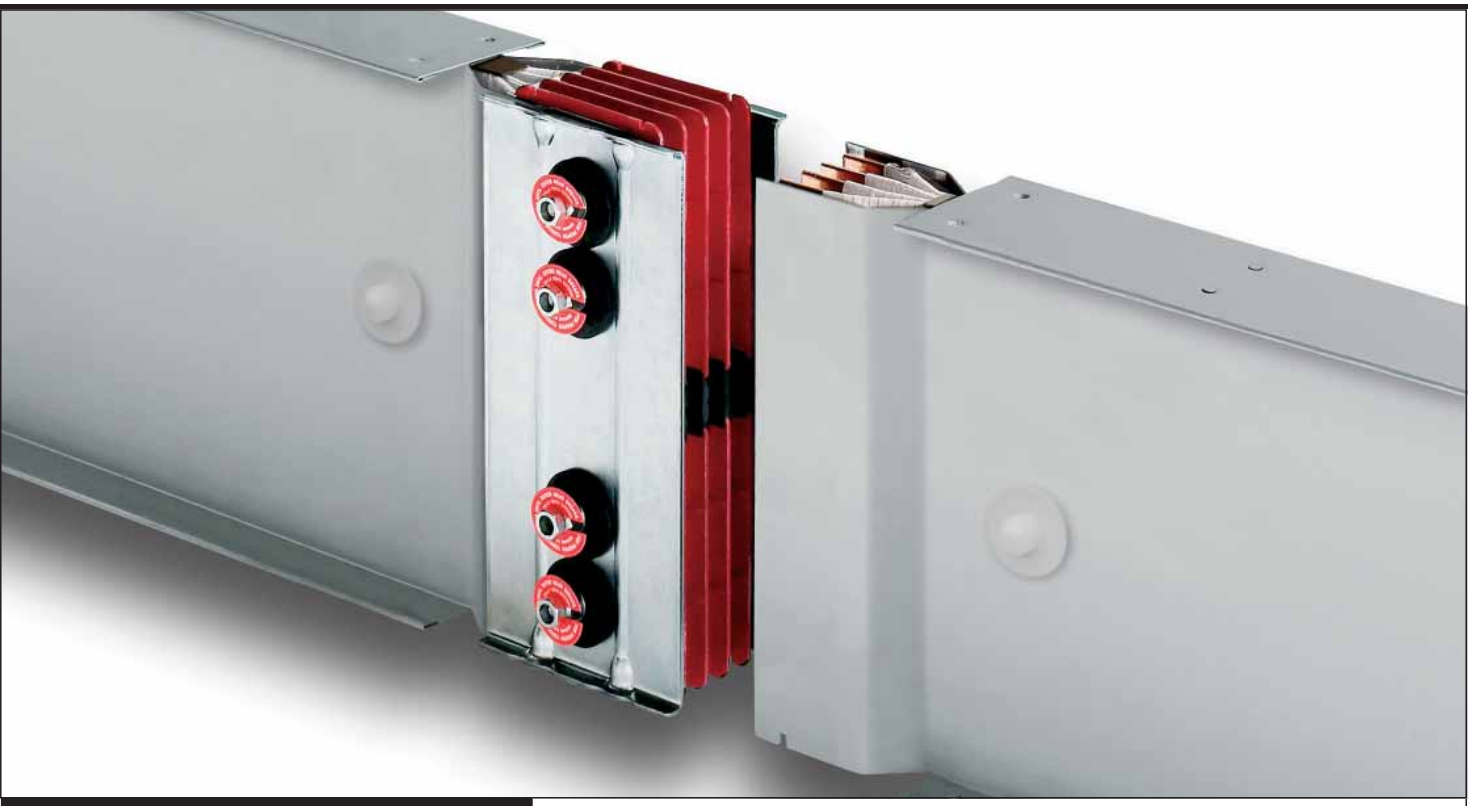
HIGH POWER
General contents

SUPER COMPACT - SCP



SECTION CONTENTS

SCP Features

SCP is the Zucchini line used for transport and distribution of High Power, and is also highly valued in rising mains.
The applications include all industrial, commercial and service sector buildings (factories, banks, trade and business centres, hospitals, etc.)

The Super Compact SCP line is available in the standard range: **from 630A to 4000A** with **aluminum alloy conductors and from 800A to 5000A** with **copper** conductors.
The super-compact dimensions of the SCP enhance **its resistance to short circuit stresses**; in addition, they can reduce the impedance of the circuit by controlling the voltage drops and allow for the installation of high power electrical systems, even in extremely confined spaces.
SCP is available with **a wide selection of tap-off boxes that range from 63A up to 1250A**, thus allowing you to locally protect and feed different types of loads by housing protective devices such as fuses, MCCBs and motorised switches.
SCP, as all Zucchini products, is not only **in compliance with** the harmonised **Standards CEI EN 60439-1 / 2** but also answers specifically to many clients needs for more severe conditions of use. Thus the **rated current** of Zucchini's busbar trunking systems is always **referred to the average ambient temperature of 40 °C** against the 35 °C required by the Standard, thus providing the markets with suitably **upgraded** products.
The nominal range of all SCP Super-Compact busbars is guaranteed both for horizontal installations (flat and edgewise) and for vertical installations without downgrading.
SCP busbar trunking systems are designed so that they can be **maintenance-free**, except for the periodic and compulsory inspections required by the Standard IEC 60364.
The tightening torque inspection of the junction can be carried out by qualified personnel, even when the busbar is energized.

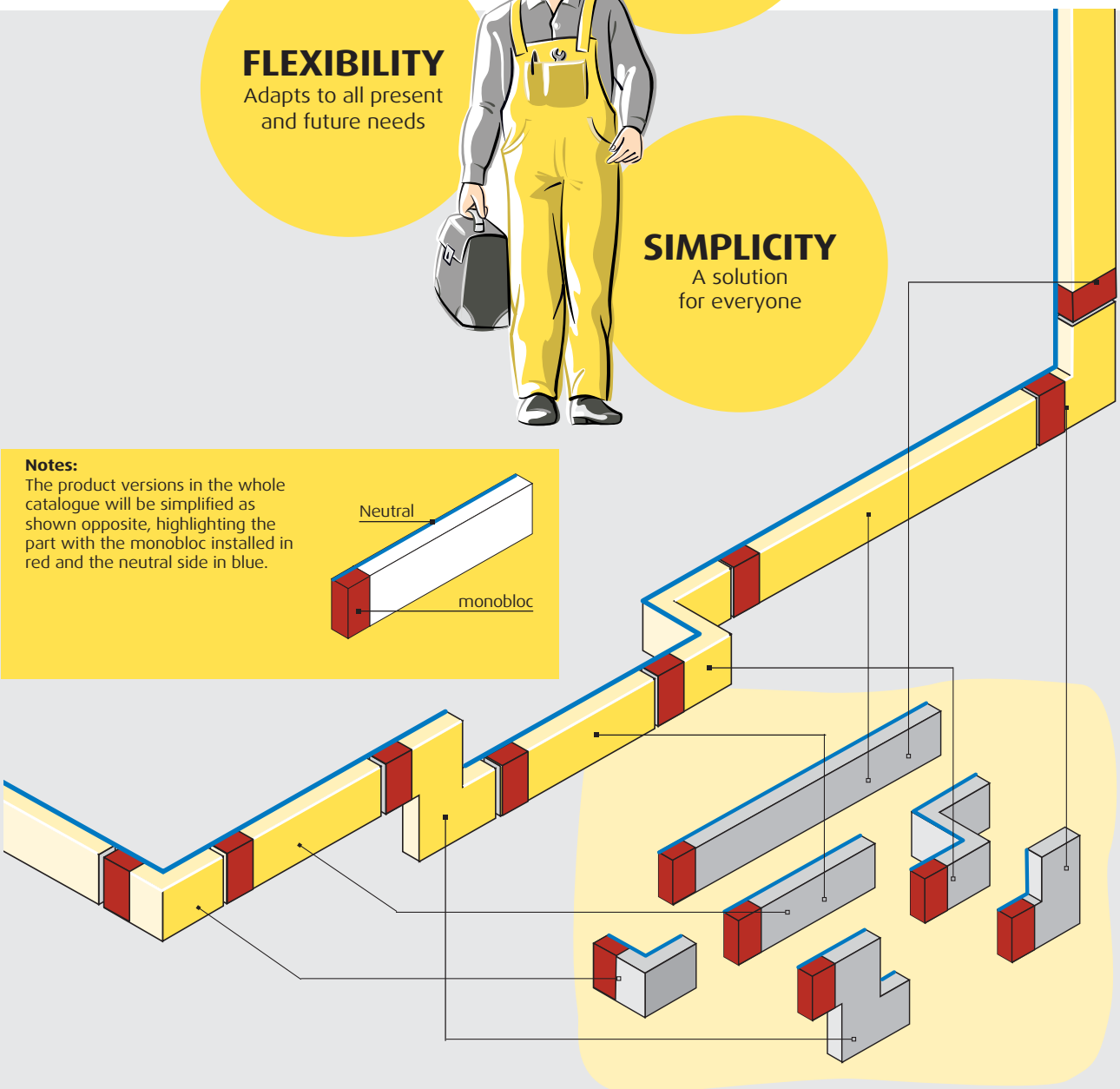
SCP Features

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.



General structural features

The outer casing of the SCP line consists of four C-ribbed section bars, bordered and riveted (thickness 1.5mm), with **excellent mechanical, electric** and heat loss efficiency.
The sheetmetal is made of hot galvanized steel, treated according to UNI EN10327 and **painted with RAL7035 resins** with a **high resistance to chemical agents.**
The standard degree of protection is IP55; also, with certain accessories (see pag. 45), it can also be installed outdoors.
The busbar conductors have a rectangular cross-section with rounded corners; there are two versions:
- **Electrolytic copper ETP 99.9 UNI EN13601**
- **Aluminum alloy** treated over the entire surface with **5 galvanic processes**
(copper plating + tin plating)

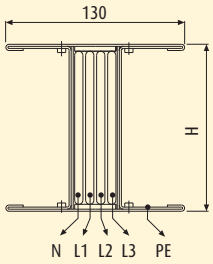
The insulation between bars is ensured by a **double sheath made with polyester film** (total thickness 0.4 mm) class B, class **F (155°C)** thermal resistance available on request.
All plastic components have a **V1 self-extinguishing** degree (as per UL94); they are **fire retardant** and **comply with the glow-wire test** according to standards. The SCP line is **Halogen Free**.

In order to facilitate storage operations especially to reduce the installation time, the straight elements, trunking **components** as well as all the components of the SCP Super Compact line are **supplied with a monobloc pre-installed at the factory**.
The junction contact is ensured by **two silver-plated copper plates** for each **phase**, insulated with red **class F thermosetting** plastic **material**.
The **monobloc** has **shearhead bolts**: after tightening the nuts with a standard wrench, the outer head will break at the correct torque value, hence giving you the certainty that the connection has been made properly so as to guarantee safety and maximum performance over time.
Finally, in order to completely verify the insulation level, every element with a monobloc undergoes an **insulation test** (phase-phase, phase-PE) at the factory with a test voltage of **5000V**.

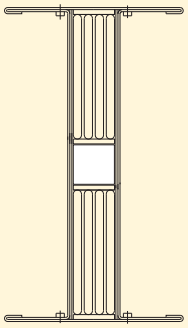
Standard versions:

SCP line with 4 conductors
3L+N+PE, 3L+PEN, 3L+FE+PE

Note: For dimension H, see technical data section
PE: Protection Earth
FE: Functional Earth (Clean Earth)

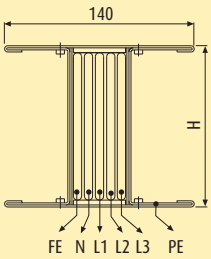


single bar

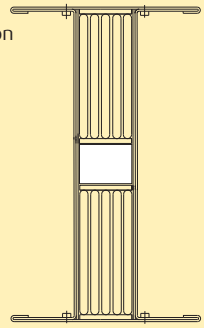

double bar

SCP5 line with 5 conductors
3L+N+FE+PE

Note: For dimension H, see technical data section
PE: Protection Earth
FE: Functional Earth (Clean Earth)

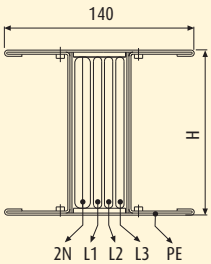


single bar

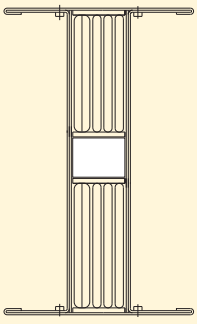

double bar

SCP2N 200% neutral line
3L+2N+PE

Note: For dimension H, see technical data section
PE: Protection Earth
FE: Functional Earth (Clean Earth)



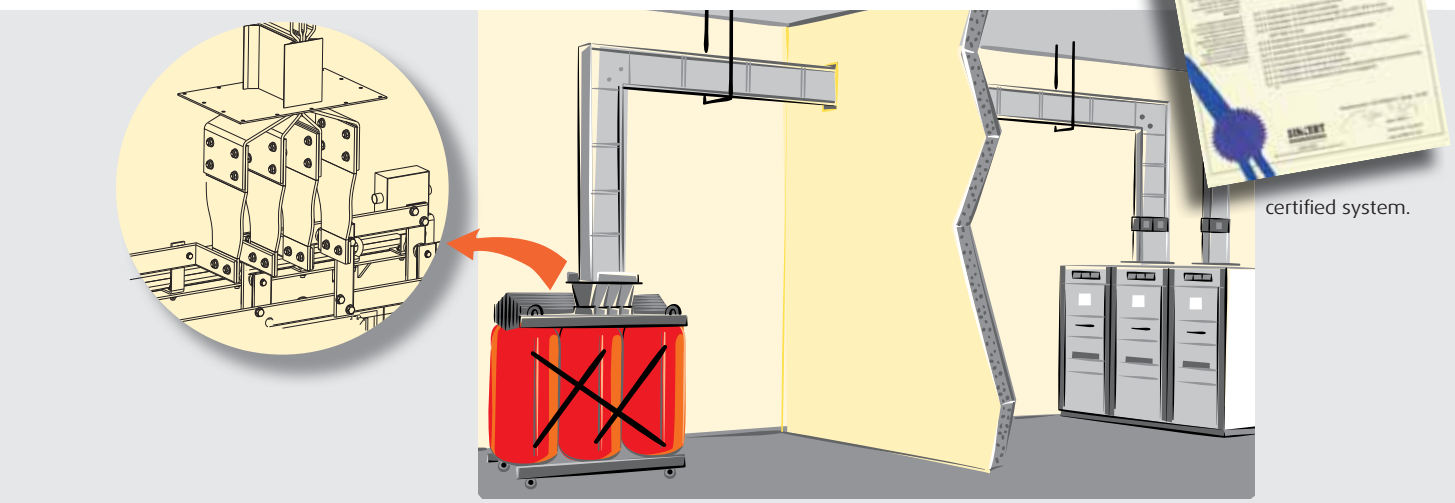
single bar


double bar

Special versions on request

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**

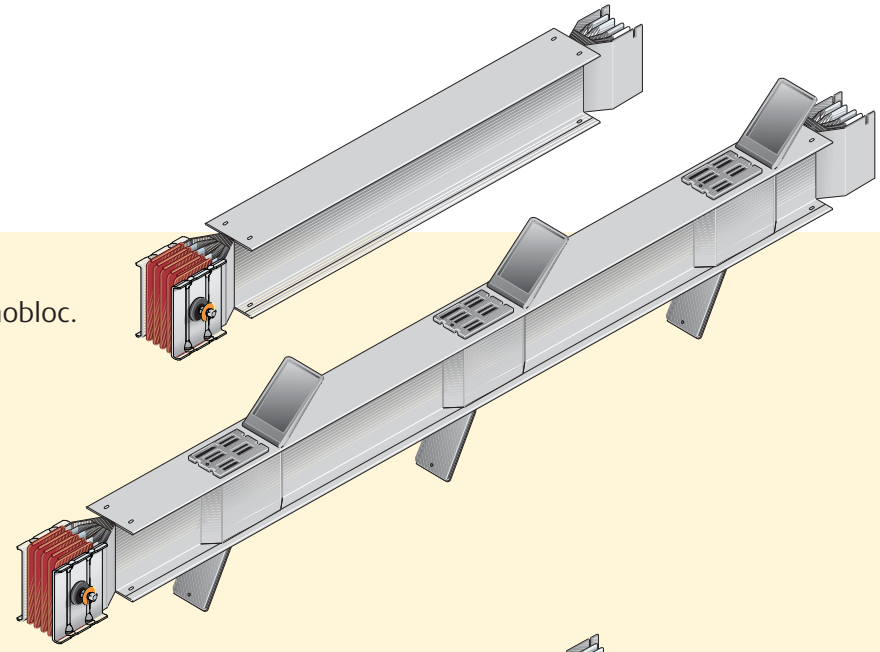
Main features of the SCP line

Straight elements:

Supplied with its pre-installed monobloc.

Feeder elements:
- standard length: 3m
- special length: from 1m to 3m

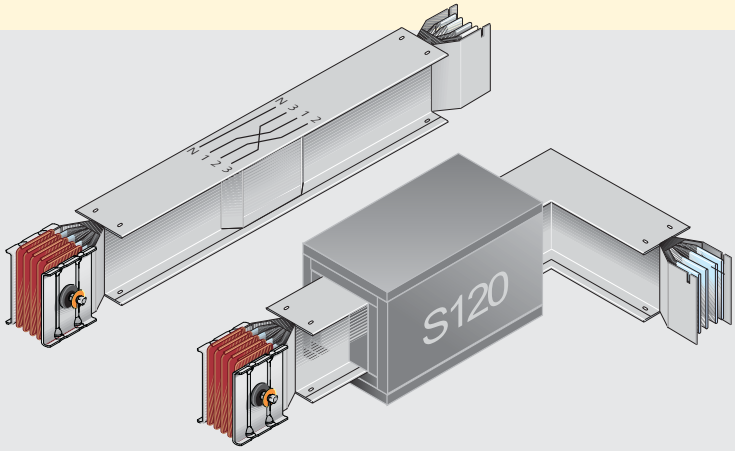
Distribution elements with tap-off outlets:
- standard length: 3m, 2m, 1m
- standard tap-off sockets: spaced at 850mm intervals on both sides



Additional elements:

Supplied with its pre-installed monobloc.
Elements able to meet any installation requirement.

