONS

R – REDUCED LOSSES

N – NORMAL LOSSES

D – DISTRIBUTION

S – STANDARD

EdM cast resin transformers are supplied:
- in standard version (without enclosure IP00)
- with protective enclosure (degree of protection IP21, IP31 or IP23)

STANDARD EQUIPMENT
- Bi-directional castors
- Lifting eyebolts
- Terminals for earth connection

ACCESSORIES ON REQUEST
- Pt100 thermosensors with connection box
- PTC thermistors (as an alternative to the Pt100 thermosensors)
- Electronic unit for thermal control, with inputs for Pt100, without temperature display
- Electronic unit for thermal control, with inputs for Pt100 and temperature display
- Forced ventilation systems to temporarily increase the transformer power
- MV terminations for plug-in connections (Elastimold)
- Protective boxes
- Surge arrester kit
- Antivibrating supports

Contact EdM for further accessories or special versions.

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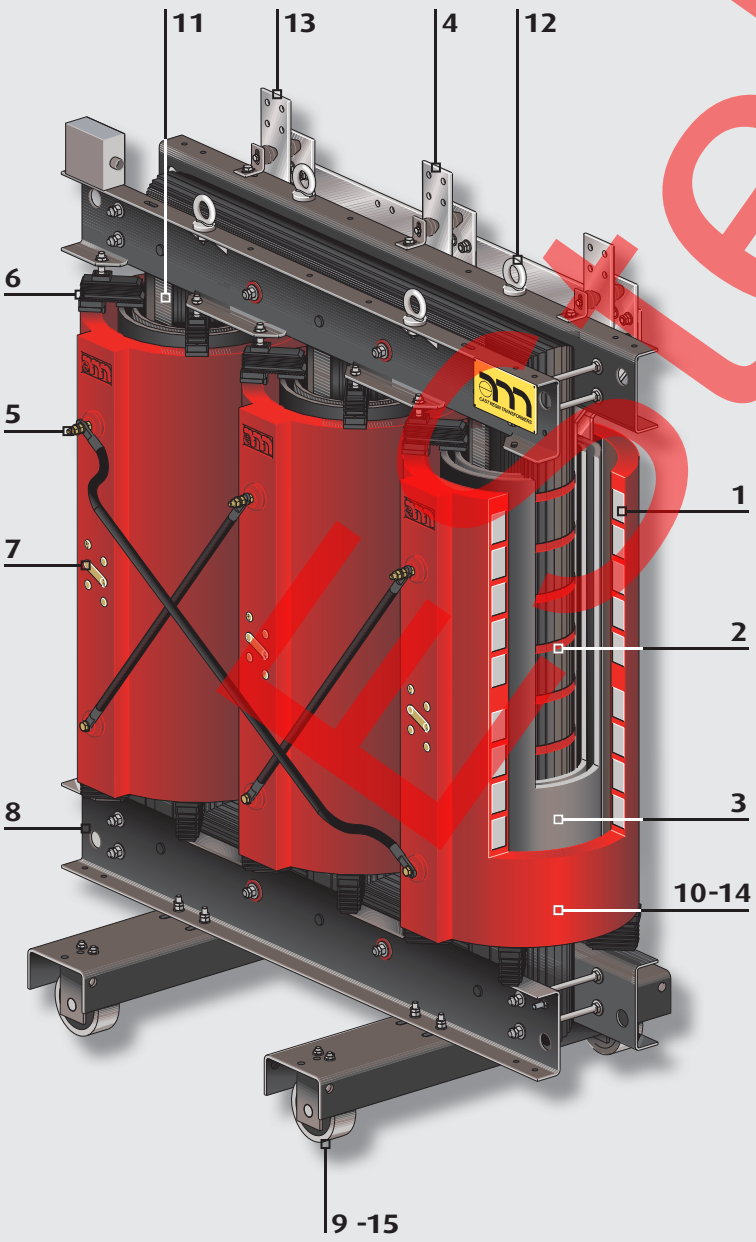
The EdM technology

EdM is distinguished by its high-quality production. Using state-of-the-art constructional techniques and equipment and with constant attention throughout the production process (ISO 9001:2000) and a rigorous check in the final phase, guarantees quality for 100% of the production.



1 MV windings in aluminium strip coils, cast in resin under vacuum.

2 Core in three columns in magnetic lamination with high-permeability oriented crystals, also available with low losses.

3 LV windings in aluminium plate/sheet and vacuum-cast impregnated insulation material.

4 LV connections upwards (standard) or downwards version (on request).

5 MV connections upwards (standard) or downwards version (on request).

6 Rubber inserts attenuate the transmission of vibrations between core and windings and reduce to a minimum the operating noise generated by the transformer as well as absorbing the thermal expansion of the components.

7 Sockets on the MV side to adapt the primary voltage to the mains, which can be set with transformer switched OFF.

8 Structure, armatures and carriage, made in strong painted sheet steel.

9 Carriage with bi-directional castors.

10 The epoxy resin insulation makes the transformer low maintenance.

11 The operating temperature is checked by Pt100 sensor or PTC in the LV windings.

12 Lifting eyebolts conform to the DIN-580 UNI-2947 standards with safety hooking at 4 points.

13 Optional pre-equipment for connection of the LV connection to Zucchini busbar trunking system.

14 Class F insulating material, at 155°C, allowing for a temperature rise of 100°K. (100°C)

15 The carriage allows safe movement and is pre-equipped for the mounting of an IP reinforced boxes.

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The EdM technology
Low voltage winding

The Low Voltage winding, made with special automatic winding machines, consists of one **aluminium strip** with an intermediate **class F or class H** insulating sheet.
This solution gives the winding a certain compactness capable of forming a one-piece cylinder that can withstand possible axial and radial stresses resulting from short circuit phenomena within the system and at the downstream side of the transformer.