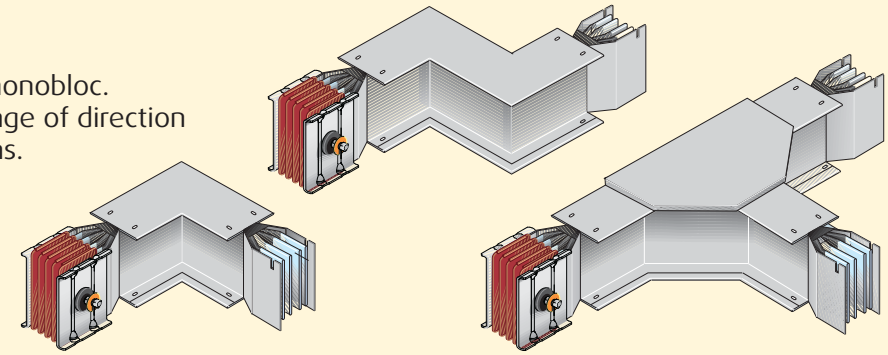
Elements with S120 fire barrier
Elements with phase transposition
Elements with thermal expansion device

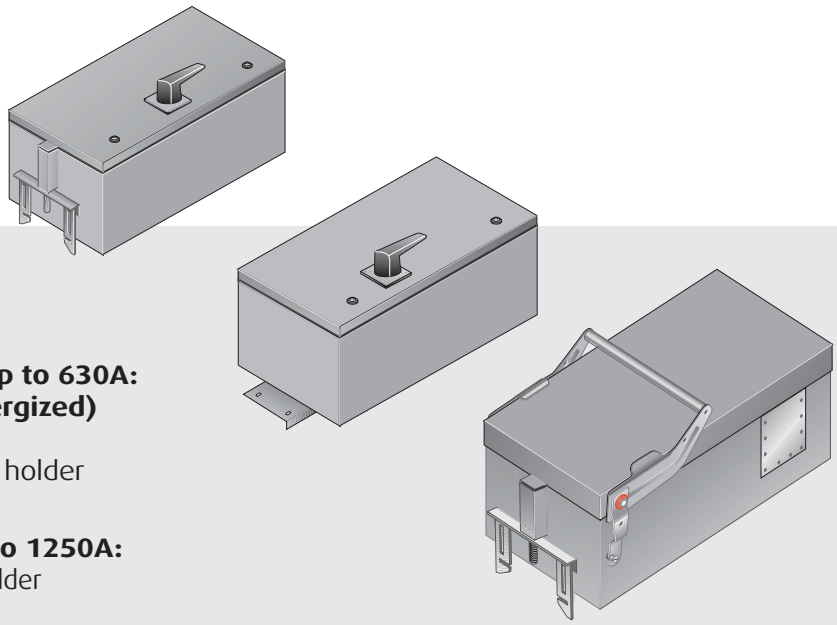


Angle components:

Supplied with its pre-installed monobloc.
Elements able to meet any change of direction with standard or special solutions.

Elbows
Double elbows
Special T, X elements





Tap-off boxes:

Elements used for connecting and energizing electric loads.

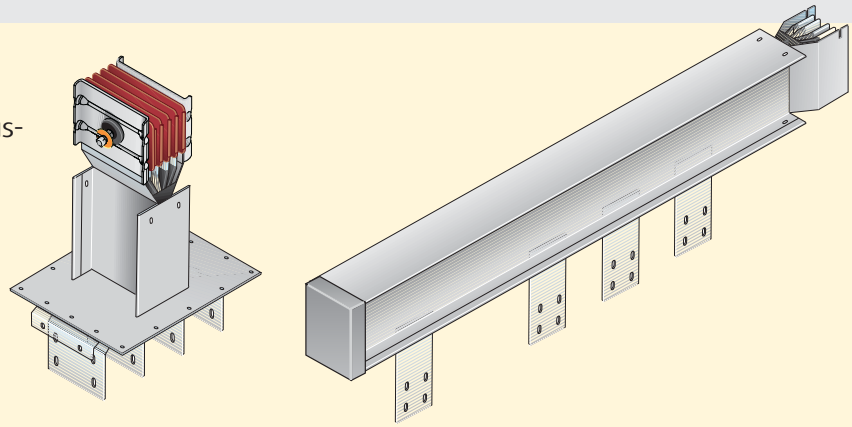
Plug-in tap-off boxes from 63A up to 630A: (can be installed with busbar energized)
- with 3P fuse holders
- with switch disconnector and fuse holder
- for DPX circuit breakers

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.

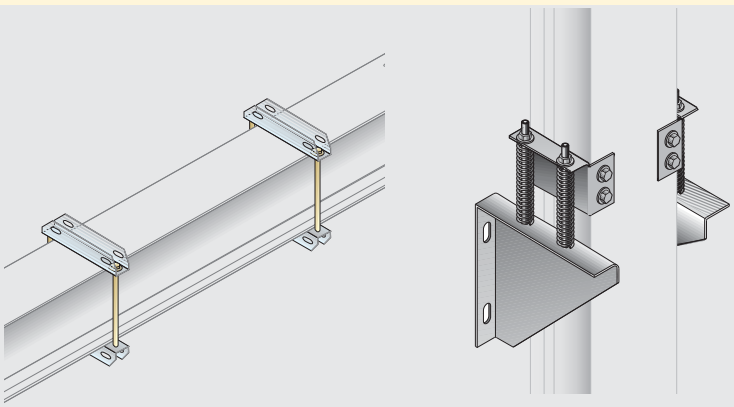
Solutions for Legrand XL³ cabinets and EdM cast resin transformers
Universal solutions



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)

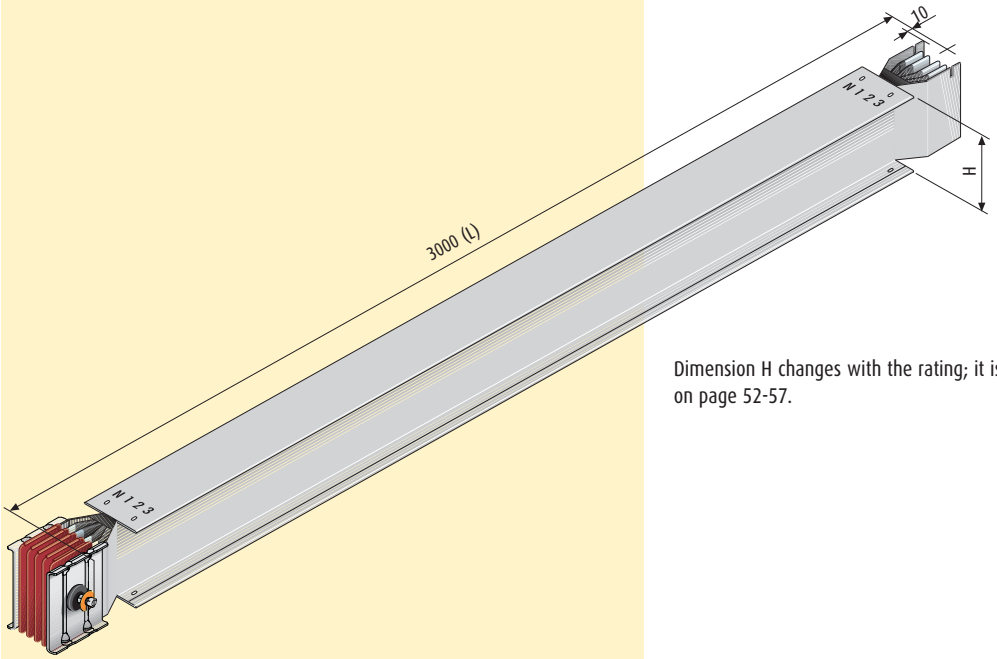


Feeder elements

FEEDER ELEMENT - STANDARD 3000 mm

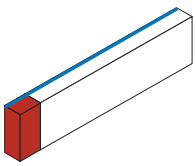
Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
L = 3000 mm	**60280100P**	**60280101P**	**60280102P**	**60280104P**	**60280106P**	**60280107P**	**60390104P**	**60390106P**	**60390107P**
L = 1000-1500 mm	**60280170P**	**60280171P**	**60280172P**	**60280174P**	**60280176P**	**60280177P**	**60390174P**	**60390176P**	**60390177P**
L = 1501-2000 mm	**60280120P**	**60280121P**	**60280122P**	**60280124P**	**60280126P**	**60280127P**	**60390124P**	**60390126P**	**60390127P**
L = 2001-2500 mm	**60280180P**	**60280181P**	**60280182P**	**60280184P**	**60280186P**	**60280187P**	**60390184P**	**60390186P**	**60390187P**
L = 2501-2999 mm	**60280150P**	**60280151P**	**60280152P**	**60280154P**	**60280156P**	**60280157P**	**60390154P**	**60390156P**	**60390157P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
L = 3000 mm	**65280100P**	**65280101P**	**65280103P**	**65280105P**	**65280106P**	**65280108P**	**65390105P**	**65390106P**	**65390108P**
L = 1000-1500 mm	**65280170P**	**65280171P**	**65280173P**	**65280175P**	**65280176P**	**65280178P**	**65390175P**	**65390176P**	**65390178P**
L = 1501-2000 mm	**65280120P**	**65280121P**	**65280123P**	**65280125P**	**65280126P**	**65280128P**	**65390125P**	**65390126P**	**65390128P**
L = 2001-2500 mm	**65280180P**	**65280181P**	**65280183P**	**65280185P**	**65280186P**	**65280188P**	**65390185P**	**65390186P**	**65390188P**
L = 2501-2999 mm	**65280150P**	**65280151P**	**65280153P**	**65280155P**	**65280156P**	**65280158P**	**65390155P**	**65390156P**	**65390158P**
						single bar	double bar		



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

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



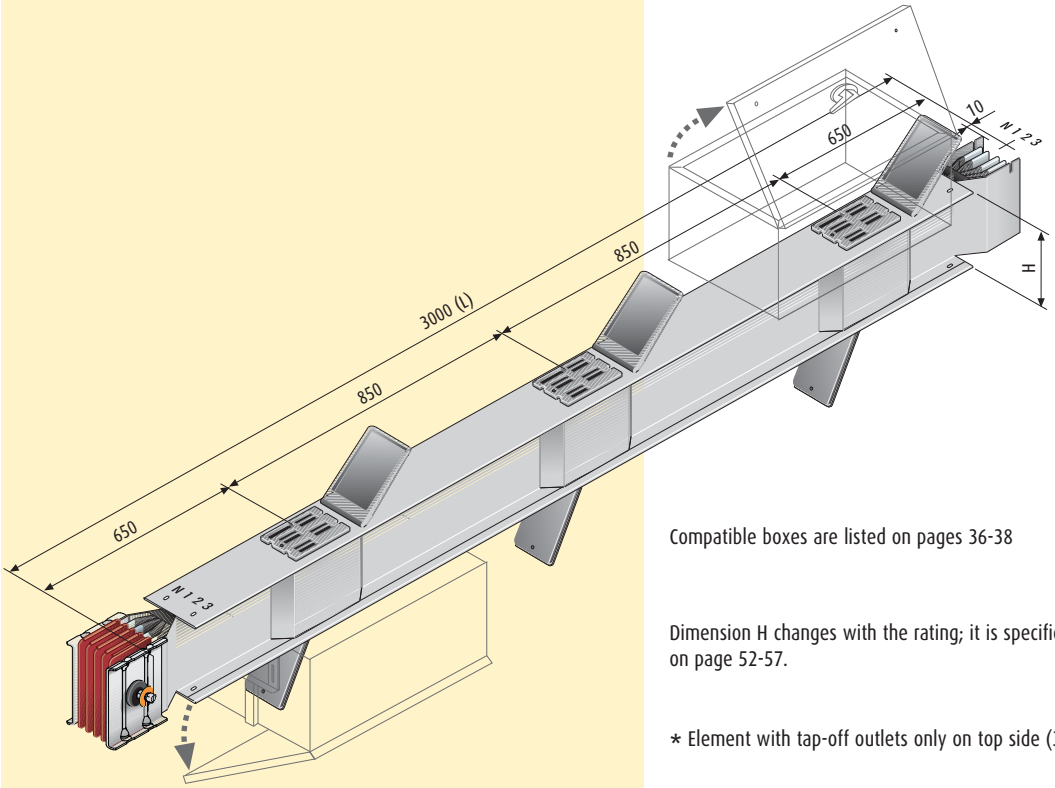
Distribution elements

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		

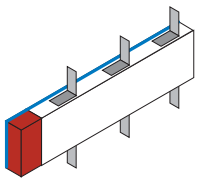


Compatible boxes are listed on pages 36-38

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**

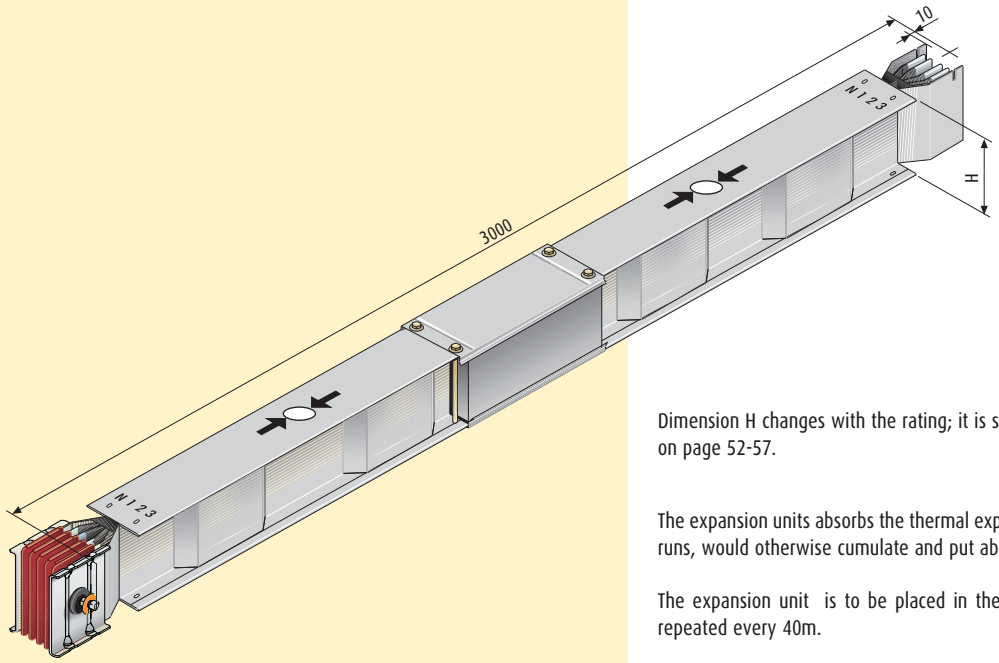


Trunking components

EXPANSION ELEMENT

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	
	60280290P	**60280291P**	**60280292P**	**60280294P**	**60280296P**	**60280297P**	**60390294P**	**60390296P**	**60390297P**	
						single bar	double bar			

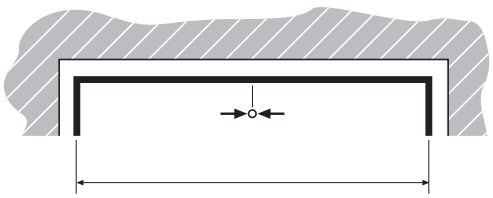
Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
	65280290P	**65280291P**	**65280293P**	**65280295P**	**65280296P**	**65280298P**	**65390295P**	**65390296P**	**65390298P**
						single bar	double bar		



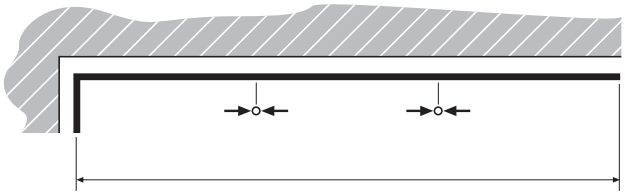
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The expansion units absorbs the thermal expansion during normal use that, on long runs, would otherwise cumulate and put abnormal force on the connection points

The expansion unit is to be placed in the straight runs of more than 40m and repeated every 40m.



e.g. straight section length m 70 = 1 element with expansion in the middle of the line



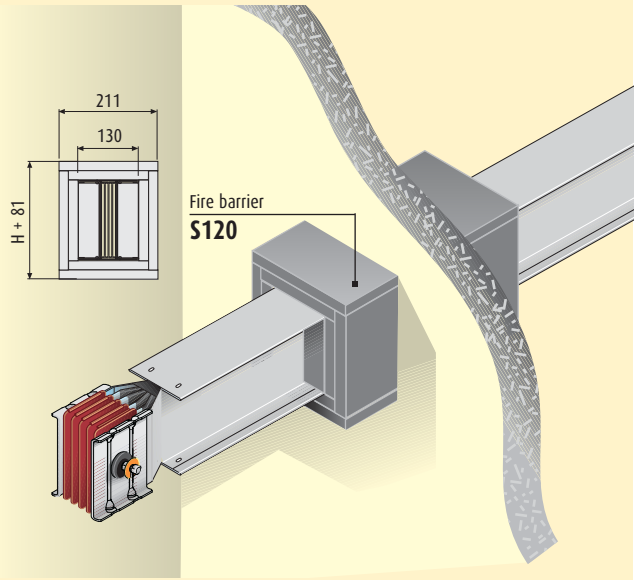
e.g. straight section length m 120 = 2 elements with expansion every ~40 m

Fire 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

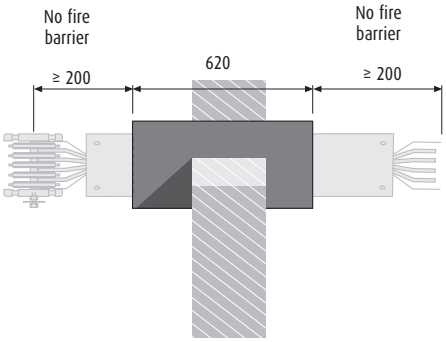
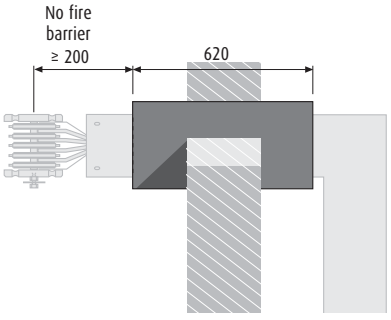


Figure 2

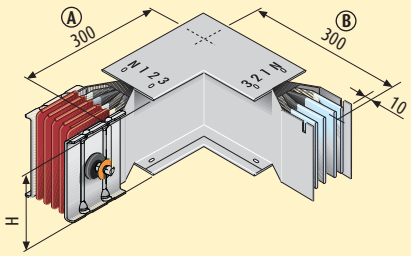


Direction changes

HORIZONTAL ELBOW

Aluminium		630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	Standard RH	**60280300P**	**60280301P**	**60280302P**	**60280304P**	**60280306P**	**60280307P**	**60390304P**	**60390306P**	**60390307P**
Type 2	Standard LH	**60280310P**	**60280311P**	**60280312P**	**60280314P**	**60280316P**	**60280317P**	**60390314P**	**60390316P**	**60390317P**
Type 1	Special RH	**60280320P**	**60280321P**	**60280322P**	**60280324P**	**60280326P**	**60280327P**	**60390324P**	**60390326P**	**60390327P**
Type 2	Special LH	**60280330P**	**60280331P**	**60280332P**	**60280334P**	**60280336P**	**60280337P**	**60390334P**	**60390336P**	**60390337P**
							single bar	double bar		

Copper		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	Standard RH	**65280300P**	**65280301P**	**65280303P**	**65280305P**	**65280306P**	**65280308P**	**65390305P**	**65390306P**	**65390308P**
Type 2	Standard LH	**65280310P**	**65280311P**	**65280313P**	**65280315P**	**65280316P**	**65280318P**	**65390315P**	**65390316P**	**65390318P**
Type 1	Special RH	**65280320P**	**65280321P**	**65280323P**	**65280325P**	**65280326P**	**65280328P**	**65390325P**	**65390326P**	**65390328P**
Type 2	Special LH	**65280330P**	**65280331P**	**65280333P**	**65280335P**	**65280336P**	**65280338P**	**65390335P**	**65390336P**	**65390338P**
							single bar	double bar		



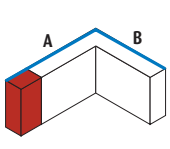
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.

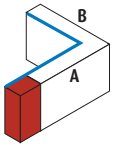
The word “special” is referred to an element with measurements that are different from those shown in the figure, yet included between the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR	
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**250/1299**
(B) min/MAX [mm]	**250/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**250/1449**
(B) min/MAX [mm]	**250/1449**



Type 1



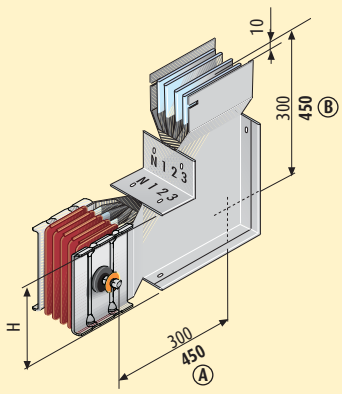
Type 2

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		



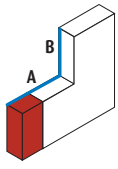
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

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

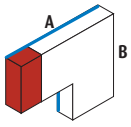
The word "special" is referred to an element with measurements that are different from those shown in the figure, yet included between the MIN/MAX values specified in the table.

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



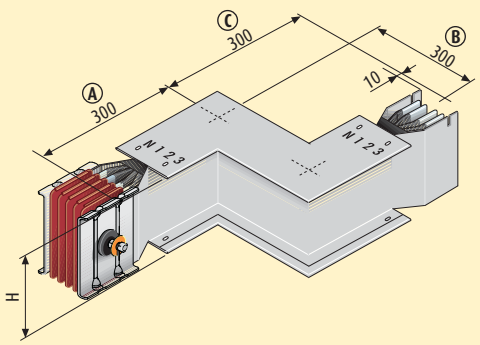
Type 2

Direction changes

DOUBLE HORIZONTAL ELBOW

Aluminium		630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	Right	**60280340P**	**60280341P**	**60280342P**	**60280344P**	**60280346P**	**60280347P**	**60390344P**	**60390346P**	**60390347P**
Type 2	Left	**60280350P**	**60280351P**	**60280352P**	**60280354P**	**60280356P**	**60280357P**	**60390354P**	**60390356P**	**60390357P**
							single bar	double bar		

Copper		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	Right	**65280340P**	**65280341P**	**65280343P**	**65280345P**	**65280346P**	**65280348P**	**65390345P**	**65390346P**	**65390348P**
Type 2	Left	**65280350P**	**65280351P**	**65280353P**	**65280355P**	**65280356P**	**65280358P**	**65390355P**	**65390356P**	**65390358P**
							single bar	double bar		



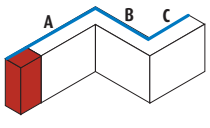
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

The dimensions are referred to standard elements.

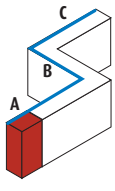
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR	
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**250/1299**
(B) min/MAX [mm]	**50/599**
(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]	**250/1449**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**250/1449**



Type 1



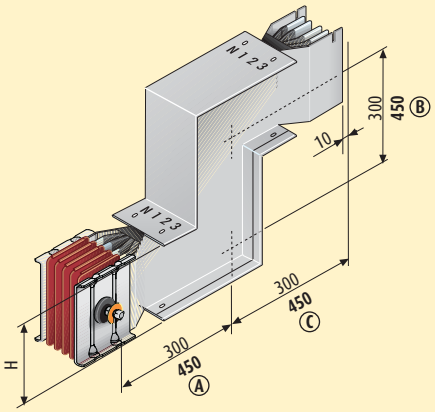
Type 2

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		



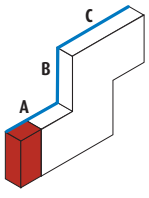
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

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

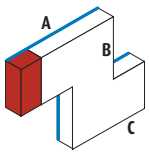
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

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



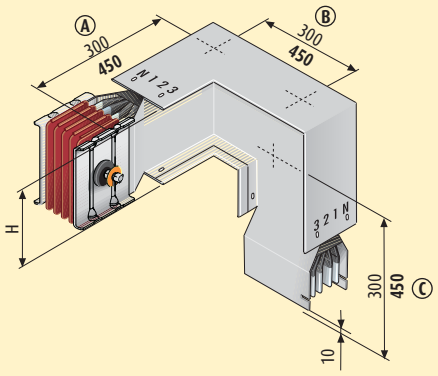
Type 2

Direction changes

DOUBLE ELBOW HORIZONTAL+VERTICAL

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60280600P**	**60280601P**	**60280602P**	**60280604P**	**60280606P**	**60280607P**	**60390604P**	**60390606P**	**60390607P**
Type 2	**60280610P**	**60280611P**	**60280612P**	**60280614P**	**60280616P**	**60280617P**	**60390614P**	**60390616P**	**60390617P**
Type 3	**60280620P**	**60280621P**	**60280622P**	**60280624P**	**60280626P**	**60280627P**	**60390624P**	**60390626P**	**60390627P**
Type 4	**60280630P**	**60280631P**	**60280632P**	**60280634P**	**60280636P**	**60280637P**	**60390634P**	**60390636P**	**60390637P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65280600P**	**65280601P**	**65280603P**	**65280605P**	**65280606P**	**65280608P**	**65390605P**	**65390606P**	**65390608P**
Type 2	**65280610P**	**65280611P**	**65280613P**	**65280615P**	**65280616P**	**65280618P**	**65390615P**	**65390616P**	**65390618P**
Type 3	**65280620P**	**65280621P**	**65280623P**	**65280625P**	**65280626P**	**65280628P**	**65390625P**	**65390626P**	**65390628P**
Type 4	**65280630P**	**65280631P**	**65280633P**	**65280635P**	**65280636P**	**65280638P**	**65390635P**	**65390636P**	**65390638P**
						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.

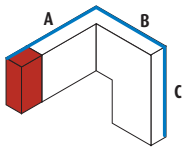
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

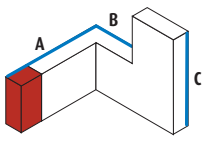
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**250/1299**
(B) min/MAX [mm]	**200 - 599**
(C) min/MAX [mm]	**300/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

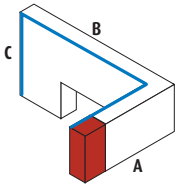
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**250/1449**
(B) min/MAX [mm]	**330 - 749**
(C) min/MAX [mm]	**450/1449**



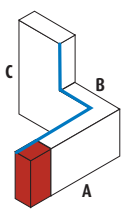
Type 1



Type 2



Type 3



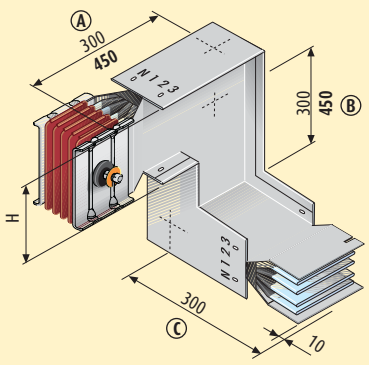
Type 4

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.

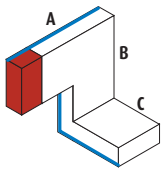
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

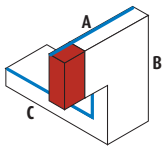
Aluminium	630A to 2000A
Copper	800A to 2500A
(A) min/MAX [mm]	**300/1299**
(B) min/MAX [mm]	**200 - 599**
(C) min/MAX [mm]	**250/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

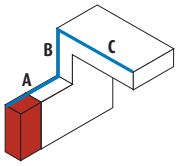
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**330 - 749**
(C) min/MAX [mm]	**250/1449**



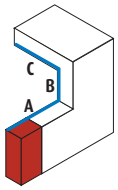
Type 1



Type 2



Type 3



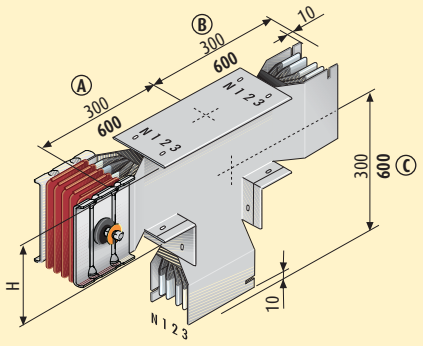
Type 4

Direction changes

VERTICAL "T"

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60280800P**	**60280801P**	**60280802P**	**60280804P**	**60280806P**	**60280807P**	**60390804P**	**60390806P**	**60390807P**
Type 2	**60280810P**	**60280811P**	**60280812P**	**60280814P**	**60280816P**	**60280817P**	**60390814P**	**60390816P**	**60390817P**
Type 3	**60280820P**	**60280821P**	**60280822P**	**60280824P**	**60280826P**	**60280827P**	**60390824P**	**60390826P**	**60390827P**
Type 4	**60280830P**	**60280831P**	**60280832P**	**60280834P**	**60280836P**	**60280837P**	**60390834P**	**60390836P**	**60390837P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65280800P**	**65280801P**	**65280803P**	**65280805P**	**65280806P**	**65280808P**	**65390805P**	**65390806P**	**65390808P**
Type 2	**65280810P**	**65280811P**	**65280813P**	**65280815P**	**65280816P**	**65280818P**	**65390815P**	**65390816P**	**65390818P**
Type 3	**65280820P**	**65280821P**	**65280823P**	**65280825P**	**65280826P**	**65280828P**	**65390825P**	**65390826P**	**65390828P**
Type 4	**65280830P**	**65280831P**	**65280833P**	**65280835P**	**65280836P**	**65280838P**	**65390835P**	**65390836P**	**65390838P**
						single bar	double bar		



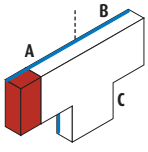
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

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

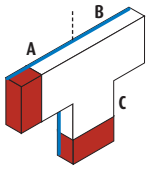
Non Standard elements (with measurements that are different from those shown in the figure) are referred to the MIN/MAX values specified in the table.

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]	**300/1299**
(C) min/MAX [mm]	**300/1299**

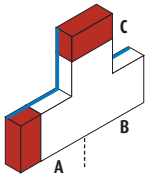
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**450/1449**
(C) min/MAX [mm]	**450/1449**



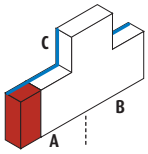
Type 1



Type 2



Type 3



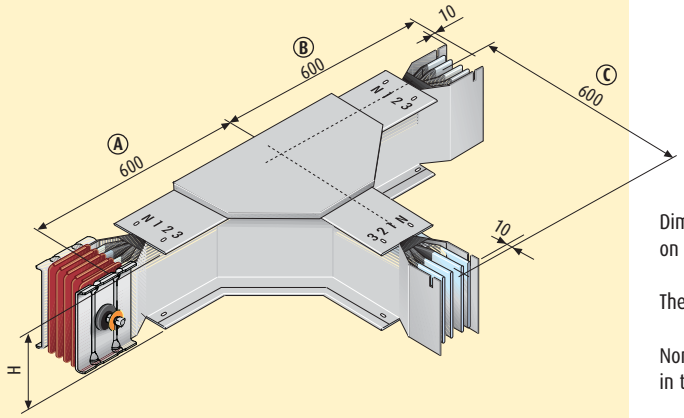
Type 4

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		

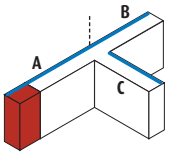


Dimension H changes with the rating; it is specified in the specifications on page 52-57.

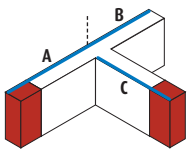
The dimensions are referred to standard elements.

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.

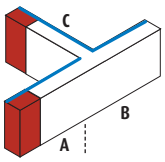
MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	630A to 4000A
Copper	800A to 5000A
(A) min/MAX [mm]	**550/1049**
(B) min/MAX [mm]	**550/1049**
(C) min/MAX [mm]	**550/1049**



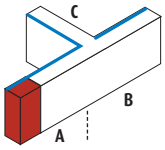
Type 1



Type 2



Type 3



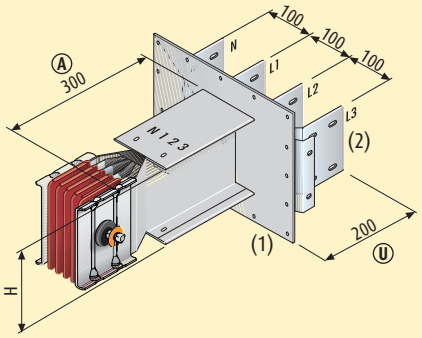
Type 4

Connection interfaces

STANDARD CONNECTION INTERFACE

Aluminium		630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 2	RH	**60281000P**	**60281001P**	**60281002P**	**60281004P**	**60281006P**	**60281007P**	**60391004P**	**60391006P**	**60391007P**
Type 1	LH	**60281010P**	**60281011P**	**60281012P**	**60281014P**	**60281016P**	**60281017P**	**60391014P**	**60391016P**	**60391017P**
Type 2	Special RH	**60281020P**	**60281021P**	**60281022P**	**60281024P**	**60281026P**	**60281027P**	**60391024P**	**60391026P**	**60391027P**
Type 1	Special LH	**60281030P**	**60281031P**	**60281032P**	**60281034P**	**60281036P**	**60281037P**	**60391034P**	**60391036P**	**60391037P**
							single bar	double bar		

Copper		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 2	RH	**65281000P**	**65281001P**	**65281003P**	**65281005P**	**65281006P**	**65281008P**	**65391005P**	**65391006P**	**65391008P**
Type 1	LH	**65281010P**	**65281011P**	**65281013P**	**65281015P**	**65281016P**	**65281018P**	**65391015P**	**65391016P**	**65391018P**
Type 2	Special RH	**65281020P**	**65281021P**	**65281023P**	**65281025P**	**65281026P**	**65281028P**	**65391025P**	**65391026P**	**65391028P**
Type 1	Special LH	**65281030P**	**65281031P**	**65281033P**	**65281035P**	**65281036P**	**65281038P**	**65391035P**	**65391036P**	**65391038P**
							single bar	double bar		



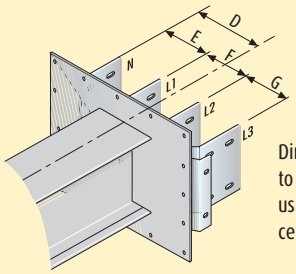
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

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.

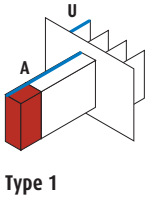
See page 25 for dimensions of coverplate (1) and bars (2).

Special element with non-standard centre distance

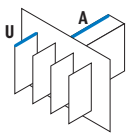


Dimensioning indications to be provided when using a non-standard centre distance

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE AND DOUBLE BAR	
Aluminium	630A to 4000A
Copper	800A to 5000A
(A) min/MAX [mm]	**200/1000**
(U) min/MAX [mm]	**150/400**



Type 1

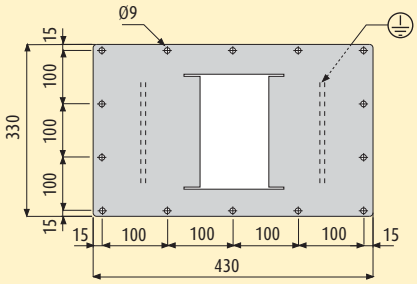


Type 2

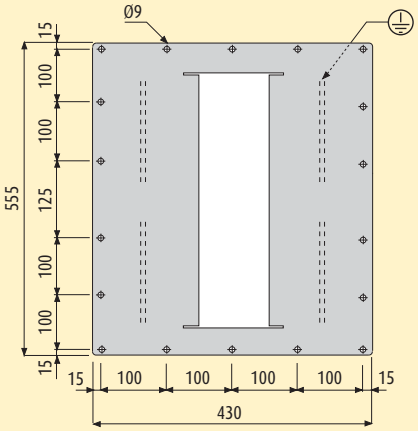
Connection interfaces

COVERPLATE DRILLING DETAILS (1)

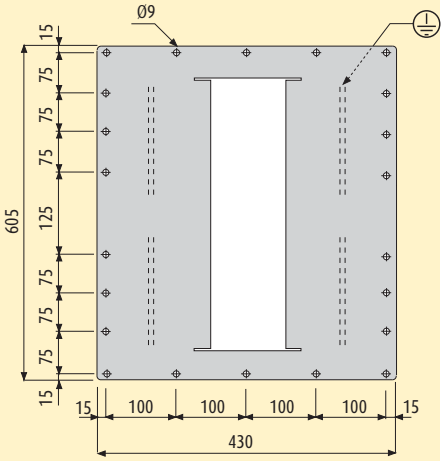
Aluminium 630A to 2000A
Copper 800A to 2500A



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

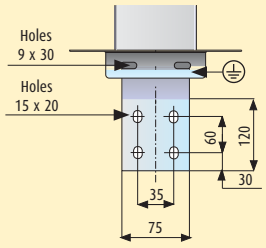


Aluminium 4000A
Copper 5000A

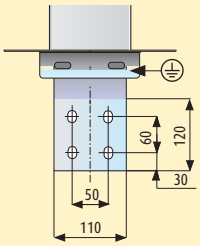


BAR DRILLING DETAILS (2)

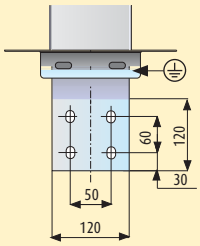
Al 630A
Cu 800A



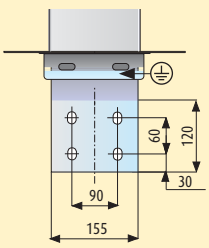
Al 800A-1000A
Cu 1000A-1250A



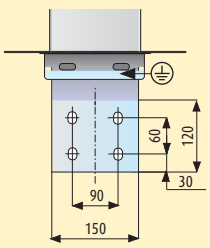
Al 1250A



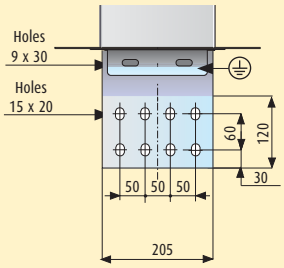
Al 1600A



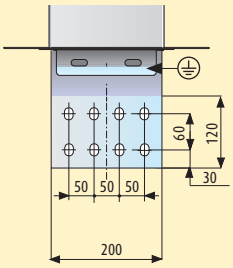
Cu 1600A



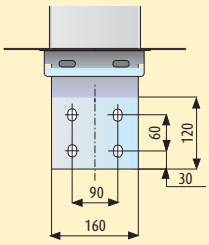
Al 2000A



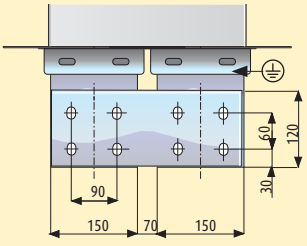
Cu 2500A



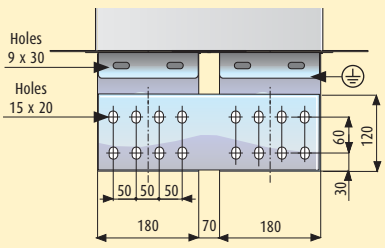
Cu 2000A



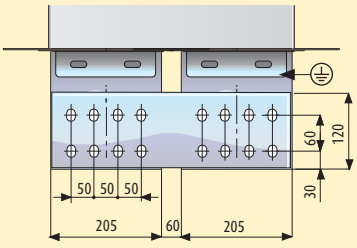
Al 2500A
Cu 3200A



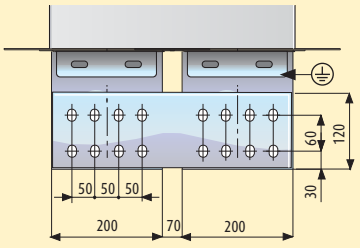
Al 3200A
Cu 4000A



Al 4000A



Cu 5000A

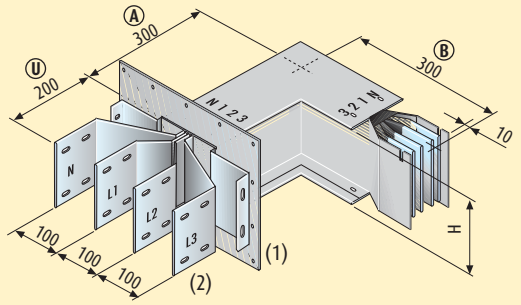


Connection interfaces

CONNECTION INTERFACE + HORIZONTAL ELBOW

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60281300P**	**60281301P**	**60281302P**	**60281304P**	**60281306P**	**60281307P**	**60391304P**	**60391306P**	**60391307P**
Type 2	**60281310P**	**60281311P**	**60281312P**	**60281314P**	**60281316P**	**60281317P**	**60391314P**	**60391316P**	**60391317P**
Type 3	**60281320P**	**60281321P**	**60281322P**	**60281324P**	**60281326P**	**60281327P**	**60391324P**	**60391326P**	**60391327P**
Type 4	**60281330P**	**60281331P**	**60281332P**	**60281334P**	**60281336P**	**60281337P**	**60391334P**	**60391336P**	**60391337P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65281300P**	**65281301P**	**65281303P**	**65281305P**	**65281306P**	**65281308P**	**65391305P**	**65391306P**	**65391308P**
Type 2	**65281310P**	**65281311P**	**65281313P**	**65281315P**	**65281316P**	**65281318P**	**65391315P**	**65391316P**	**65391318P**
Type 3	**65281320P**	**65281321P**	**65281323P**	**65281325P**	**65281326P**	**65281328P**	**65391325P**	**65391326P**	**65391328P**
Type 4	**65281330P**	**65281331P**	**65281333P**	**65281335P**	**65281336P**	**65281338P**	**65391335P**	**65391336P**	**65391338P**
						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.