All the welds of the conductor strip with the output bars are made by butt welding in inert atmosphere and under electronic control, so as to avoid possible damage.
This winding is then vacuum-impregnated with epoxy resin so as to give it the required compactness and uniformity and to avoid the absorption of humidity throughout the life of the machine, whatever environment it needs to operate in.
This treatment also allows EdM cast resin transformers to comply with the F1 classification according to the Standards and IEC 60076-11.

LV winding system

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EdM cast resin transformers: the perfect solution for any condition

Standard IEC 60076-11 (HDL 464 S1 1988) uses an alphanumeric code to identify the environmental, climatic and fire behaviour classes of dry-type cast resin transformers.
The whole EdM range can also be used to withstand the most severe conditions:

– environmental class E2

– climatic class C2

– fire-behaviour class F1

E2
ENVIRONMENTAL TESTS

E0
No condensation on the transformer, negligible pollution, installation in a clean and dry room.

E1
Occasional condensation and little pollution.

E2
The transformer is subject to consistent condensation, to intense pollution, or to both phenomena.

C2
CLIMATIC TESTS

C1
The transformer will not operate at temperatures lower than -5°C, but may be exposed to -25°C during transport and storage.

C2
The transformer can operate and be transported and stored at temperatures down to -25°C.

F1
FIRE RESISTANCE

F0
The risk of fire is not expected and no measures are taken to limit inflammability.

F1
The transformer is subject to the risk of fire and reduced inflammability is required. Fire on the transformer must be extinguished within laid-down limits.

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EdM: a system under control
Temperature and ventilation surveillance

TEMPERATURE SURVEILLANCE TOOLS
EdM gives you the possibility of combining all its transformers of any size with the best temperature detection tools now available on the market:

- **Thermal sensors - PT100**: positioned by EdM near the warmest area of the winding; they can be programmed according to the specific requirements of any installation.

- **PTC thermistors**: positioned by EdM near the warmest area of the winding; their preset alarm threshold and trip threshold are chosen by the customer when the order is placed.

The wiring of the connections used for the temperature sensors are protected and screened by a special metal plate conduit and are connected to a terminal board installed inside a strong metallic box.

Furthermore, when combined with control sensors, EdM can supply the following, if required:

- **T154 Unit or MT200 Unit**: equipment used for controlling the PT100 thermistors with temperature display, output relay for alarm, optional trip and control of the ventilation bars supplied as a detached part to be installed on the electric panel.

- **T119 Unit**: equipment used for controlling the PTC thermistors with output relay for alarm, optional trip and control of the ventilation bars supplied for being installed on the electric panel.

VENTILATION ACCESSORIES
If required, EdM can directly equip its own transformers at the factory with special ventilation bars.
These special tangential fans are designed to allow temporary and limited increase of the power delivered by the transformer, up to +40% of the rated power.

- **VRT200 Unit**: equipment for automatic activation and control of the fans.

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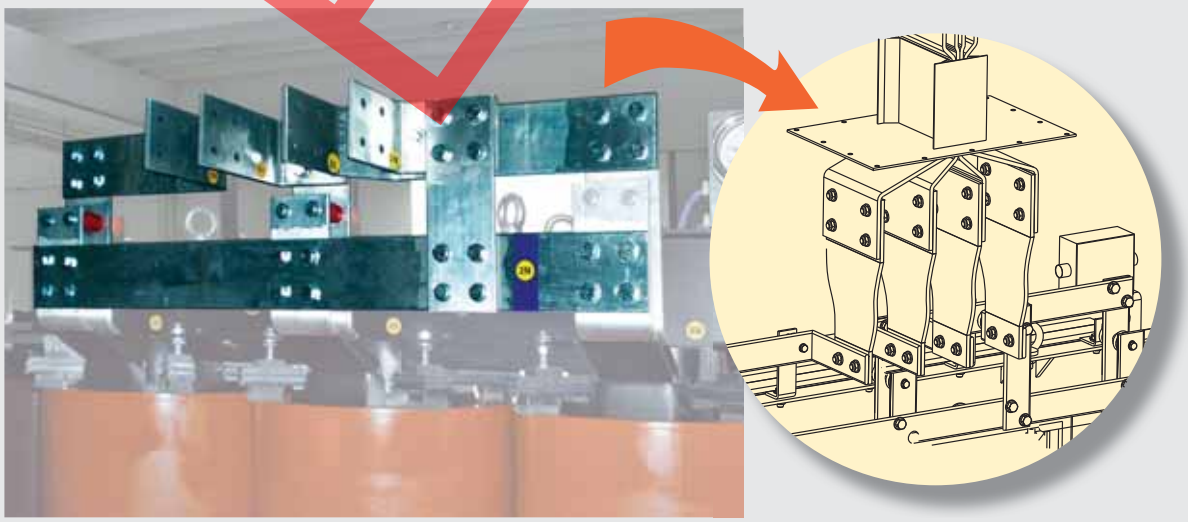
The advantage of choosing Zucchini busbars

The ZUCCHINI SCP busbar trunking system and EdM cast resin transformers, have been designed in perfect synergy for a direct connection.
The versions shown below represent just a few of the standardised solutions.

Transformer				Aluminium busbar	
kVA (kVA)	Insulation class (kV)	400 V current (A)	I_k 6% (kA)	Family	Connection component
630	12 - 17.5 - 24 - 36	910	15.2	SCP 1000 A Al	**60281012P**
800		1155	19.5	SCP 1250 A Al	**60281014P**
1000		1443	24.1	SCP 1600 A Al	**60281016P**
1250		1804	30.1	SCP 2000 A Al	**60281017P**
1600		2310	38.5	SCP 2500 A Al	**60391014P**
2000		2887	48.2	SCP 3200 A Al	**60391016P**
2500		3608	60.2	SCP 4000 A Al	**60391017P**

Transformer				Copper busbar	
kVA (kVA)	Insulation class (kV)	400 V current (A)	I_k 6% (kA)	Family	Connection component
630	12 - 17.5 - 24 - 36	910	15.2	SCP 1000 A Cu	**65281011P**
800		1155	19.5	SCP 1250 A Cu	**65281013P**
1000		1443	24.1	SCP 1600 A Cu	**65281015P**
1250		1804	30.1	SCP 2000 A Cu	**65281016P**
1600		2310	38.5	SCP 2500 A Cu	**65281018P**
2000		2887	48.2	SCP 3200 A Cu	**65391015P**
2500		3608	60.2	SCP 4000 A Cu	**65391016P**
3150		4552	65.0 (I_k 7%)	SCP 5000 A Cu	**65391018P**



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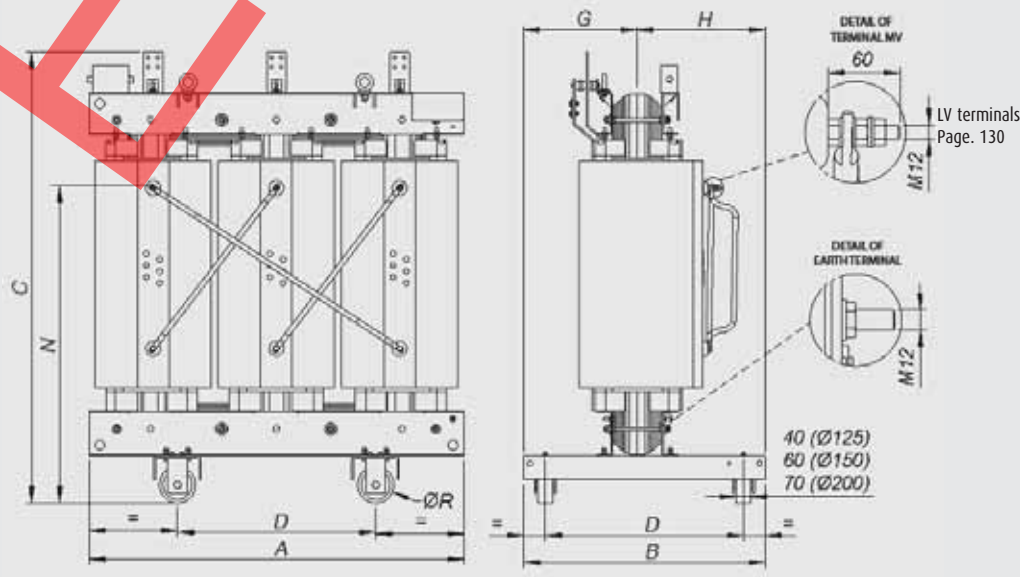
12 kV insulation class
Dimensional information (100-500 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	N	Weight
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
100	**EB2RBCBA**	4	1000	600	1100	520	125	270	330	690	550
	EB2NBCBA	4	1000	600	1100	520	125	270	330	690	550
160	**EC2RBCBA**	4	1050	600	1140	520	125	270	330	710	700
	EC2NBCBA	4	1050	600	1140	520	125	270	330	710	700
200	**ED2RBCBA**	4	1150	620	1190	520	125	270	330	710	800
	ED2NBCBA	4	1150	620	1190	520	125	270	330	710	800
250	**EE2RBCBA**	4	1250	630	1270	520	125	270	330	820	950
	EE2RACBA	6	1250	630	1220	520	125	270	330	800	910
	EE2NBCBA	4	1250	630	1270	520	125	270	330	820	950
	EE2NACBA	6	1250	630	1220	520	125	270	330	800	910
	EE2DACBA	6	1250	640	1300	520	125	270	330	820	980
	EE2SACBA	6	1250	640	1300	520	125	270	330	820	1050
315	**EF2RBCBA**	4	1200	750	1300	670	125	345	405	830	1050
	EF2RACBA	6	1250	750	1250	670	125	345	405	800	1000
	EF2NBCBA	4	1200	750	1300	670	125	345	405	830	1050
	EF2NACBA	6	1250	750	1250	670	125	345	405	800	1000
	EF2DACBA	6	1350	750	1370	670	125	345	405	840	1150
	EF2SACBA	6	1350	750	1370	670	125	345	405	840	1200
400	**EG2RBCBA**	4	1250	750	1370	670	125	345	405	870	1250
	EG2RACBA	6	1300	750	1320	670	125	345	405	850	1200
	EG2NBCBA	4	1250	750	1370	670	125	345	405	870	1250
	EG2NACBA	6	1300	750	1320	670	125	345	405	850	1200
	EG2DACBA	6	1350	750	1430	670	125	345	405	920	1200
	EG2SACBA	6	1350	750	1430	670	125	345	405	920	1250
500	**EH2RBCBA**	4	1250	750	1550	670	125	345	405	1010	1450
	EH2RACBA	6	1300	750	1500	670	125	345	405	1000	1400
	EH2NBCBA	4	1250	750	1550	670	125	345	405	1010	1450
	EH2NACBA	6	1300	750	1500	670	125	345	405	1000	1400
	EH2DACBA	6	1350	750	1540	670	125	345	405	1020	1400
	EH2SACBA	6	1350	750	1540	670	125	345	405	1020	1500

Summary reference values. Use the construction drawing for the design.

All the data given may be modified without warning for reasons of technical production or product improvement.