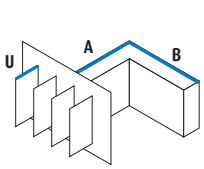
See page 25 for dimensions of coverplate (1) and bars (2).

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

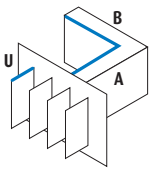
Aluminium	630A to 2000A
Copper	800A to 2500A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**165/1299**
(B) min/MAX [mm]	**250/1299**

MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR

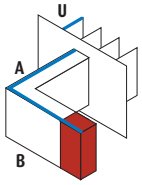
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**165/1449**
(B) min/MAX [mm]	**250/1449**



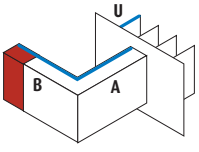
Type 1



Type 2



Type 3



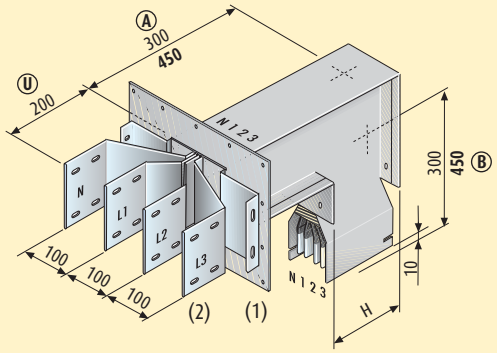
Type 4

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.

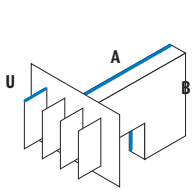
The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

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.

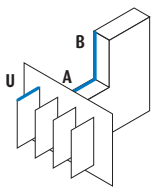
See page 25 for dimensions of coverplate (1) and bars (2).

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**

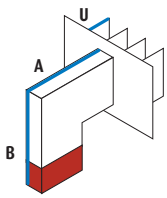
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**450/1449**
(B) min/MAX [mm]	**450/1449**



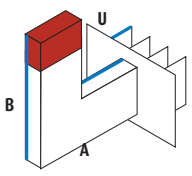
Type 1



Type 2



Type 3



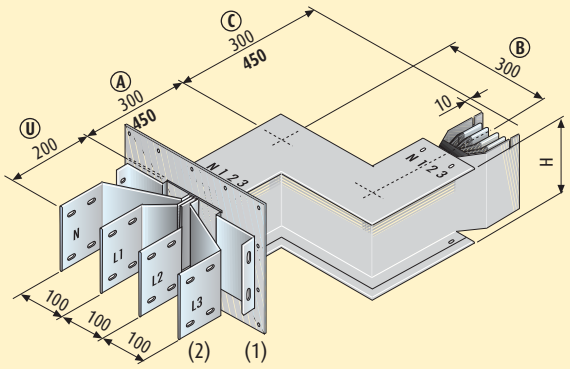
Type 4

Connection interfaces

CONNECTION INTERFACE + DOUBLE HORIZONTAL ELBOW

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60281340P**	**60281341P**	**60281342P**	**60281344P**	**60281346P**	**60281347P**	**60391344P**	**60391346P**	**60391347P**
Type 2	**60281350P**	**60281351P**	**60281352P**	**60281354P**	**60281356P**	**60281357P**	**60391354P**	**60391356P**	**60391357P**
Type 3	**60281360P**	**60281361P**	**60281362P**	**60281364P**	**60281366P**	**60281367P**	**60391364P**	**60391366P**	**60391367P**
Type 4	**60281370P**	**60281371P**	**60281372P**	**60281374P**	**60281376P**	**60281377P**	**60391374P**	**60391376P**	**60391377P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65281340P**	**65281341P**	**65281343P**	**65281345P**	**65281346P**	**65281348P**	**65391345P**	**65391346P**	**65391348P**
Type 2	**65281350P**	**65281351P**	**65281353P**	**65281355P**	**65281356P**	**65281358P**	**65391355P**	**65391356P**	**65391358P**
Type 3	**65281360P**	**65281361P**	**65281363P**	**65281365P**	**65281366P**	**65281368P**	**65391365P**	**65391366P**	**65391368P**
Type 4	**65281370P**	**65281371P**	**65281373P**	**65281375P**	**65281376P**	**65281378P**	**65391375P**	**65391376P**	**65391378P**
						single bar	double bar		



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

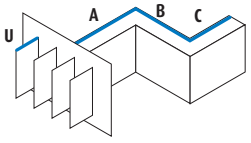
The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

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.

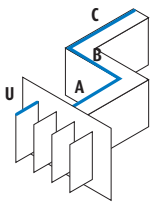
See page 25 for dimensions of coverplate (1) and bars (2).

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]	**100/1299**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**250/1299**

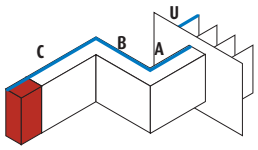
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**165/1449**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**250/1449**



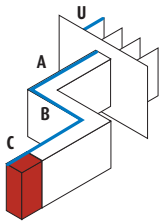
Type 1



Type 2



Type 3



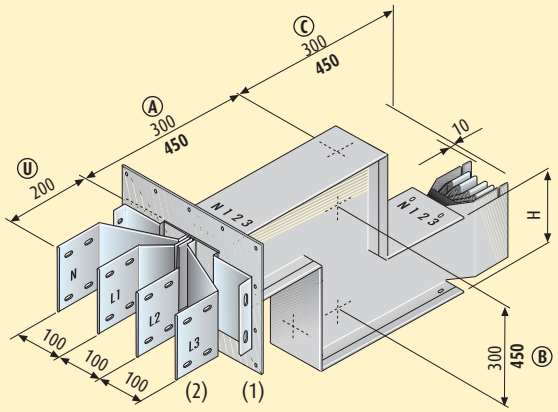
Type 4

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.

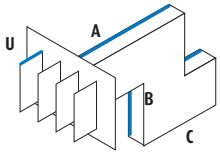
The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

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.

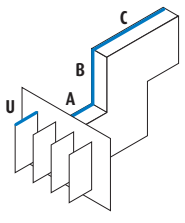
See page 25 for dimensions of coverplate (1) and bars (2).

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**

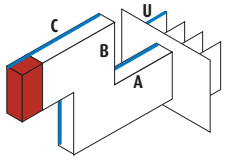
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**350/1449**
(B) min/MAX [mm]	**50/599**
(C) min/MAX [mm]	**450/1449**



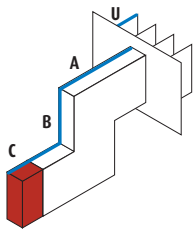
Type 1



Type 2



Type 3



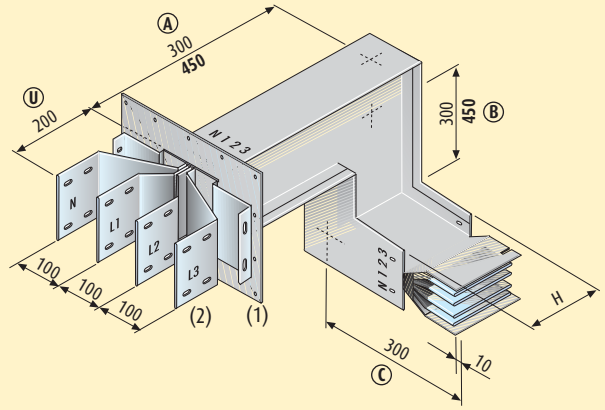
Type 4

Connections interfaces

CONNECTION INTERFACE + VERTICAL ELBOW + HORIZONTAL ELBOW

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 1	**60281500P**	**60281501P**	**60281502P**	**60281504P**	**60281506P**	**60281507P**	**60391504P**	**60391506P**	**60391507P**
Type 2	**60281510P**	**60281511P**	**60281512P**	**60281514P**	**60281516P**	**60281517P**	**60391514P**	**60391516P**	**60391517P**
Type 3	**60281520P**	**60281521P**	**60281522P**	**60281524P**	**60281526P**	**60281527P**	**60391524P**	**60391526P**	**60391527P**
Type 4	**60281530P**	**60281531P**	**60281532P**	**60281534P**	**60281536P**	**60281537P**	**60391534P**	**60391536P**	**60391537P**
Type 5	**60281540P**	**60281541P**	**60281542P**	**60281544P**	**60281546P**	**60281547P**	**60391544P**	**60391546P**	**60391547P**
Type 6	**60281550P**	**60281551P**	**60281552P**	**60281554P**	**60281556P**	**60281557P**	**60391554P**	**60391556P**	**60391557P**
Type 7	**60281560P**	**60281561P**	**60281562P**	**60281564P**	**60281566P**	**60281567P**	**60391564P**	**60391566P**	**60391567P**
Type 8	**60281570P**	**60281571P**	**60281572P**	**60281574P**	**60281576P**	**60281577P**	**60391574P**	**60391576P**	**60391577P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 1	**65281500P**	**65281501P**	**65281503P**	**65281505P**	**65281506P**	**65281508P**	**65391505P**	**65391506P**	**65391508P**
Type 2	**65281510P**	**65281511P**	**65281513P**	**65281515P**	**65281516P**	**65281518P**	**65391515P**	**65391516P**	**65391518P**
Type 3	**65281520P**	**65281521P**	**65281523P**	**65281525P**	**65281526P**	**65281528P**	**65391525P**	**65391526P**	**65391528P**
Type 4	**65281530P**	**65281531P**	**65281533P**	**65281535P**	**65281536P**	**65281538P**	**65391535P**	**65391536P**	**65391538P**
Type 5	**65281540P**	**65281541P**	**65281543P**	**65281545P**	**65281546P**	**65281548P**	**65391545P**	**65391546P**	**65391548P**
Type 6	**65281550P**	**65281551P**	**65281553P**	**65281555P**	**65281556P**	**65281558P**	**65391555P**	**65391556P**	**65391558P**
Type 7	**65281560P**	**65281561P**	**65281563P**	**65281565P**	**65281566P**	**65281568P**	**65391565P**	**65391566P**	**65391568P**
Type 8	**65281570P**	**65281571P**	**65281573P**	**65281575P**	**65281576P**	**65281578P**	**65391575P**	**65391576P**	**65391578P**
						single bar	double bar		



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

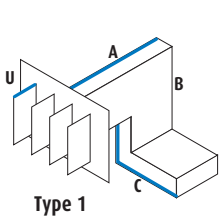
The dimensions are referred to standard elements.
The ones used for double bar elements are in bold type.

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.

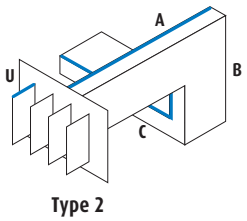
See page 25 for dimensions of coverplate (1) and bars (2).

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]	**200 - 599**
(C) min/MAX [mm]	**250/1299**

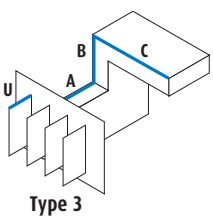
MINIMUM AND MAXIMUM DIMENSIONS OF DOUBLE BAR	
Aluminium	2500A to 4000A
Copper	3200A to 5000A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**350/1449**
(B) min/MAX [mm]	**330 - 749**
(C) min/MAX [mm]	**250/1449**



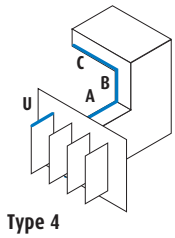
Type 1



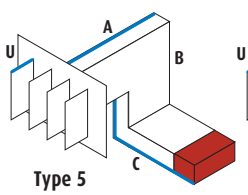
Type 2



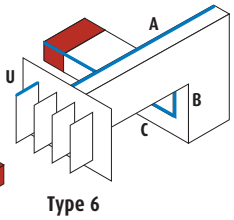
Type 3



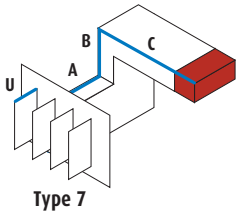
Type 4



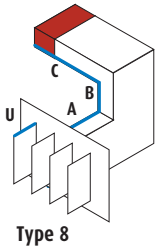
Type 5



Type 6



Type 7



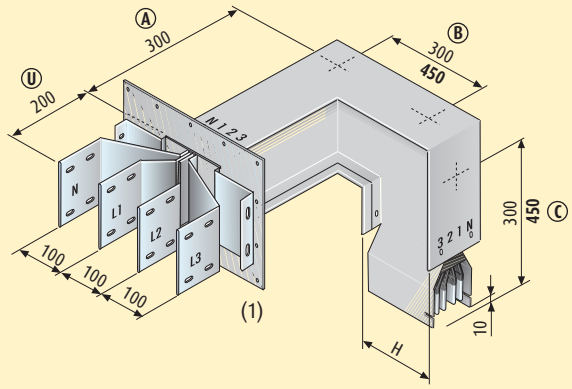
Type 8

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		



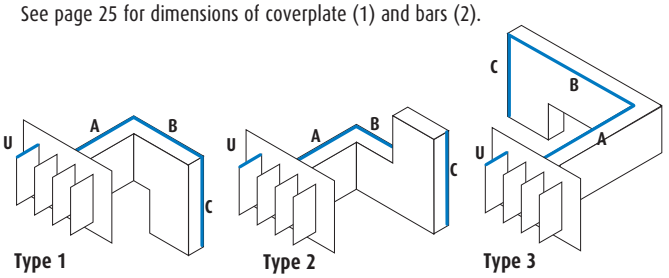
(1)

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.

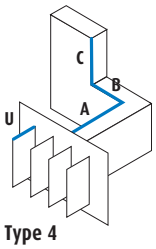
See page 25 for dimensions of coverplate (1) and bars (2).



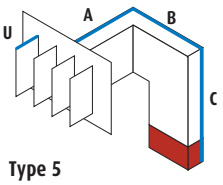
Type 1

Type 2

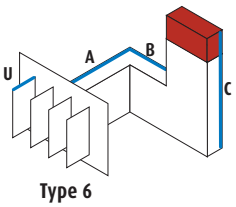
Type 3



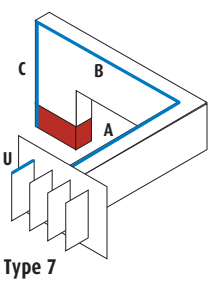
Type 4



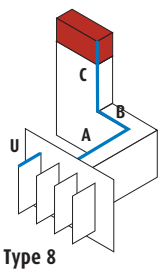
Type 5



Type 6



Type 7



Type 8

MINIMUM AND MAXIMUM DIMENSIONS OF SINGLE BAR

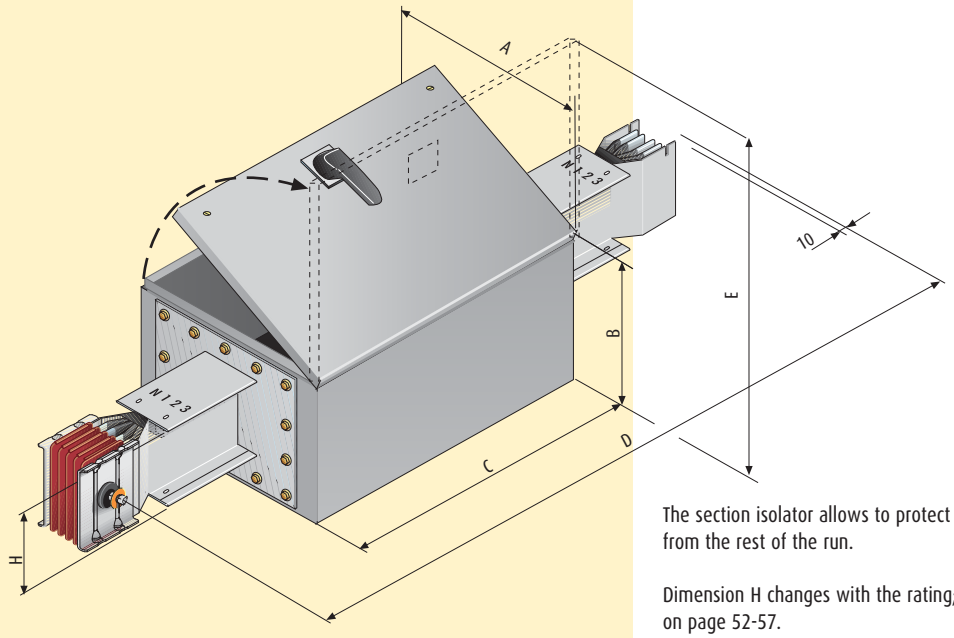
Aluminium	630A to 2000A
Copper	800A to 2500A
(U) min/MAX [mm]	**150/400**
(A) min/MAX [mm]	**100/1299**
(B) min/MAX [mm]	**200 - 599**
(C) min/MAX [mm]	**300/1299**

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**

Complementary run components

SECTION ISOLATOR



The section isolator allows to protect and disconnect one part of the installation from the rest of the run.

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

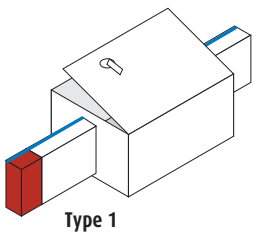
It is possible to have the opening of the box with a position different from that shown in the picture (different types indicated below).