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12 kV insulation class

Dimensional information (630-3150 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	N	Peso
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
630	**EI2RBCBA**	4	1350	850	1600	670	150	395	455	1060	1650
	EI2RACBA	6	1500	850	1590	670	150	395	455	1060	1600
	EI2NBCBA	4	1350	850	1600	670	150	395	455	1060	1650
	EI2NACBA	6	1500	850	1590	670	150	395	455	1060	1600
	EI2DACBA	6	1500	850	1670	670	150	395	455	1110	1650
	EI2SACBA	6	1500	850	1670	670	150	395	455	1110	1800
800	**EJ2RACBA**	6	1500	850	1740	670	150	395	455	1160	1950
	EJ2NACBA	6	1500	850	1740	670	150	395	455	1160	1950
	EJ2DACBA	6	1500	850	1780	670	150	395	455	1120	1900
	EJ2SACBA	6	1500	850	1780	670	150	395	455	1120	2100
1000	**EK2RACBA**	6	1550	1000	1820	820	150	470	530	1270	2300
	EK2NACBA	6	1550	1000	1820	820	150	470	530	1270	2300
	EK2DACBA	6	1550	1000	1890	820	150	470	530	1280	2300
	EK2SACBA	6	1550	1000	1890	820	150	470	530	1280	2500
1250	**EL2RACBA**	6	1550	1000	2000	820	150	470	530	1340	2700
	EL2NACBA	6	1550	1000	2000	820	150	470	530	1340	2700
	EL2DACBA	6	1550	1000	2030	820	150	470	530	1440	2700
	EL2SACBA	6	1550	1000	2030	820	150	470	530	1440	2900
1600	**EM2RACBA**	6	1650	1000	2180	820	150	470	530	1460	3300
	EM2NACBA	6	1650	1000	2180	820	150	470	530	1460	3300
	EM2DACBA	6.5	1650	1000	2180	820	150	470	530	1560	3400
	EM2SACBA	6.5	1650	1000	2180	820	150	470	530	1560	3750
2000	**EN2RACBA**	6	1800	1310	2260	1070	200	580	730	1570	4000
	EN2NACBA	6	1800	1310	2260	1070	200	580	730	1570	4000
	EN2DACBA	7	1900	1310	2220	1070	200	580	730	1580	4250
	EN2SACBA	7	1900	1310	2220	1070	200	580	730	1580	4550
2500	**EO2RACBA**	6	2050	1310	2390	1070	200	580	730	1650	4800
	EO2NACBA	6	2050	1310	2390	1070	200	580	730	1650	4800
	EO2DACBA	7	2050	1310	2310	1070	200	580	730	1600	4900
	EO2SACBA	7	2050	1310	2310	1070	200	580	730	1600	5250
3150	**EP2RACBA**	7	2150	1310	2400	1070	200	580	730	1670	5400
	EP2NACBA	7	2150	1310	2400	1070	200	580	730	1670	5400

Summary reference values. Use the construction drawing for the design.

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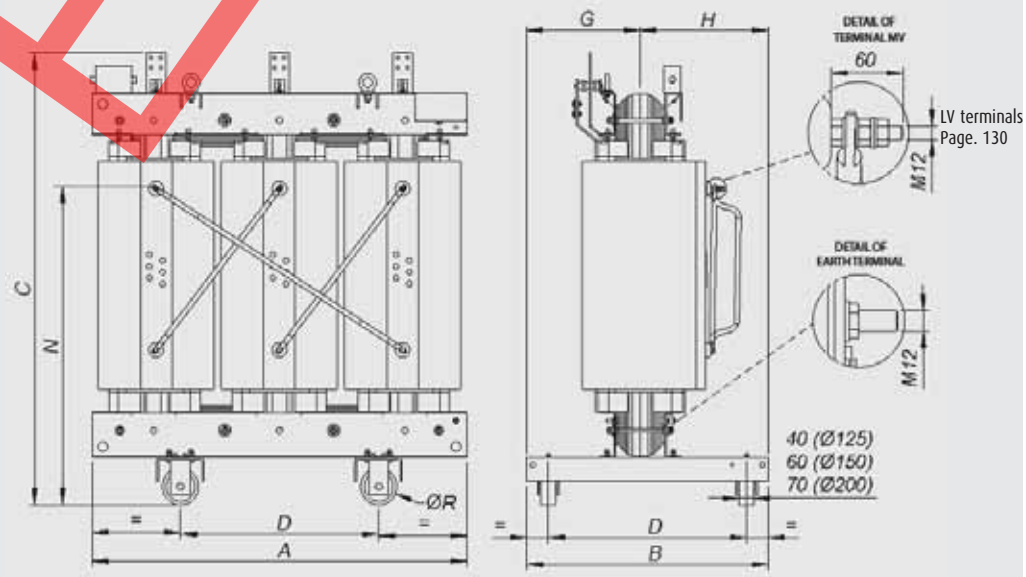

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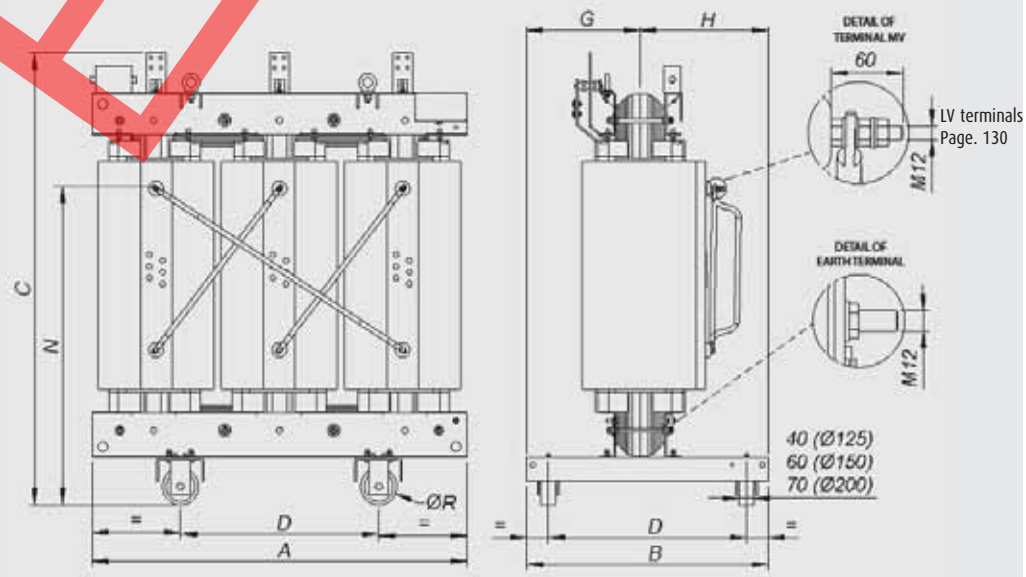
17.5 kV insulation class
Dimensional information (100-630 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	N	Weight
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
100	**EB3RAFBA**	6	1050	600	1090	520	125	270	330	710	560
	EB3NAFBA	6	1050	600	1090	520	125	270	330	710	560
160	**EC3RAFBA**	6	1200	630	1210	520	125	270	330	720	750
	EC3NAFBA	6	1200	630	1210	520	125	270	330	720	750
200	**ED3RAFBA**	6	1250	630	1230	520	125	270	330	730	800
	ED3NAFBA	6	1250	630	1230	520	125	270	330	730	800
250	**EE3RAFBA**	6	1250	640	1240	520	125	270	330	740	950
	EE3NAFBA	6	1250	640	1240	520	125	270	330	740	950
	EE3DAFBA	6	1250	640	1300	520	125	270	330	820	980
	EE3SAFBA	6	1250	640	1300	520	125	270	330	820	1050
315	**EF3RAFBA**	6	1250	750	1300	670	125	345	405	840	1050
	EF3NAFBA	6	1250	750	1300	670	125	345	405	840	1050
	EF3DAFBA	6	1350	750	1370	670	125	345	405	840	1150
	EF3SAFBA	6	1350	750	1370	670	125	345	405	840	1200
400	**EG3RAFBA**	6	1350	750	1390	670	125	345	405	910	1250
	EG3NAFBA	6	1350	750	1390	670	125	345	405	910	1250
	EG3DAFBA	6	1350	750	1430	670	125	345	405	920	1200
	EG3SAFBA	6	1350	750	1430	670	125	345	405	920	1250
500	**EH3RAFBA**	6	1350	750	1520	670	125	345	405	940	1400
	EH3NAFBA	6	1350	750	1520	670	125	345	405	940	1400
	EH3DAFBA	6	1350	750	1540	670	125	345	405	1020	1400
	EH3SAFBA	6	1350	750	1540	670	125	345	405	1020	1500
630	**EI3RAFBA**	6	1500	850	1630	670	150	395	455	1070	1700
	EI3NAFBA	6	1500	850	1630	670	150	395	455	1070	1700
	EI3DAFBA	6	1500	850	1670	670	150	395	455	1110	1650
	EI3SAFBA	6	1500	850	1670	670	150	395	455	1110	1800

Summary reference values. Use the construction drawing for the design.

All the data given may be modified without warning for reasons of technical production or product improvement.



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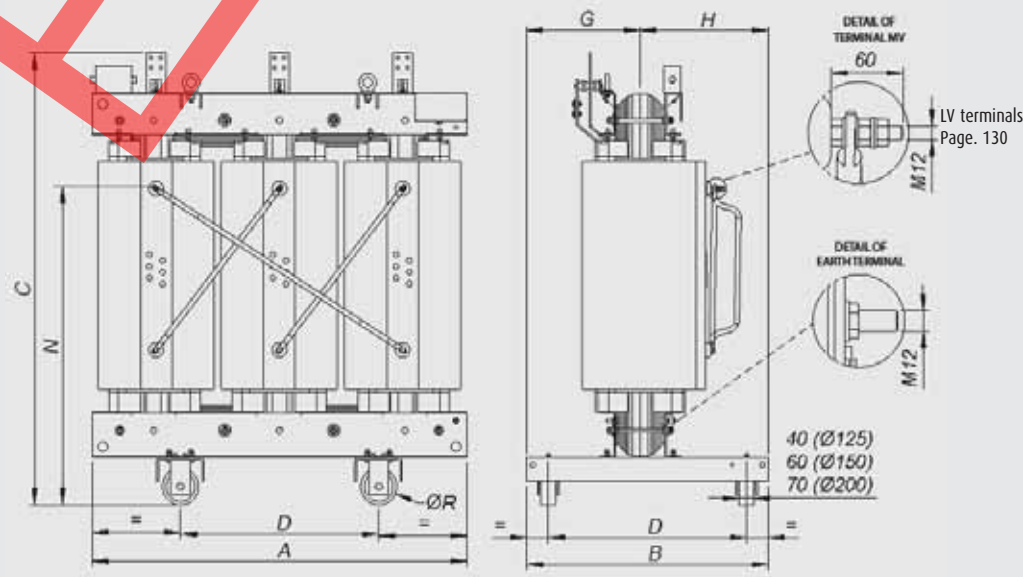
17.5 kV insulation class
Dimensional information (800-3150 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	M	Weight
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
800	**EJ3RAFBA**	6	1500	850	1780	670	150	395	455	1170	2000
	EJ3NAFBA	6	1500	850	1780	670	150	395	455	1170	2000
	EJ3DAFBA	6	1500	850	1780	670	150	395	455	1120	1900
	EJ3SAFBA	6	1500	850	1780	670	150	395	455	1120	2100
1000	**EK3RAFBA**	6	1550	1000	1870	820	150	470	530	1290	2300
	EK3NAFBA	6	1550	1000	1870	820	150	470	530	1290	2300
	EK3DAFBA	6	1550	1000	1890	820	150	470	530	1280	2300
	EK3SAFBA	6	1550	1000	1890	820	150	470	530	1280	2500
1250	**EL3RAFBA**	6	1550	1000	2010	820	150	470	530	1350	2750
	EL3NAFBA	6	1550	1000	2010	820	150	470	530	1350	2750
	EL3DAFBA	6	1550	1000	2030	820	150	470	530	1440	2700
	EL3SAFBA	6	1550	1000	2030	820	150	470	530	1440	2900
1600	**EM3RAFBA**	6	1650	1000	2190	820	150	470	530	1470	3300
	EM3NAFBA	6	1650	1000	2190	820	150	470	530	1470	3300
	EM3DAFBA	6.5	1650	1000	2180	820	150	470	530	1560	3400
	EM3SAFBA	6.5	1650	1000	2180	820	150	470	530	1560	3750
2000	**EN3RAFBA**	6	1800	1310	2250	1070	200	580	730	1580	4000
	EN3NAFBA	6	1800	1310	2250	1070	200	580	730	1580	4000
	EN3DAFBA	7	1900	1310	2220	1070	200	580	730	1580	4250
	EN3SAFBA	7	1900	1310	2220	1070	200	580	730	1580	4550
2500	**EO3RAFBA**	6	1950	1310	2320	1070	200	580	730	1600	4950
	EO3NAFBA	6	1950	1310	2320	1070	200	580	730	1600	4950
	EO3DAFBA	7	2050	1310	2310	1070	200	580	730	1600	4900
	EO3SAFBA	7	2050	1310	2310	1070	200	580	730	1600	5250
3150	**EP3RAFBA**	7	2150	1310	2350	1070	200	580	730	1610	5750
	EP3NAFBA	7	2150	1310	2350	1070	200	580	730	1610	5750