The direction of the disconnector (fuses) must be specified when ordering.

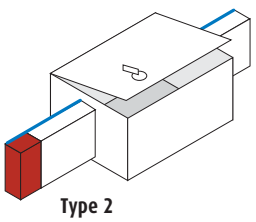
The bolted boxes are to be installed when the busbar is disconnected and not energized.
For operating voltages (Ue) different from 400V, please contact Zucchini.

GENERAL DIMENSIONS OF THE DISCONNECTOR WITH REFERENCE TO THE RATING

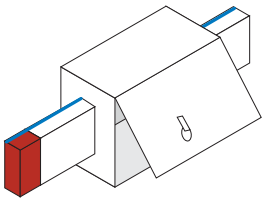
Dimensions according to type 1	A	B	C	D	E
From 630A to 1250A (in mm)	**450**	**300**	**1050**	**1500**	**750**
From 1600A to 2500A (in mm)	**700**	**400**	**1300**	**2000**	**1100**



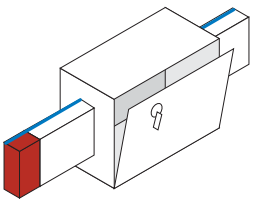
Type 1



Type 2



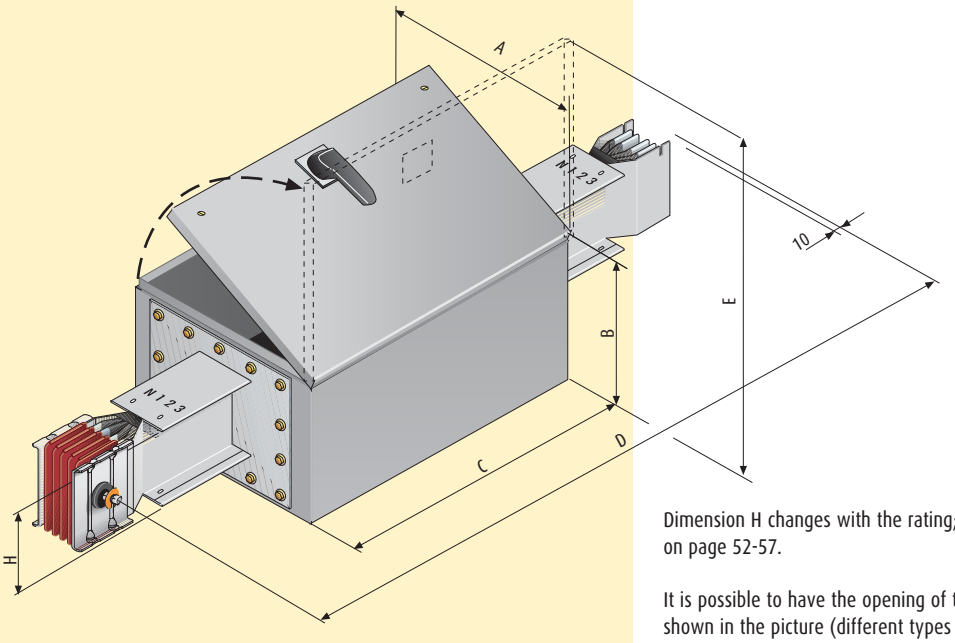
Type 3



Type 4

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.

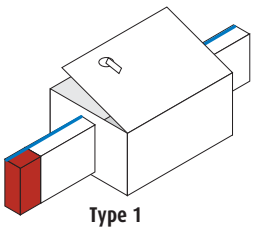
Please contact Zucchini for more details on the dimensions of the reducer.

Fuses not included. See Legrand catalogue.

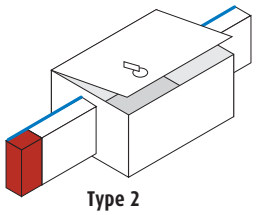
The bolted boxes are to be installed when the busbar is disconnected and not energized.
For operating voltages (Ue) different from 400V, please contact Zucchini.

GENERAL DIMENSIONS OF THE DISCONNECTOR WITH REFERENCE TO THE RATING

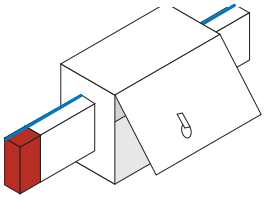
Dimensions according to type 1	A	B	C	D	E
From 630A to 1250A (in mm)	**450**	**300**	**1050**	**1500**	**750**
From 1600A to 2500A (in mm)	**700**	**400**	**1300**	**2000**	**1100**



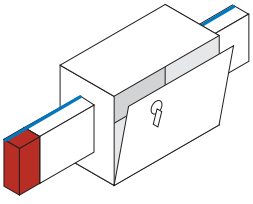
Type 1



Type 2



Type 3



Type 4

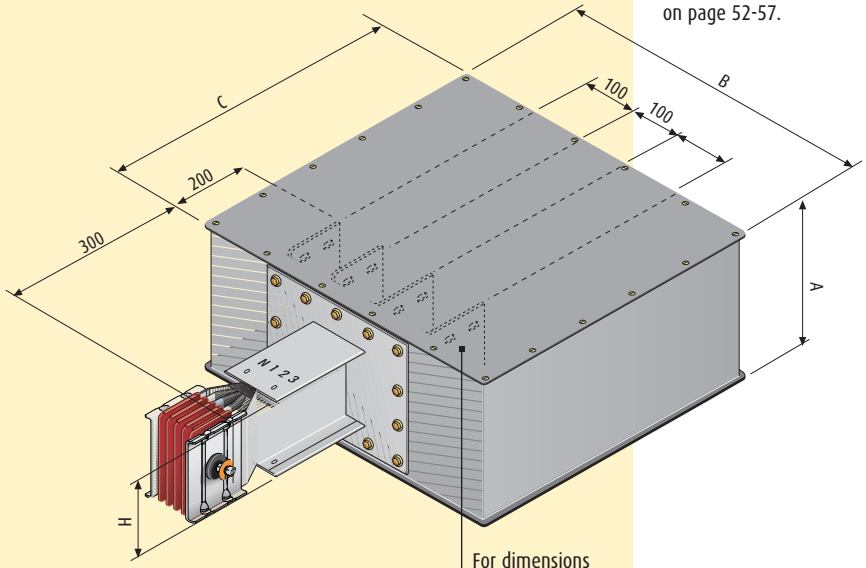
Feed units

END FEED UNIT

Aluminium		630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Type 2	RH	**60281100P**	**60281101P**	**60281102P**	**60281104P**	**60281106P**	**60281107P**	**60391104P**	**60391106P**	**60391107P**
Type 1	LH	**60281110P**	**60281111P**	**60281112P**	**60281114P**	**60281116P**	**60281117P**	**60391114P**	**60391116P**	**60391117P**
							single bar	double bar		

Copper		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Type 2	RH	**65281100P**	**65281101P**	**65281103P**	**65281105P**	**65281106P**	**65281108P**	**65391105P**	**65391106P**	**65391108P**
Type 1	LH	**65281110P**	**65281111P**	**65281113P**	**65281115P**	**65281116P**	**65281118P**	**65391115P**	**65391116P**	**65391118P**
							single bar	double bar		

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



REAR CABLE INPUT

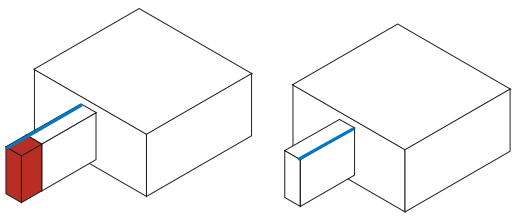
Aluminium gland plate(s)
for cable entry
170mm x 410mm

Single bar : 1 plate
Double bar : 2 plates

For dimensions of holes for connections, see page 27

DIMENSIONS OF THE BOX

Aluminium	630A to 1250A	1600 to 2000A	2500A to 4000A
Copper	800A to 1250A	1600A to 2500A	3200 to 5000A
(A) [mm]	**320**	**320**	**600**
(B) [mm]	**600**	**600**	**600**
(C) [mm]	**610**	**810**	**810**



Type 1 **Type 2**

Bolt-on tap-off boxes

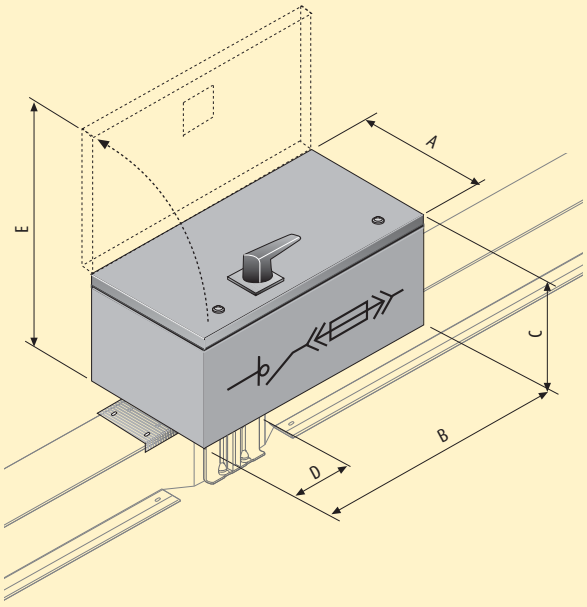
WITH AC23 SWITCH DISCONNECTOR AND FUSE CARRIER : 125A TO 1250A

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.

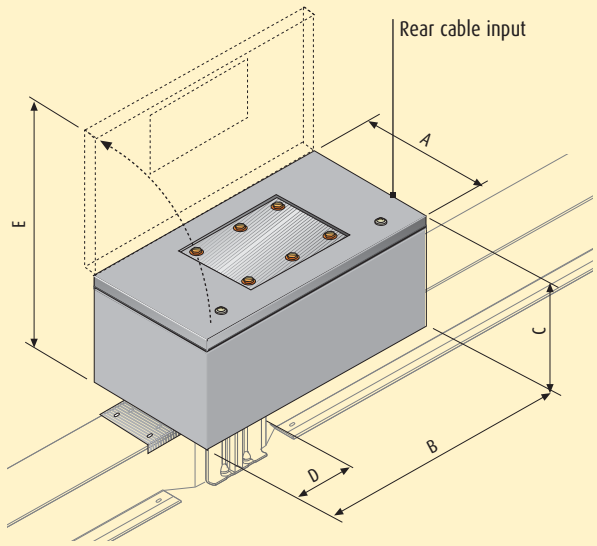
Rated insulating AC voltage	Ui [V]	**1000**
Rated impulse withstand voltage	Uimp [kV]	**12**
Type of rated duty		**AC23A**
Rated conditional short circuit current	[kA]	**100**
		CEI EN 60947-3

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**

Tap-off boxes

EMPTY TAP-OFF BOX 125A TO 1250A : BOLT-ON TYPE



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**

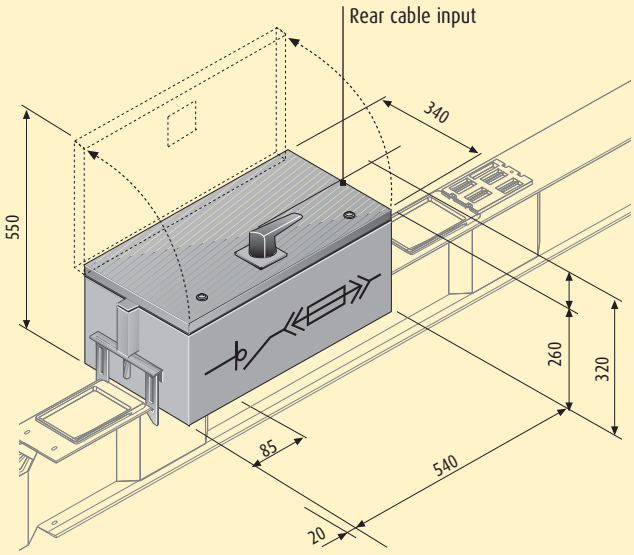
WARNING

The bolted boxes are to be installed when the busbar is disconnected and not energized.

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

Tap-off boxes can be pre-equipped with DPX moulded case circuit breakers (MCCB) upon request.

TAP-OFF BOX WITH AC23A SWITCH DISCONNECTOR AND FUSE CARRIER, 125A TO 400A : PLUG-IN TYPE



Box rating	Fuse	Items
125A	NH00	**65282001P**
250A	NH1	**65282002P**
400A	NH2	**65282003P**

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

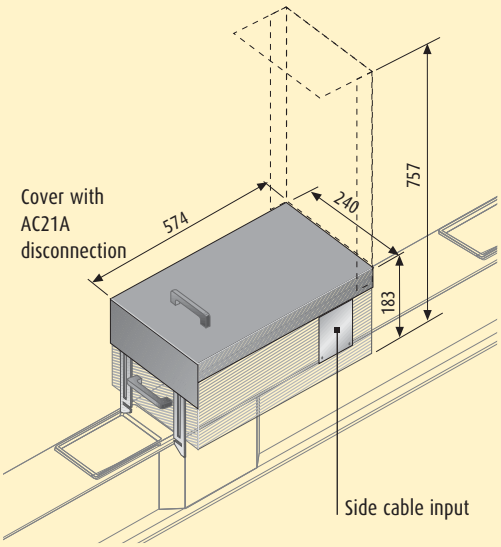
Can be installed and removed when the busbar is energized.
To be applied on elements with any rating, with tap-off outlets.

For operating voltages (Ue) different from 400V, please contact Zucchini.

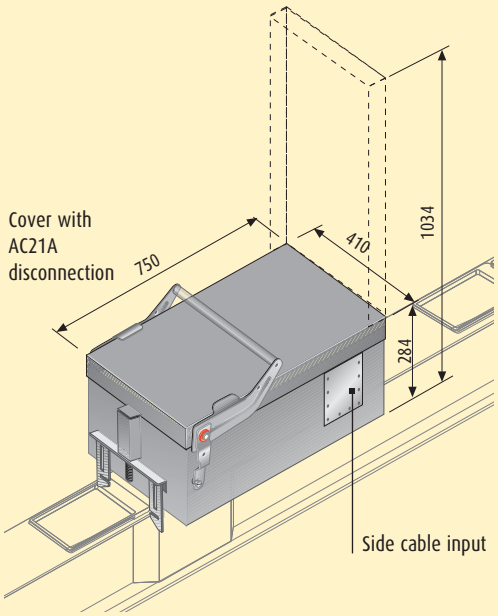
Fuses not included. See Legrand catalogue.

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.

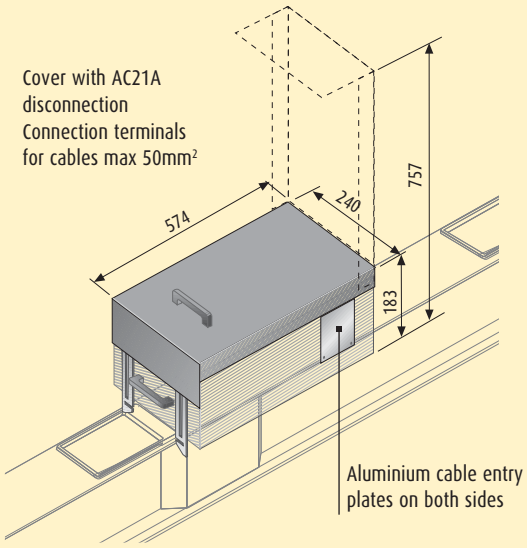
These tap-off boxes are equipped with a switch disconnector (AC23) and a fuse carrier. The disconnector switch is operated through a rotary handle on the cover (not shown in the picture).
N.B. Cover with AC21A disconnection: it is not possible to open, close, install or pull out the tap-off box if the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

Fuses not included. See Legrand catalogue.

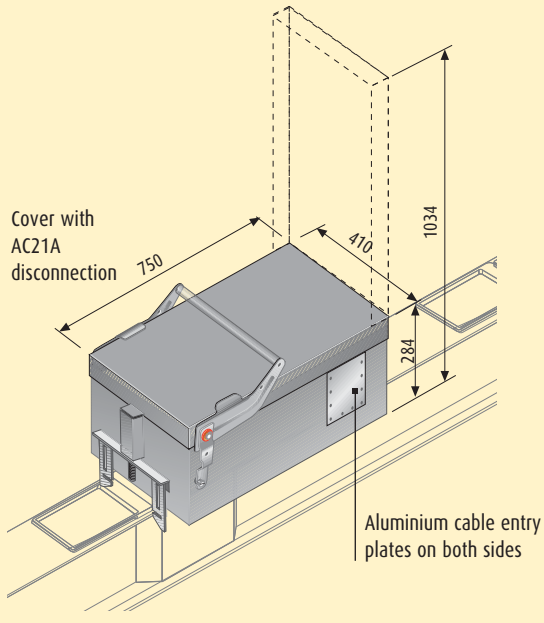
Can be installed and removed when the busbar is energized.
To be applied on elements with any rating, with tap-off outlets.

Tap-off boxes

EMPTY TAP-OFF BOX 63A TO 630A



from 63A to 160A



from 250A to 630A

EMPTY VERSION

Rating A	Items
63	**65285011P**
125	**65285012P**
160	**65285013P**
250	**65285014P**
630	**65285016P**

Tap-off boxes can be pre-equipped with DPX moulded case circuit breakers (MCCB) upon request.