Summary reference values. Use the construction drawing for the design.

All the data given may be modified without warning for reasons of technical production or product improvement.



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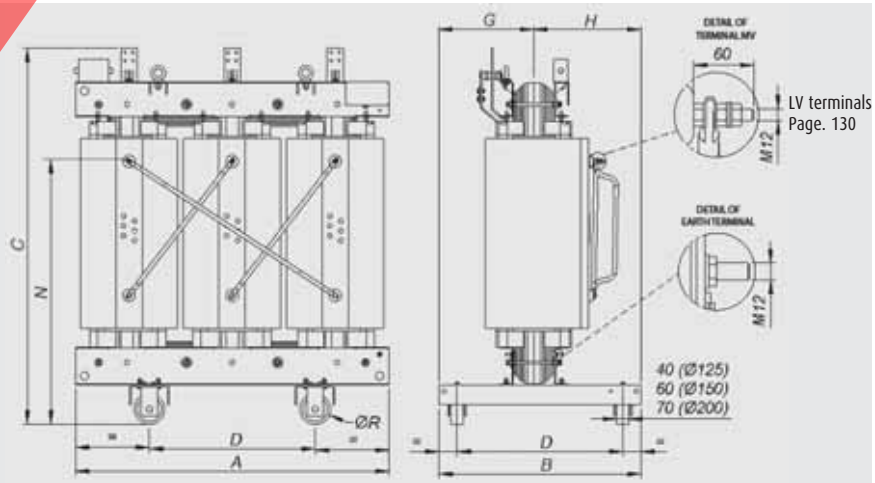
24 kV insulation class
Dimensional information (100-500 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	N	Weight
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
100	**EB4RBGBA**	4	1200	600	1160	520	125	270	330	730	630
	EB4RAGBA	6	1050	600	1110	520	125	270	330	710	570
	EB4NBGBA	4	1200	600	1160	520	125	270	330	730	630
	EB4NAGBA	6	1050	600	1110	520	125	270	330	710	570
160	**EC4RBGBA**	4	1250	640	1260	520	125	270	330	740	900
	EC4RAGBA	6	1250	640	1240	520	125	270	330	730	800
	EC4NBGBA	4	1250	640	1260	520	125	270	330	740	900
	EC4NAGBA	6	1250	640	1240	520	125	270	330	730	800
200	**ED4RBGBA**	4	1350	640	1320	520	125	270	330	750	1030
	ED4RAGBA	6	1250	640	1250	520	125	270	330	740	900
	ED4NBGBA	4	1350	640	1320	520	125	270	330	750	1030
	ED4NAGBA	6	1250	640	1250	520	125	270	330	740	900
250	**EE4RBGBA**	4	1350	640	1360	520	125	270	330	830	1150
	EE4RAGBA	6	1350	640	1260	520	125	270	330	750	1000
	EE4NBGBA	4	1350	640	1360	520	125	270	330	830	1150
	EE4NAGBA	6	1350	640	1260	520	125	270	330	750	1000
	EE4DAGBA	6	1350	640	1360	520	125	270	330	850	1050
	EE4SAGBA	6	1350	640	1360	520	125	270	330	850	1150
315	**EF4RBGBA**	4	1350	750	1450	670	125	345	405	880	1350
	EF4RAGBA	6	1350	750	1350	670	125	345	405	860	1200
	EF4NBGBA	4	1350	750	1450	670	125	345	405	880	1350
	EF4NAGBA	6	1350	750	1350	670	125	345	405	860	1200
	EF4DAGBA	6	1350	750	1410	670	125	345	405	860	1200
	EF4SAGBA	6	1350	750	1410	670	125	345	405	860	1250
400	**EG4RBGBA**	4	1450	750	1530	670	125	345	405	900	1500
	EG4RAGBA	6	1500	750	1440	670	125	345	405	880	1350
	EG4NBGBA	4	1450	750	1530	670	125	345	405	900	1500
	EG4NAGBA	6	1500	750	1440	670	125	345	405	880	1350
	EG4DAGBA	6	1500	750	1510	670	125	345	405	1020	1350
	EG4SAGBA	6	1500	750	1510	670	125	345	405	1020	1450
500	**EH4RBGBA**	4	1450	750	1610	670	125	345	405	980	1640
	EH4RAGBA	6	1500	750	1560	670	125	345	405	960	1500
	EH4NBGBA	4	1450	750	1610	670	125	345	405	980	1640
	EH4NAGBA	6	1500	750	1560	670	125	345	405	960	1500
	EH4DAGBA	6	1500	750	1570	670	125	345	405	960	1550
	EH4SAGBA	6	1500	750	1570	670	125	345	405	960	1650

Summary reference values. Use the construction drawing for the design.