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

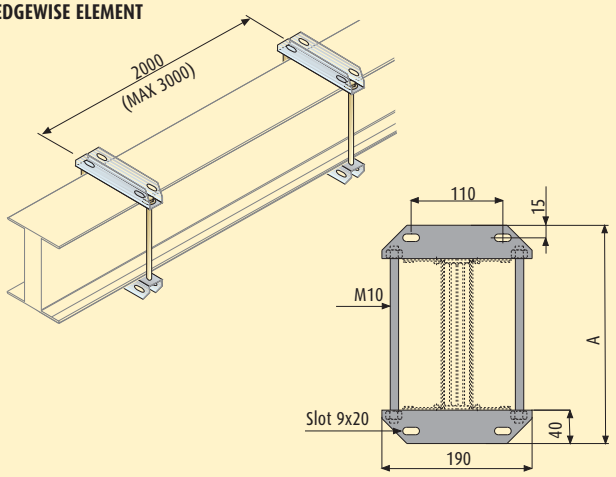
Fixing supports

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

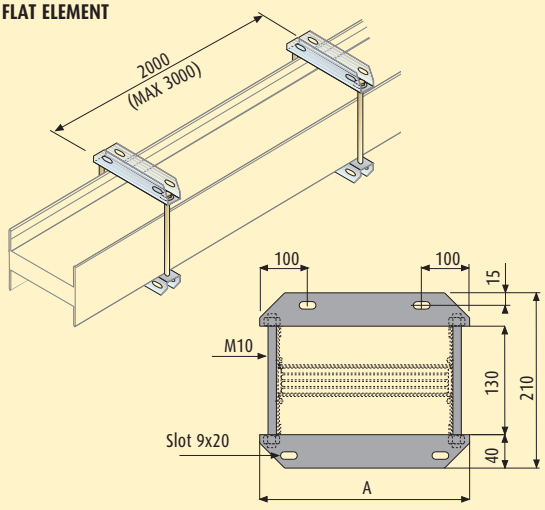


SUSPENSION BRACKET FOR FLAT INSTALLATION

	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

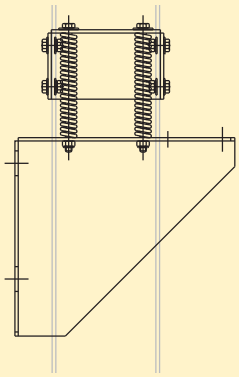


Fixing supports

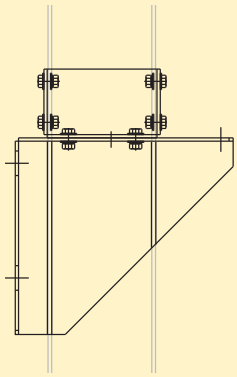
BRACKETS FOR VERTICAL ELEMENTS

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
	Type 1	Type 1	Type 1	Type 1	Type 1	Type 2	Type 3	Type 4	Type 4
A - with bracket and springs	**65213711**	**65213711**	**65213711**	**65213711**	**65213712**	**65213714**	**65213742**	**65213743**	**65213744**
B - with bracket	**65213721**	**65213721**	**65213721**	**65213721**	**65213722**	**65213724**	**65213752**	**65213753**	**65213754**
C - with springs	**65213701**	**65213701**	**65213701**	**65213701**	**65213702**	**65213704**	**65213732**	**65213733**	**65213734**
D - bracket only	**65213761**	**65213761**	**65213761**	**65213761**	**65213762**	**65213764**	**65213772**	**65213773**	**65213774**
E - naval applications	-	-	-	-	-	-	**65213782**	**65213783**	**65213784**
B - anti-seismic	-	-	-	-	-	-	**65213792**	**65213793**	**65213794**
						single bar	double bar		

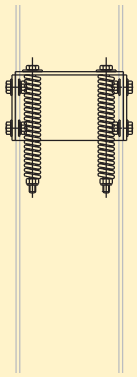
Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
	Type 1	Type 1	Type 1	Type 1	Type 1	Type 2	Type 3	Type 4	Type 4
A - with bracket and springs	**65213711**	**65213711**	**65213711**	**65213712**	**65213712**	**65213714**	**65213742**	**65213743**	**65213744**
B - with bracket	**65213721**	**65213721**	**65213721**	**65213722**	**65213722**	**65213724**	**65213752**	**65213753**	**65213754**
C - with springs	**65213701**	**65213701**	**65213701**	**65213702**	**65213702**	**65213704**	**65213732**	**65213733**	**65213734**
D - bracket only	**65213761**	**65213761**	**65213761**	**65213762**	**65213762**	**65213764**	**65213772**	**65213773**	**65213774**
E - naval applications	-	-	-	-	-	-	**65213782**	**65213783**	**65213784**
B - anti-seismic	-	-	-	-	-	-	**65213792**	**65213793**	**65213794**
						single bar	double bar		



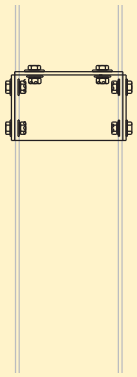
A
WITH BRACKET AND SPRINGS



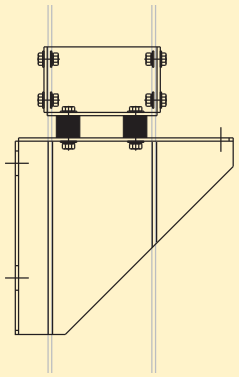
B
WITH ANTI-SEISMIC BRACKET*



C
WITH SPRINGS



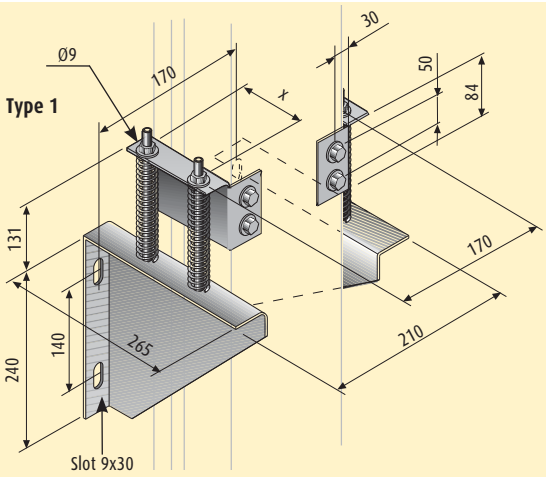
D
BRACKET ONLY

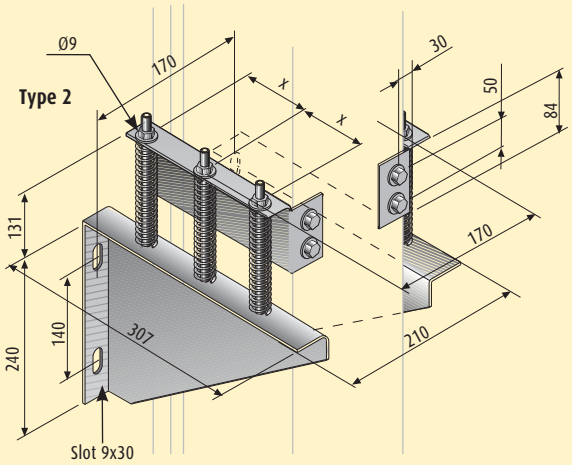


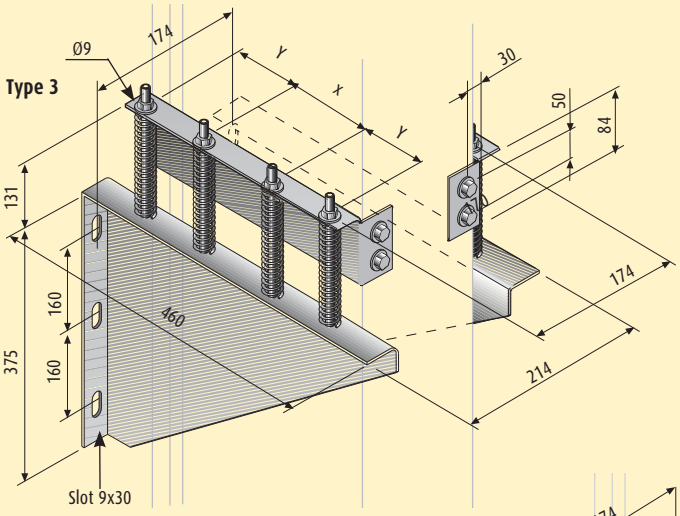
E
NAVAL APPLICATIONS

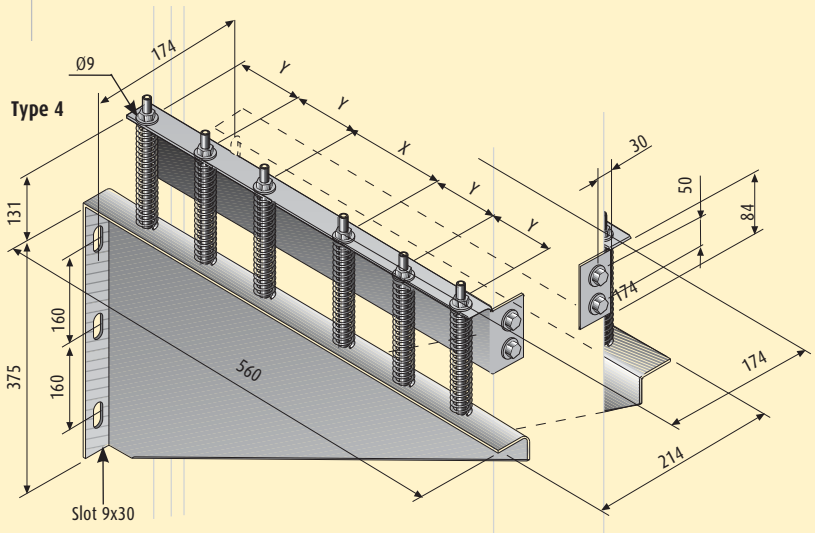
*B: For single bar elements, the standard bracket is also anti-seismic rated.
For double bar elements, there is a specific anti-seismic bracket part number.

Fixing supports
Dimensions









X AND Y DIMENSIONS OF THE BRACKETS

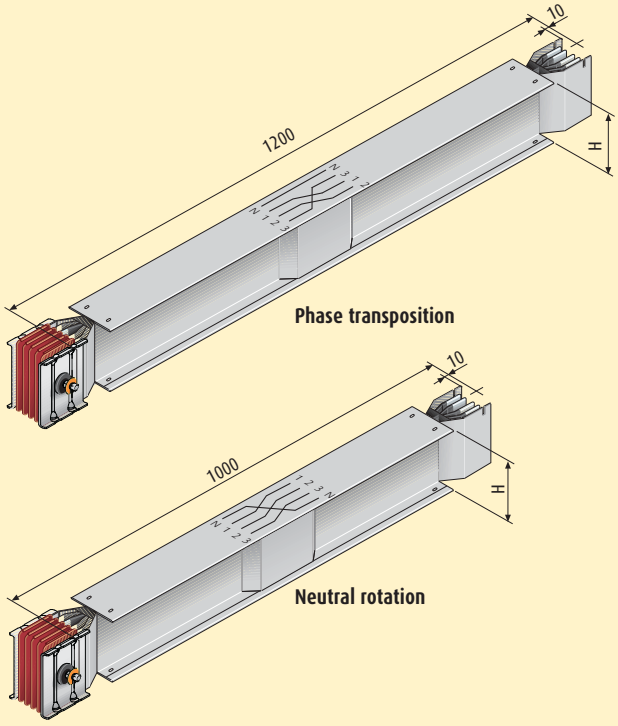
	Type 1	Type 1	Type 2	Type 2	Type 3	Type 4	Type 4
Aluminium	630A to 1000A	1250A	1600A	2000A	2500A	3200A	4000A
Copper	800A to 1250A	1600A	2000A	2500A	3200A	4000A	5000A
x [mm]	**90**	**120**	**80**	**90**	**80**	**80**	**80**
y [mm]	-	-	-	-	**110**	**80**	**90**

Transposition element
End cover

TRANSPOSITION ELEMENTS

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
Phase transposition	**60287100P**	**60287101P**	**60287102P**	**60287104P**	**60287106P**	**60287107P**	**60397104P**	**60397106P**	**60397107P**
Neutral rotation	**60287140P**	**60287141P**	**60287142P**	**60287144P**	**60287146P**	**60287147P**	**60397144P**	**60397146P**	**60397147P**
						single bar	double bar		

Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
Phase transposition	**65287100P**	**65287101P**	**65287103P**	**65287105P**	**65287106P**	**65287108P**	**65397105P**	**65397106P**	**65397108P**
Neutral rotation	**65287140P**	**65287141P**	**65287143P**	**65287145P**	**65287146P**	**65287148P**	**65397145P**	**65397146P**	**65397148P**
						single bar	double bar		



In particularly long carrying sections (>100 metres) it is recommended to insert two transposition elements always by two: (one placed at 1/3 and one placed at 2/3 of the trunking path) to balance the electric impedance of the system.

e.g.: in a 300m line one phase transposition at 100m and one at 200m.

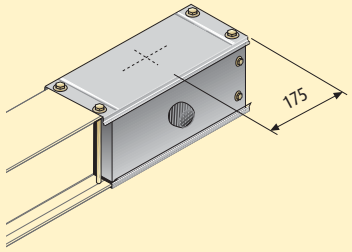
Dimension H changes with the rating; it is specified in the specifications on page 52-57.

When the sequence of the distribution board phases is different from that of the transformer, it is possible to use an element that allows a neutral rotation. Please refer to Zucchini for more information.

END COVER IP55

Aluminium	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A
	65283101P	**65283101P**	**65283101P**	**65283101P**	**65283102P**	**65283104P**	**65393102P**	**65393103P**	**65393104P**
						single bar	double bar		

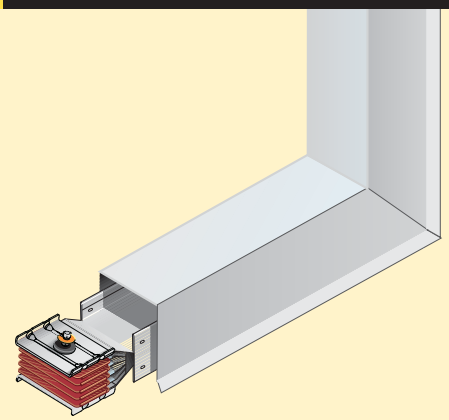
Copper	800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A
	65283101P	**65283101P**	**65283101P**	**65283102P**	**65283102P**	**65283104P**	**65393102P**	**65393103P**	**65393104P**
						single bar	double bar		

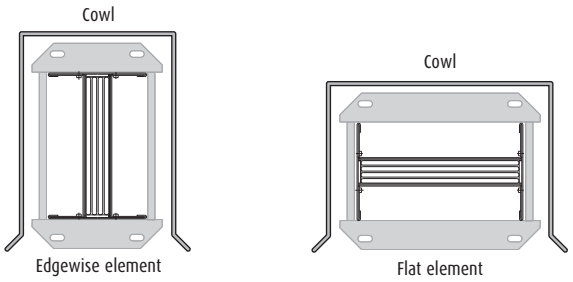


Completes the IP55 Degree of protection of the line

Protection accessories

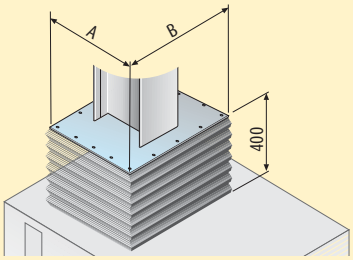
PROTECTIVE COVER FOR OUTDOOR APPLICATIONS





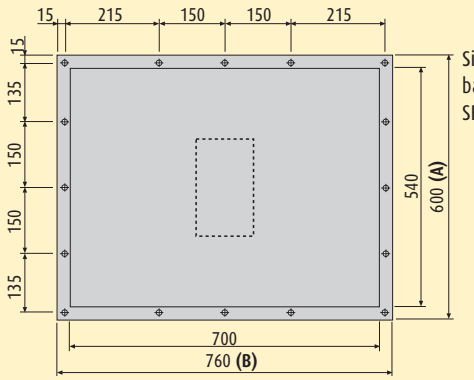
Covering accessory to be used for outdoor installations and wherever the standard IP55 Degree of protection is not adequate.

PROTECTIVE BELLOWS

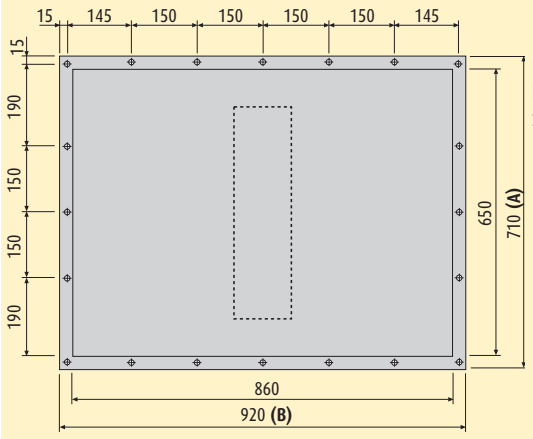


Aluminium	630A to 2000A	2500A to 4000A
	SF766040	**SF927140**
	single bar	double bar
Copper	800A to 2500A	3200A to 5000A
	SF766040	**SF927140**
	single bar	double bar

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)

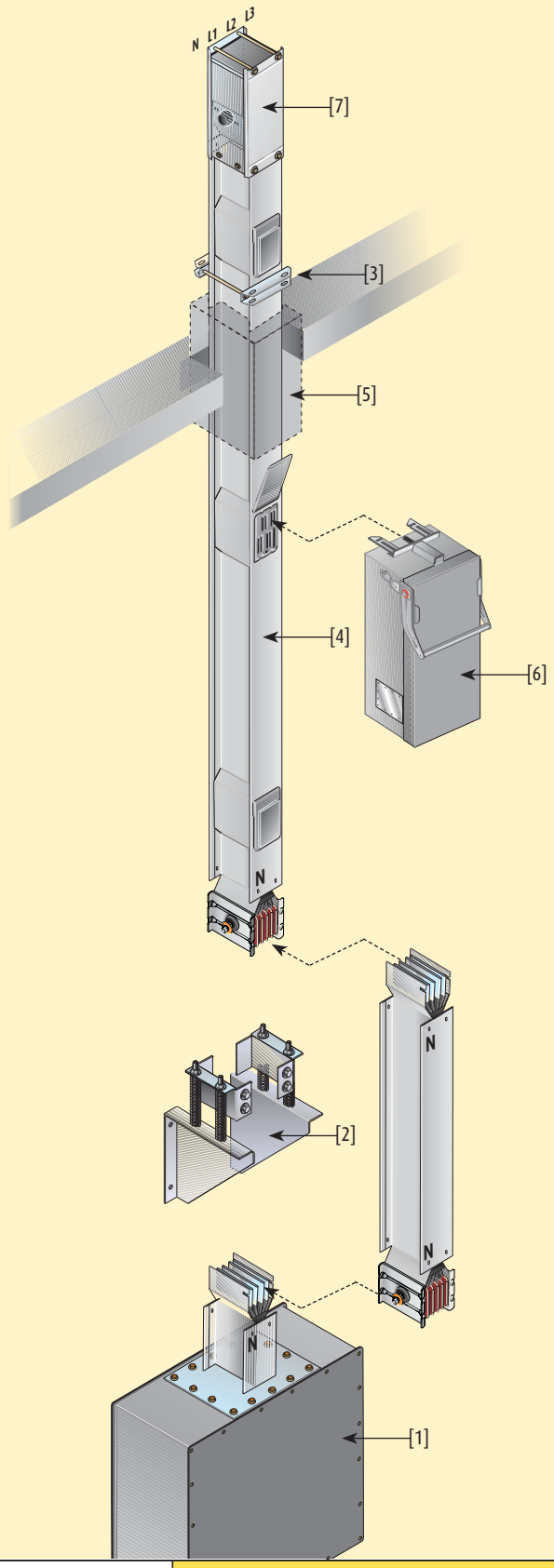


Single bar SF766040



Double bar SF927140

Operating instructions on how to design riser mains



[1] Use an RH end feed unit (without monobloc).
In order to position the tap-off boxes correctly, the neutral conductor of the riser main must be on the left side of the element.

[2] Use one or more suspension brackets for the vertical elements, according to the weight of the whole riser mains.
For risers that are shorter than 4 metres, fix to the base with type B brackets (see p.42)
when longer, use a type A suspension bracket (see p. 42) every 300 kg of risers (including the boxes).

[3] Use a standard suspension bracket to hang the busbar every 2 metres of riser mains.

[4] Use elements with tap-off outlets (see page 13).

[5] Use S120 fire barrier kit for each compartment floor (see page 15).

[6] The tap-off boxes can be installed in the tap-off outlets and near the connection between the elements.
In both cases, the boxes extend downward.

[7] At the end of the riser mains, position the IP55 end cover.

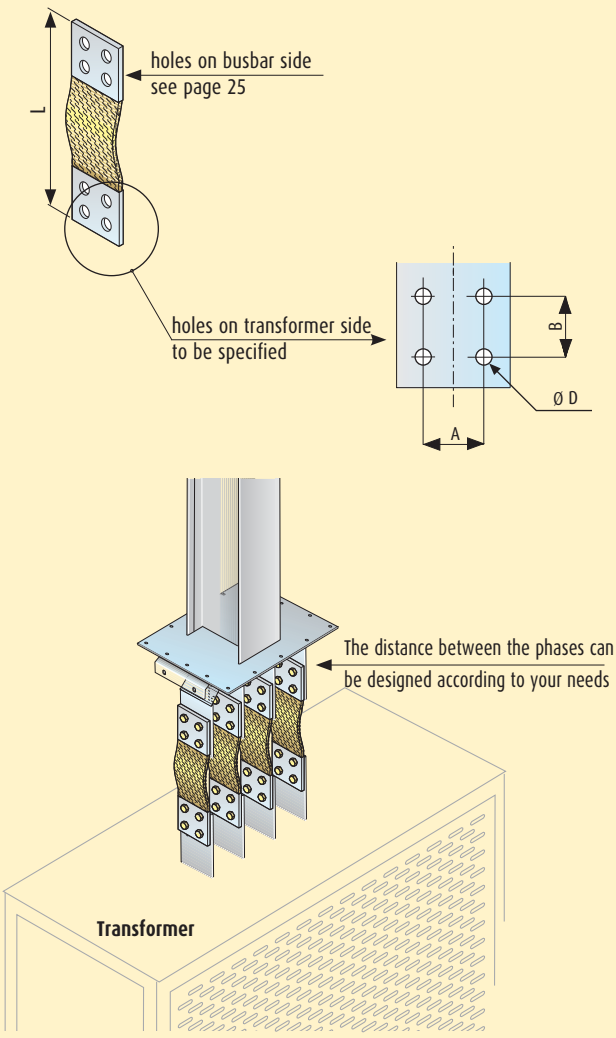
(For further information, please refer to the technical guide)

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**

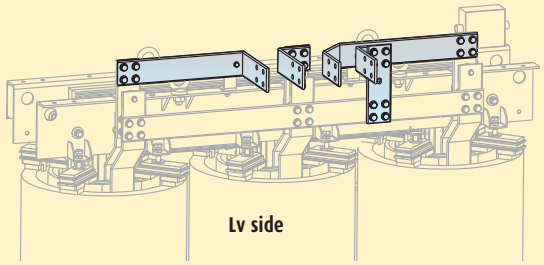


Example of a vertical connection

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

The system:
The EdM transformer advantage

TYPE A SETUP

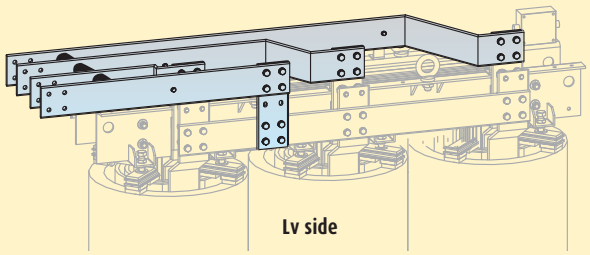


The Legrand group product synergy answers to the global installation need.
The EdM cast resin transformers have specifically designed connections for the Zucchini busbars.

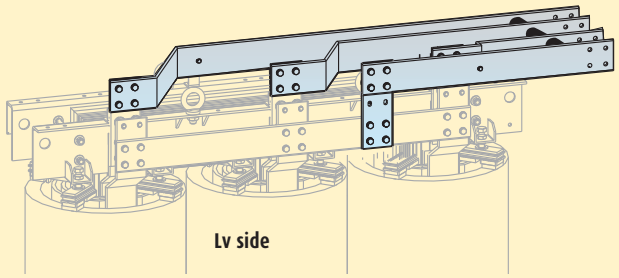
The versions shown represent some of the standardized solutions.

For the outgoing busbar run from the transformer, see pages 26-33.

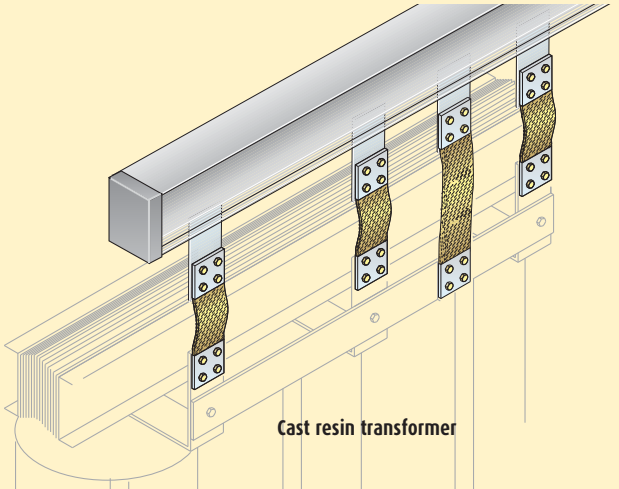
TYPE B SETUP



TYPE C SETUP



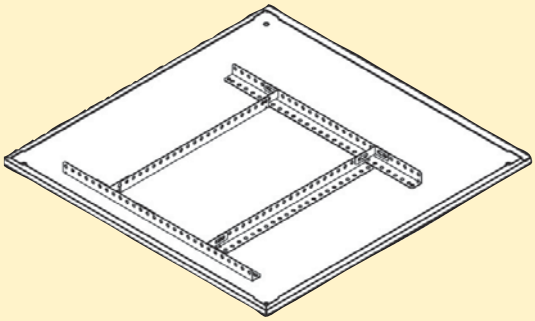
ATR CONNECTION INTERFACE



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

The system:
The Legrand XL³ advantage

INSTALLATION KIT FOR MAS 400 CABINET



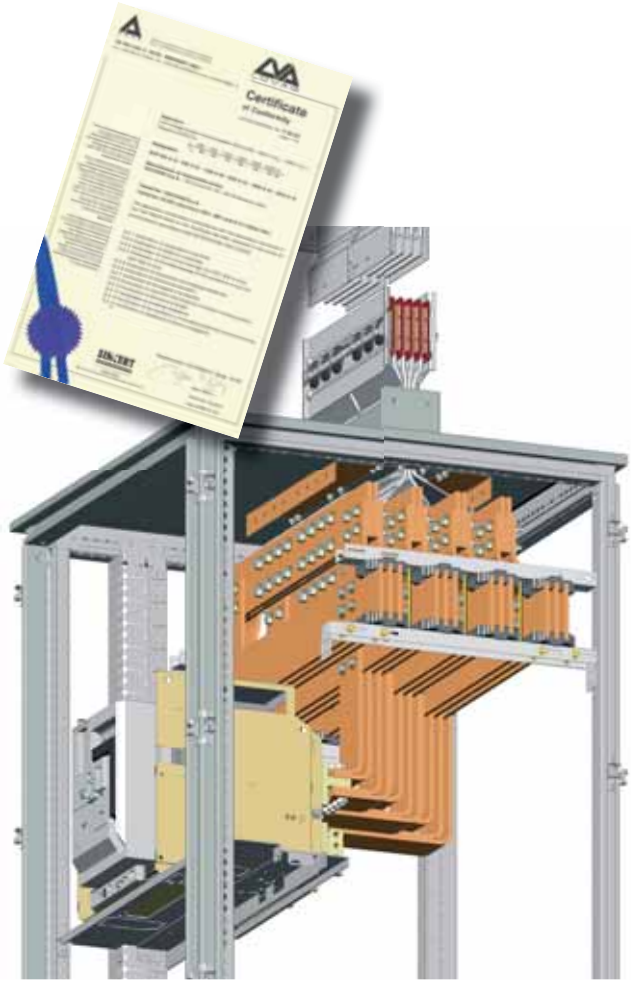
Item	
205 29	kit for reinforcing the roof of the XL³ cabinets for the installation of the Zucchini interface to connect the busbar systems

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

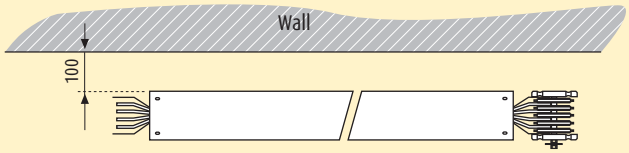
The safety and the operational efficiency of the Zucchini - Legrand system are guaranteed by the **system certification**, achieved after rigorous tests carried out in the most important international laboratories.

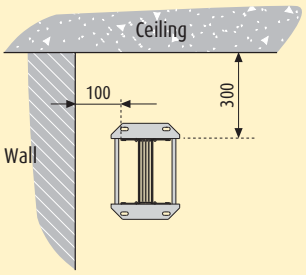
For more details about the XL³, please refer to the Legrand Catalogue.

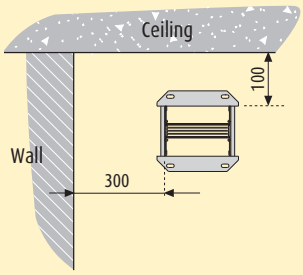


Installation guidelines

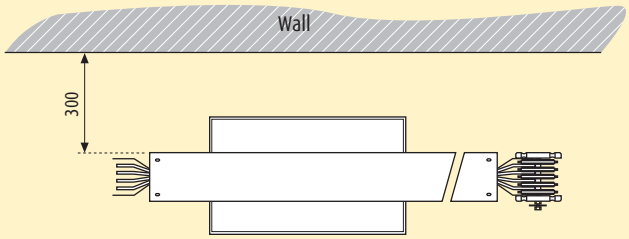
MINIMUM DISTANCE OF THE WALL / CEILING ELEMENTS

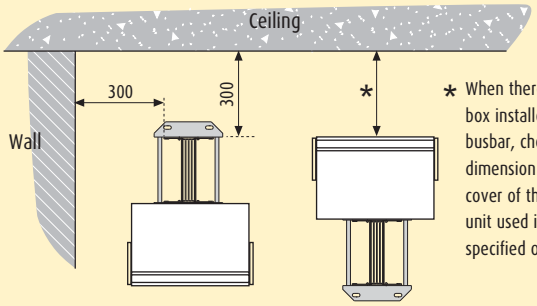




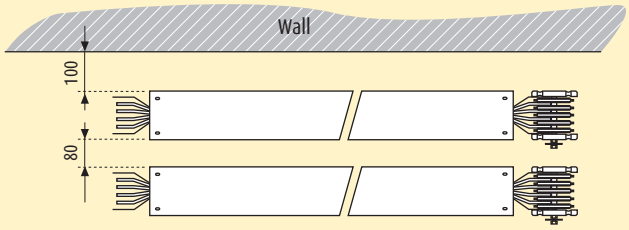


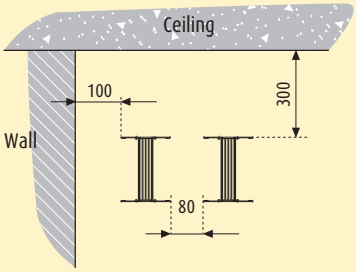
When there are tap-off units along the busbars, the minimum distances depend on the dimensions of the tap-offs selected.



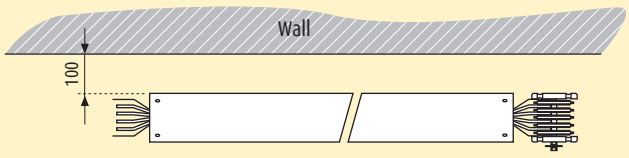


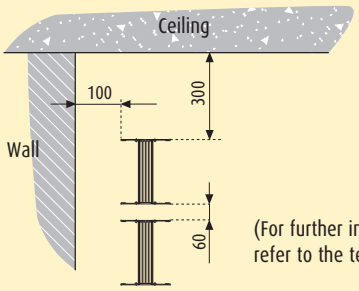
* When there is a tap-off box installed above the busbar, check the overall dimension of the open cover of the tap-off unit used in the section specified on pages 35-38





Minimum installation distance when there are several adjacent lines



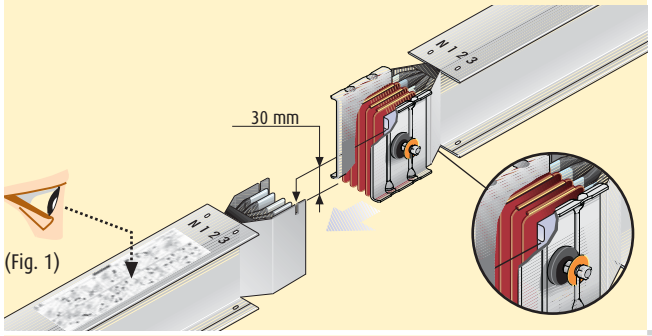


(For further information, please refer to the technical guide)

Minimum installation distance when there are several overlapped lines

Installation guidelines

INSTALLATION SEQUENCE OF THE JUNCTION

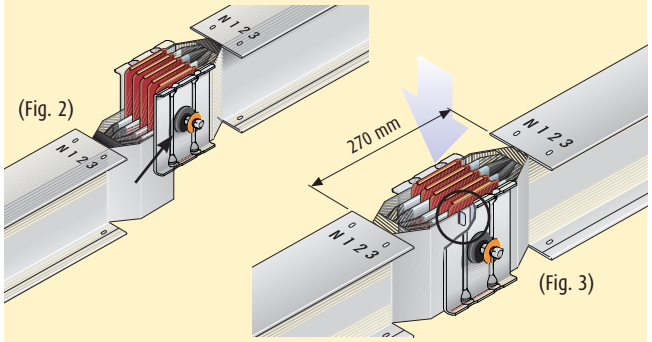


(Fig. 1)

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.

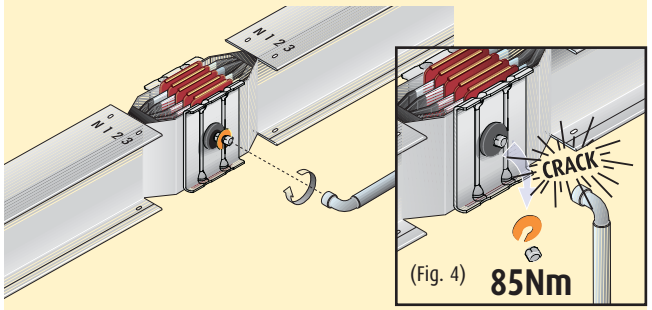


(Fig. 2)

(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).

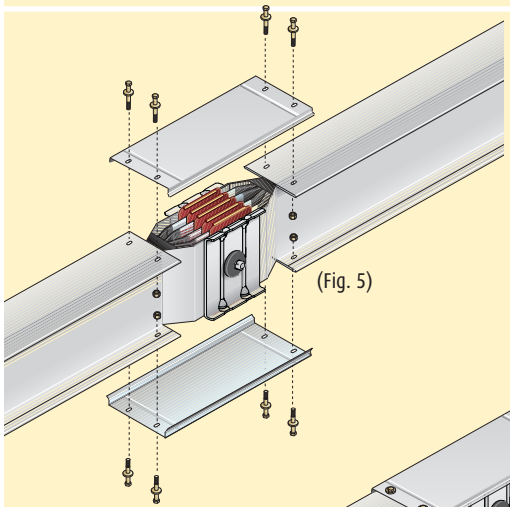


(Fig. 4)

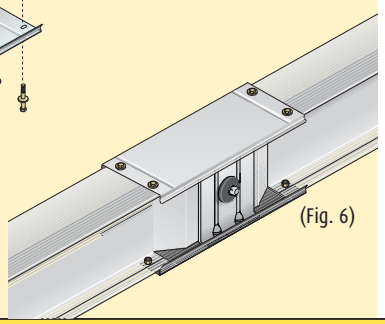
Tighten the bolt of the monobloc until the 1st head breaks off (Fig. 4).

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).

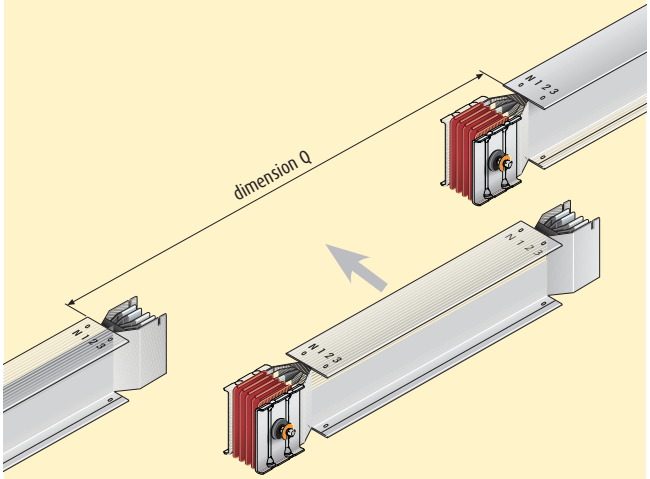

(Fig. 6)

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

For further information, please refer to the technical guide.

Measurement of special element lengths

MEASUREMENT OF STRAIGHT ELEMENTS

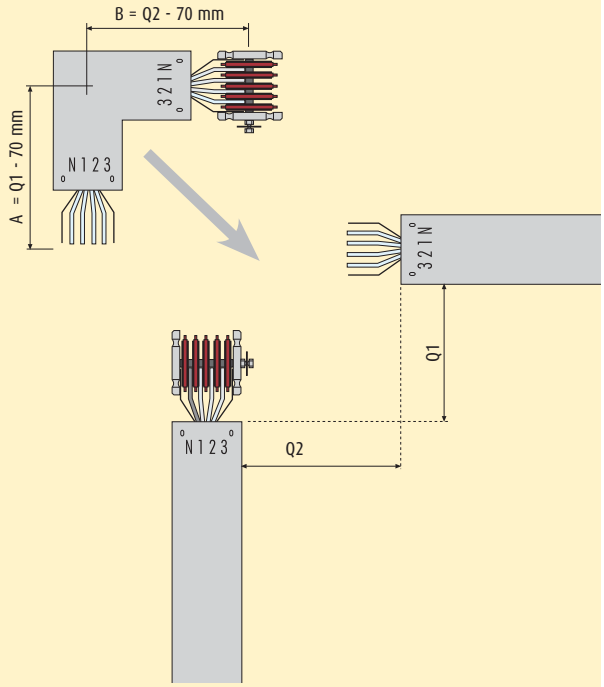


The exact length of the piece to be ordered can be determined by measuring the distance between the elements (as shown in the picture) and then subtracting 270 mm from the dimension that has been taken.

Length of element = Q - 270mm

Example: dimension measured = 2500 mm
order a 2230 mm element

MEASUREMENT OF SPECIAL TRUNKING ELEMENTS



HORIZONTAL ELBOW

The exact length of the piece to be ordered can be determined by measuring the dimensions Q1 and Q2 (as shown in the picture) and then subtracting 70 mm from each dimension that has been taken.

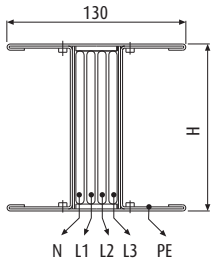
Dimension of the element to order:
A = Q1 - 70 mm
B = Q2 - 70 mm

For further information, please refer to the technical guide.