All the data given may be modified without warning for reasons of technical production or product improvement.



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24 kV insulation class
Dimensional information (630-3150 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	N	Weight
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
630	**EI4RBGBA**	4	1500	850	1690	670	150	395	455	1100	2000
	EI4RAGBA	6	1500	850	1650	670	150	395	455	1080	1800
	EI4NBGBA	4	1500	850	1690	670	150	395	455	1100	2000
	EI4NAGBA	6	1500	850	1650	670	150	395	455	1080	1800
	EI4DAGBA	6	1500	850	1700	670	150	395	455	1090	1800
	EI4SAGBA	6	1500	850	1700	670	150	395	455	1090	1950
800	**EJ4RAGBA**	6	1550	850	1810	670	150	395	455	1200	2100
	EJ4NAGBA	6	1550	850	1810	670	150	395	455	1200	2100
	EJ4DAGBA	6	1550	850	1850	670	150	395	455	1300	2150
	EJ4SAGBA	6	1550	850	1850	670	150	395	455	1300	2350
1000	**EK4RAGBA**	6	1650	1000	1890	820	150	470	530	1310	2500
	EK4NAGBA	6	1650	1000	1890	820	150	470	530	1310	2500
	EK4DAGBA	6	1650	1000	1930	820	150	470	530	1300	2550
	EK4SAGBA	6	1650	1000	1930	820	150	470	530	1300	2800
1250	**EL4RAGBA**	6	1650	1000	2030	820	150	470	530	1370	2900
	EL4NAGBA	6	1650	1000	2030	820	150	470	530	1370	2900
	EL4DAGBA	6	1650	1000	2070	820	150	470	530	1460	3000
	EL4SAGBA	6	1650	1000	2070	820	150	470	530	1460	3250
1600	**EM4RAGBA**	6	1750	1000	2200	820	150	470	530	1480	3550
	EM4NAGBA	6	1750	1000	2200	820	150	470	530	1480	3550
	EM4DAGBA	6.5	1800	1000	2250	820	150	470	530	1590	3600
	EM4SAGBA	6.5	1800	1000	2250	820	150	470	530	1590	3950
2000	**EN4RAGBA**	6	1900	1310	2270	1070	200	580	730	1590	4300
	EN4NAGBA	6	1900	1310	2270	1070	200	580	730	1590	4300
	EN4DAGBA	7	1900	1310	2270	1070	200	580	730	1590	4500
	EN4SAGBA	7	1900	1310	2270	1070	200	580	730	1590	4900
2500	**EO4RAGBA**	6	1950	1310	2350	1070	200	580	730	1610	5250
	EO4NAGBA	6	1950	1310	2350	1070	200	580	730	1610	5250
	EO4DAGBA	7	2050	1310	2310	1070	200	580	730	1600	5200
	EO4SAGBA	7	2050	1310	2310	1070	200	580	730	1600	5650
3150	**EP4RAGBA**	7	2250	1310	2400	1070	200	580	730	1670	6250
	EP4NAGBA	7	2250	1310	2400	1070	200	580	730	1670	6250

Summary reference values. Use the construction drawing for the design.

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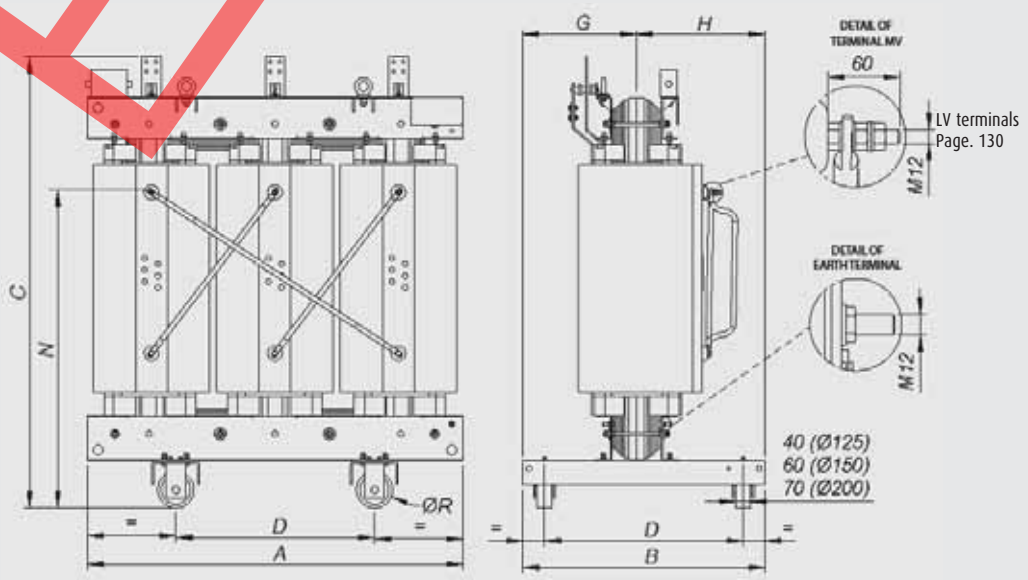

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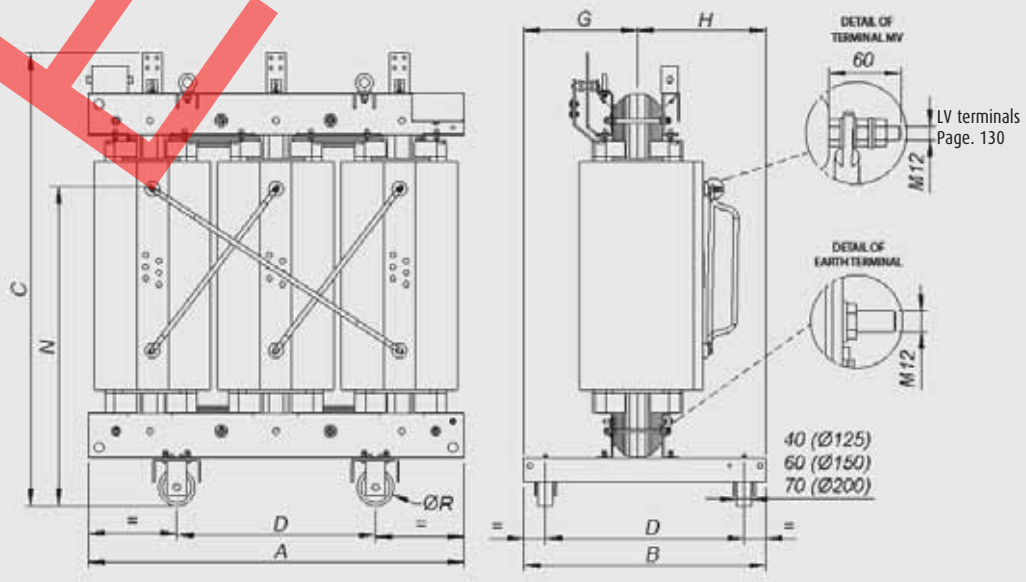
36 kV insulation class
Dimensional information (250-3000 kVA)

DIMENSIONS AND WEIGHT

kVA	Item	Uk%	A	B	C	D	ØR	G	H	N	Weight
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
250	**EE5NAIBA**	6	1600	830	1430	670	125	345	485	880	1380
315	**EF5NAIBA**	6	1600	830	1480	670	125	345	485	900	1500
400	**EG5NAIBA**	6	1650	880	1600	670	150	395	485	1030	1700
500	**EH5NAIBA**	6	1650	890	1700	670	150	395	495	1110	1900
630	**EI5NAIBA**	6	1750	900	1800	670	150	395	515	1180	2250
800	**EJ5NAIBA**	6	1750	910	1920	670	150	395	505	1250	2700
1000	**EK5NAIBA**	7	1900	1000	2030	820	150	470	530	1350	3100
1250	**EL5NAIBA**	8	1900	1000	2180	820	150	470	530	1480	3400
1600	**EM5NAIBA**	8	1950	1020	2300	820	150	470	550	1500	4050
2000	**EN5NAIBA**	8	2050	1310	2320	1070	200	580	730	1520	4900
2500	**EO5NAIBA**	8	2250	1310	2430	1070	200	580	730	1640	6000
3000	**EP5NAIBA**	8	2350	1310	2550	1070	200	580	730	1820	7000

Summary reference values. Use the construction drawing for the design.

All the data given may be modified without warning for reasons of technical production or product improvement.



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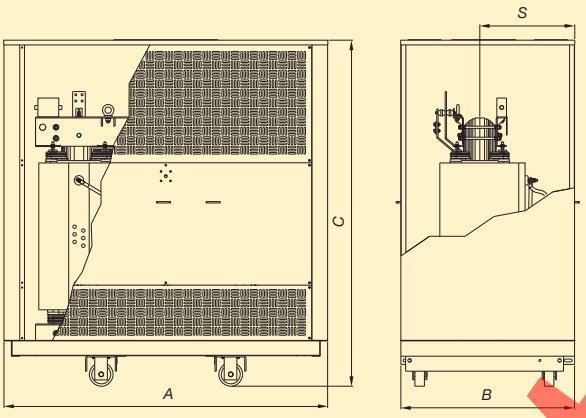
Enclosures

TECHNICAL DATA from 100 to 3150 kVA



Colour RAL 7032
AREL lock on box code 230076

Degree of protection: IP21-IP31-IP23

Class 12-17.5-24 kV

KVA	Item	A [mm]	B [mm]	C [mm]	S [mm]	Weight [kg]	Degree of protection Walls	Base
100	**230316**						IP21	
	230353	1600	900	1470	500	120	IP31	IP20
	230288						IP23	
160	**230316**						IP21	
	230353	1600	900	1470	500	120	IP31	IP20
	230288						IP23	
200	**230316**						IP21	
	230353	1600	900	1470	500	120	IP31	IP20
	230288						IP23	
250	**230211**						IP21	
	230263	1700	950	1580	405	140	IP31	IP20
	230273						IP23	
315	**230211**						IP21	
	230263	1700	950	1580	405	140	IP31	IP20
	230273						IP23	
400	**230212**						IP21	
	230234	1800	1000	1680	405	160	IP31	IP20
	230215						IP23	
500	**230212**						IP21	
	230234	1800	1000	1680	405	160	IP31	IP20
	230215						IP23	
630	**230204**						IP21	
	230222	1900	1050	1950	575	180	IP31	IP20
	230277						IP23	
800	**230204**						IP21	
	230222	1900	1050	1950	575	180	IP31	IP20
	230277						IP23	
1000	**230213**						IP21	
	230223	2050	1100	2200	600	210	IP31	IP20
	230221						IP23	
1250	**230213**						IP21	
	230223	2050	1100	2200	600	210	IP31	IP20
	230221						IP23	
1600	**230214**						IP21	
	230249	2300	1310	2500	730	280	IP31	IP20
	230267						IP23	
2000	**230214**						IP21	
	230249	2300	1310	2500	730	280	IP31	IP20
	230267						IP23	
2500	**230287**						IP21	
	230371	2500	1310	2700	730	300	IP31	IP20
	230309						IP23	
3150	**230287**						IP21	
	230371	2500	1310	2700	730	300	IP31	IP20
	230309						IP23	

For Class 36 kV boxes dimensions and weight on request

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