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)



Technical data
SCP (3L+N+PE)

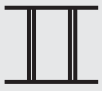
ALUMINIUM

		single bar						double bar		
Rated current	I_n [A]	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**
Casing overall dimensions	L x H [mm]	130x130	130x130	130x130	130x130	130x170	130x220	130x380	130x440	130x480
Operating voltage	[V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	Ui [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Frequency	[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	36	42	50	75	80	80	150	160	160
Allowable peak current for three-phase fault	I_{pk} [kA]	76	88	110	165	176	176	330	352	352
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	22	25	30	45	48	48	90	96	96
Allowable peak current for single-phase fault	I_{pk} [kA]	48	55	66	99	106	106	198	211	211
Allowable specific energy for three-phase fault	I^2t [MA^2s]	1296	1764	2500	5625	6400	6400	22500	25600	25600
Phase resistance	R_{20} [mΩ/m]	0.077	0.058	0.058	0.047	0.035	0.027	0.022	0.017	0.014
Phase reactance (50 Hz)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.006	0.006	0.006
Phase impedance	Z [mΩ/m]	0.080	0.060	0.060	0.049	0.037	0.029	0.022	0.018	0.015
Phase resistance at thermal conditions	R_t [mΩ/m]	0.084	0.064	0.069	0.056	0.041	0.032	0.025	0.020	0.017
Phase impedance at thermal conditions	Z [mΩ/m]	0.087	0.066	0.071	0.058	0.043	0.034	0.026	0.021	0.018
Neutral resistance	R_{20} [mΩ/m]	0.077	0.058	0.058	0.047	0.035	0.027	0.022	0.017	0.014
Resistance of the protective conductor (PE 1)	R_{PE} [mΩ/m]	0.125	0.125	0.125	0.125	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	0.036	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	0.050	0.041	0.033	0.021	0.018	0.017
Reactance of the protective conductor (50 Hz)	X_{PE} [mΩ/m]	0.080	0.078	0.078	0.048	0.039	0.028	0.020	0.015	0.016
Resistance of the fault loop (PE 1)	R_o [mΩ/m]	0.209	0.189	0.194	0.181	0.154	0.133	0.100	0.089	0.082
Resistance of the fault loop (PE 2)	R_o [mΩ/m]	0.120	0.100	0.105	0.092	0.069	0.055	0.039	0.032	0.028
Resistance of the fault loop (PE 3)	R_o [mΩ/m]	0.134	0.114	0.119	0.106	0.082	0.065	0.046	0.038	0.034
Reactance of the fault loop (50 Hz)	X_o [mΩ/m]	0.10	0.10	0.10	0.06	0.05	0.04	0.03	0.02	0.02
Impedance of the fault loop (PE 1)	Z_o [mΩ/m]	0.233	0.212	0.216	0.192	0.163	0.139	0.103	0.092	0.085
Impedance of the fault loop (PE 2)	Z_o [mΩ/m]	0.158	0.138	0.142	0.112	0.087	0.068	0.047	0.038	0.036
Impedance of the fault loop (PE 3)	Z_o [mΩ/m]	0.169	0.149	0.152	0.123	0.098	0.076	0.053	0.044	0.041
Zero-sequence resistance phase - N	R_o [mΩ/m]	0.306	0.257	0.257	0.238	0.172	0.140	0.107	0.080	0.070
Zero-sequence reactance phase - N	X_o [mΩ/m]	0.174	0.160	0.160	0.128	0.106	0.108	0.083	0.073	0.060
Zero-sequence Impedance phase - N	Z_o [mΩ/m]	0.352	0.303	0.303	0.270	0.202	0.177	0.135	0.108	0.092
Zero-sequence resistance phase- PE	R_o [mΩ/m]	0.581	0.519	0.519	0.369	0.321	0.270	0.217	0.196	0.164
Zero-sequence reactance phase - PE	X_o [mΩ/m]	0.263	0.229	0.229	0.191	0.175	0.212	0.155	0.148	0.146
Zero-sequence Impedance phase - PE	Z_o [mΩ/m]	0.638	0.567	0.567	0.416	0.366	0.343	0.267	0.246	0.22
Voltage drop factor with distributed load k [V/m/A]10^{-6} $\Delta V = k \cdot L \cdot I_e \cdot 10^{-6}$ [V]	cosφ = 0.70	65.1	49.5	52.5	43.3	33.6	26.3	18.8	15.9	14.2
	cosφ = 0.75	67.7	51.5	54.7	45.1	34.7	27.2	19.6	16.5	14.6
	cosφ = 0.80	70.1	53.3	56.8	46.7	35.7	28.0	20.4	17.1	15.1
	cosφ = 0.85	72.3	55.1	58.7	48.2	36.6	28.7	21.1	17.6	15.4
	cosφ = 0.90	74.1	56.5	60.4	49.4	37.3	29.2	21.7	18.0	15.7
	cosφ = 0.95	75.3	57.5	61.6	50.3	37.6	29.4	22.1	18.2	15.8
	cosφ = 1.00	72.7	55.6	60.0	48.6	35.6	27.8	21.6	17.4	14.9
Weight (PE 1)	p [kg/m]	17.5	18.3	18.3	19.8	24.2	29.6	40.1	48.0	54.9
Weight (PE 2)	p [kg/m]	20.7	21.5	21.5	23.0	28.4	35.0	48.3	57.6	65.6
Weight (PE 3)	p [kg/m]	18.5	19.3	19.3	20.9	25.6	31.4	42.8	51.1	58.4
Fire load	[kWh/m]	4.5	5.5	5.5	6.0	8.5	10.5	16.0	19.0	21.0
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]	100	123	208	263	315	386	468	618	827
Min/Max Ambient Temperature	[°C]	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50	-5/50

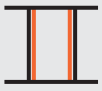
* Class F thermal resistance (155°C) available on request

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)

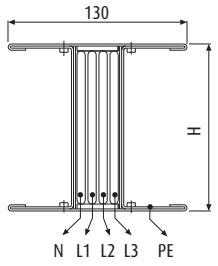


(*)
PE 1
Standard version



(*)
PE 2
Extra earth - COPPER

(*)
PE 3
Extra earth - ALUMINUM



Technical data
SCP (3L+N+PE)

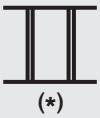
COPPER

		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

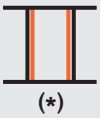
* Class F thermal resistance (155°C) available on request

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

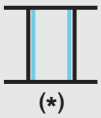
- **Regulations and conformity**:
  IEC/EN 60439-1 & 2; DIN VDE 0660 500 & 502
- **Product suitable for Constant/Cyclic Warm, humid climates:**
  DIN IEC 68 part 2-3; DIN IEC 68 part 2-30
- **Degree of protection**:
  IP55; IPx7 carrying lines available with accessories, on request
- **Insulation and 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)



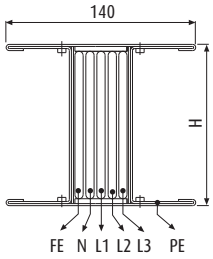
(*)
PE 1
Standard version



(*)
PE 2
Extra earth - COPPER



(*)
PE 3
Extra earth - ALUMINIUM



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

ALUMINIUM

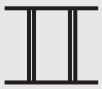
					single bar				double bar	
Rated current	I_n [A]	630	800	1000	1250	1600	2000	2500	3200	4000
Casing overall dimensions	L x H [mm]	140x130	140x130	140x130	140x130	140x170	140x220	140x380	140x440	140x480
Operating voltage	U_e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	U_i [V]	1000	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	36	42	50	75	80	80	150	160	160
Allowable peak current for three-phase fault	I_{pk} [kA]	76	88	110	165	176	176	330	352	352
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	22	25	30	45	48	48	90	96	96
Allowable peak current for single-phase fault	I_{pk} [kA]	48	55	66	99	106	106	198	211	211
Allowable specific energy for three-phase fault	I^2t [MA^2s]	1296	1764	2500	5625	6400	6400	22500	25600	25600
Phase resistance	R_{20} [mΩ/m]	0.077	0.058	0.058	0.047	0.035	0.027	0.022	0.017	0.014
Phase reactance (50 Hz)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.006	0.006	0.006
Phase impedance	Z [mΩ/m]	0.080	0.060	0.060	0.049	0.037	0.029	0.022	0.018	0.015
Phase resistance at thermal conditions	R_t [mΩ/m]	0.084	0.064	0.069	0.056	0.041	0.032	0.025	0.020	0.017
Phase impedance at thermal conditions	Z [mΩ/m]	0.087	0.066	0.071	0.058	0.043	0.034	0.026	0.021	0.018
Neutral resistance	R_{20} [mΩ/m]	0.077	0.058	0.058	0.047	0.035	0.027	0.022	0.017	0.014
Functional earthing resistance (FE)	R_{20} [mΩ/m]	0.077	0.058	0.058	0.047	0.035	0.027	0.022	0.017	0.014
Functional earthing reactance (FE)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.006	0.006	0.006
Resistance of the protective conductor (PE type 1)	R_{PE} [mΩ/m]	0.121	0.121	0.121	0.121	0.110	0.098	0.074	0.068	0.064
Resistance of the protective conductor (PE type 2)	R_{PE} [mΩ/m]	0.035	0.035	0.035	0.035	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	0.050	0.040	0.033	0.020	0.018	0.017
Reactance of the protective conductor (50 Hz)	X_{PE} [mΩ/m]	0.080	0.078	0.078	0.048	0.039	0.028	0.020	0.015	0.016
Resistance of the fault loop (PE 1)	R_0 [mΩ/m]	0.131	0.103	0.108	0.090	0.067	0.053	0.042	0.034	0.028
Resistance of the fault loop (PE 2)	R_0 [mΩ/m]	0.108	0.086	0.091	0.076	0.057	0.044	0.033	0.027	0.023
Resistance of the fault loop (PE 3)	R_0 [mΩ/m]	0.114	0.091	0.096	0.080	0.060	0.047	0.035	0.029	0.025
Reactance of the fault loop (50 Hz)	X_0 [mΩ/m]	0.10	0.10	0.10	0.06	0.05	0.04	0.03	0.02	0.02
Impedance of the fault loop (PE 1)	Z_0 [mΩ/m]	0.167	0.140	0.144	0.110	0.086	0.066	0.049	0.040	0.036
Impedance of the fault loop (PE 2)	Z_0 [mΩ/m]	0.149	0.128	0.132	0.099	0.078	0.059	0.042	0.034	0.032
Impedance of the fault loop (PE 3)	Z_0 [mΩ/m]	0.154	0.132	0.135	0.102	0.080	0.061	0.044	0.036	0.033
Zero-sequence resistance phase - N	R_0 [mΩ/m]	0.306	0.257	0.257	0.238	0.172	0.140	0.107	0.080	0.070
Zero-sequence reactance phase - N	X_0 [mΩ/m]	0.174	0.160	0.160	0.128	0.106	0.108	0.083	0.073	0.060
Zero-sequence Impedance phase - N	Z_0 [mΩ/m]	0.352	0.303	0.303	0.270	0.202	0.177	0.135	0.108	0.092
Zero-sequence resistance phase- PE	R_0 [mΩ/m]	0.468	0.387	0.387	0.246	0.213	0.173	0.113	0.107	0.070
Zero-sequence reactance phase - PE	X_0 [mΩ/m]	0.263	0.229	0.229	0.191	0.175	0.212	0.155	0.148	0.146
Zero-sequence Impedance phase - PE	Z_0 [mΩ/m]	0.537	0.450	0.450	0.311	0.276	0.274	0.192	0.183	0.162
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	65.1	49.5	52.5	43.3	33.6	26.3	18.8	15.9	14.2
	cosφ = 0.75	67.7	51.5	54.7	45.1	34.7	27.2	19.6	16.5	14.6
	cosφ = 0.80	70.1	53.3	56.8	46.7	35.7	28.0	20.4	17.1	15.1
	cosφ = 0.85	72.3	55.1	58.7	48.2	36.6	28.7	21.1	17.6	15.4
	cosφ = 0.90	74.1	56.5	60.4	49.4	37.3	29.2	21.7	18.0	15.7
	cosφ = 0.95	75.3	57.5	61.6	50.3	37.6	29.4	22.1	18.2	15.8
	cosφ = 1.00	72.7	55.6	60.0	48.6	35.6	27.8	21.6	17.4	14.9
Weight (PE 1)	p [kg/m]	21.0	22.0	22.0	23.8	29.1	35.6	48.2	57.6	65.9
Weight (PE 2)	p [kg/m]	24.2	25.1	25.1	27.0	33.2	41.0	56.3	67.2	76.6
Weight (PE 3)	p [kg/m]	22.0	23.0	23.0	24.8	30.4	37.3	50.8	60.7	69.4
Fire load	[kWh/m]	5.6	6.9	6.9	7.5	10.6	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]	100	123	208	263	315	386	468	618	827
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

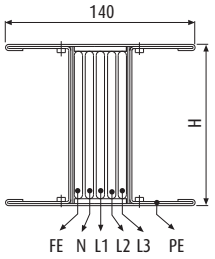
ΔV : for calculations, see page 95



(*)
PE 1
Standard version

(*)
PE 2
Extra earth - COPPER

(*)
PE 3
Extra earth - ALUMINIUM



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)

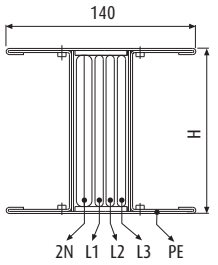
* Class F thermal resistance (155°C) available on request

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



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

ALUMINIUM

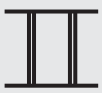
		single bar						double bar		
Rated current	I_n [A]	630	800	1000	1250	1600	2000	2500	3200	4000
Casing overall dimensions	L x H [mm]	140x130	140x130	140x130	140x130	140x170	140x220	140x380	140x440	140x480
Operating voltage	U_e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	U_i [V]	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	36	42	50	75	80	80	150	160	160
Allowable peak current for three-phase fault	I_{pk} [kA]	76	88	110	165	176	176	330	352	352
Rated short-time current for single-phase fault (1 s)	I_{cw} [kA]rms	22	25	30	45	48	48	90	96	96
Allowable peak current for single-phase fault	I_{pk} [kA]	48	55	66	99	106	106	198	211	211
Rated short-time protection current (1 s)	I_{cw} [kA]rms	22	25	30	45	48	48	90	96	96
Protection circuit peak rated current	I_{pk} [kA]	48	55	66	99	106	106	198	211	211
Allowable specific energy for three-phase fault	I^2t [MA^2s]	1296	1764	2500	5625	6400	6400	22500	25600	25600
Phase resistance	R_{20} [mΩ/m]	0.077	0.058	0.058	0.047	0.035	0.027	0.022	0.017	0.014
Phase reactance (50 Hz)	X [mΩ/m]	0.023	0.017	0.017	0.015	0.014	0.011	0.006	0.006	0.006
Phase impedance	Z [mΩ/m]	0.080	0.060	0.060	0.049	0.037	0.029	0.022	0.018	0.015
Phase resistance at thermal conditions	R_t [mΩ/m]	0.084	0.064	0.069	0.056	0.041	0.032	0.025	0.020	0.017
Phase impedance at thermal conditions	Z [mΩ/m]	0.087	0.066	0.071	0.058	0.043	0.034	0.026	0.021	0.018
Neutral resistance	R_{20} [mΩ/m]	0.038	0.029	0.029	0.023	0.017	0.013	0.011	0.008	0.007
Resistance of the protective conductor (PE type 1)	R_{PE} [mΩ/m]	0.121	0.121	0.121	0.121	0.110	0.098	0.074	0.068	0.064
Resistance of the protective conductor (PE type 2)	R_{PE} [mΩ/m]	0.035	0.035	0.035	0.035	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	0.050	0.040	0.033	0.020	0.018	0.017
Reactance of the protective conductor (50 Hz)	X_{PE} [mΩ/m]	0.080	0.078	0.078	0.048	0.039	0.028	0.020	0.015	0.016
Resistance of the fault loop (PE 1)	R_o [mΩ/m]	0.205	0.185	0.190	0.177	0.151	0.130	0.099	0.088	0.081
Resistance of the fault loop (PE 2)	R_o [mΩ/m]	0.119	0.099	0.104	0.091	0.069	0.055	0.039	0.032	0.028
Resistance of the fault loop (PE 3)	R_o [mΩ/m]	0.134	0.114	0.119	0.106	0.081	0.065	0.045	0.038	0.034
Reactance of the fault loop (50 Hz)	X_o [mΩ/m]	0.10	0.10	0.10	0.06	0.05	0.04	0.03	0.02	0.02
Impedance of the fault loop (PE 1)	Z_o [mΩ/m]	0.229	0.208	0.213	0.188	0.160	0.136	0.102	0.091	0.084
Impedance of the fault loop (PE 2)	Z_o [mΩ/m]	0.157	0.137	0.141	0.111	0.087	0.068	0.047	0.038	0.036
Impedance of the fault loop (PE 3)	Z_o [mΩ/m]	0.169	0.149	0.152	0.123	0.097	0.076	0.052	0.044	0.041
Zero-sequence resistance phase - N	R_o [mΩ/m]	0.147	0.135	0.135	0.132	0.129	0.126	0.084	0.063	0.048
Zero-sequence reactance phase - N	X_o [mΩ/m]	0.198	0.180	0.180	0.166	0.160	0.190	0.135	0.165	0.103
Zero-sequence Impedance phase - N	Z_o [mΩ/m]	0.247	0.225	0.225	0.212	0.206	0.228	0.159	0.177	0.114
Zero-sequence resistance phase- PE	R_o [mΩ/m]	0.581	0.519	0.519	0.369	0.321	0.270	0.217	0.196	0.164
Zero-sequence reactance phase - PE	X_o [mΩ/m]	0.263	0.229	0.229	0.191	0.175	0.212	0.155	0.148	0.146
Zero-sequence Impedance phase - PE	Z_o [mΩ/m]	0.638	0.567	0.567	0.416	0.366	0.343	0.267	0.246	0.220
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	65.1	49.5	52.5	43.3	33.6	26.3	18.8	15.9	14.2
	cosφ = 0.75	67.7	51.5	54.7	45.1	34.7	27.2	19.6	16.5	14.6
	cosφ = 0.80	70.1	53.3	56.8	46.7	35.7	28.0	20.4	17.1	15.1
	cosφ = 0.85	72.3	55.1	58.7	48.2	36.6	28.7	21.1	17.6	15.4
	cosφ = 0.90	74.1	56.5	60.4	49.4	37.3	29.2	21.7	18.0	15.7
	cosφ = 0.95	75.3	57.5	61.6	50.3	37.6	29.4	22.1	18.2	15.8
	cosφ = 1.00	72.7	55.6	60.0	48.6	35.6	27.8	21.6	17.4	14.9
Weight (PE 1)	p [kg/m]	21.0	22.0	22.0	23.8	29.1	35.6	48.2	57.6	65.9
Weight (PE 2)	p [kg/m]	24.2	25.1	25.1	27.0	33.2	41.0	56.3	67.2	76.6
Weight (PE 3)	p [kg/m]	22.0	23.0	23.0	24.8	30.4	37.3	50.8	60.7	69.4
Fire load	[kWh/m]	5.6	6.9	6.9	7.5	10.6	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]	100	123	208	263	315	386	468	618	827
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

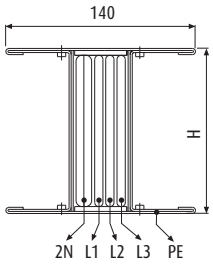
ΔV : for calculations, see page 95



(*)
PE 1
Standard version

(*)
PE 2
Extra earth - COPPER

(*)
PE 3
Extra earth - ALUMINIUM



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

COPPER

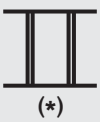
		single bar						double bar		
Rated current	I_n [A]	800	1000	1250	1600	2000	2500	3200	4000	5000
Casing overall dimensions	L x H [mm]	140x130	140x130	140x130	140x170	140x170	140x220	140x380	140x440	140x480
Operating voltage	U_e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000
Insulation voltage	U_i [V]	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

Suggestions for the project development

EXAMPLE FOR QUOTATION CHECK LIST:

1. **Rating**
   .....2500.....A

2. **Application**:
   Transport ☐
   Distribution ☐ No. of outlets .....

3. **Icc at the beginning of the line** .....kA

4. **Material**:
   Aluminium ☑
   Copper ☐

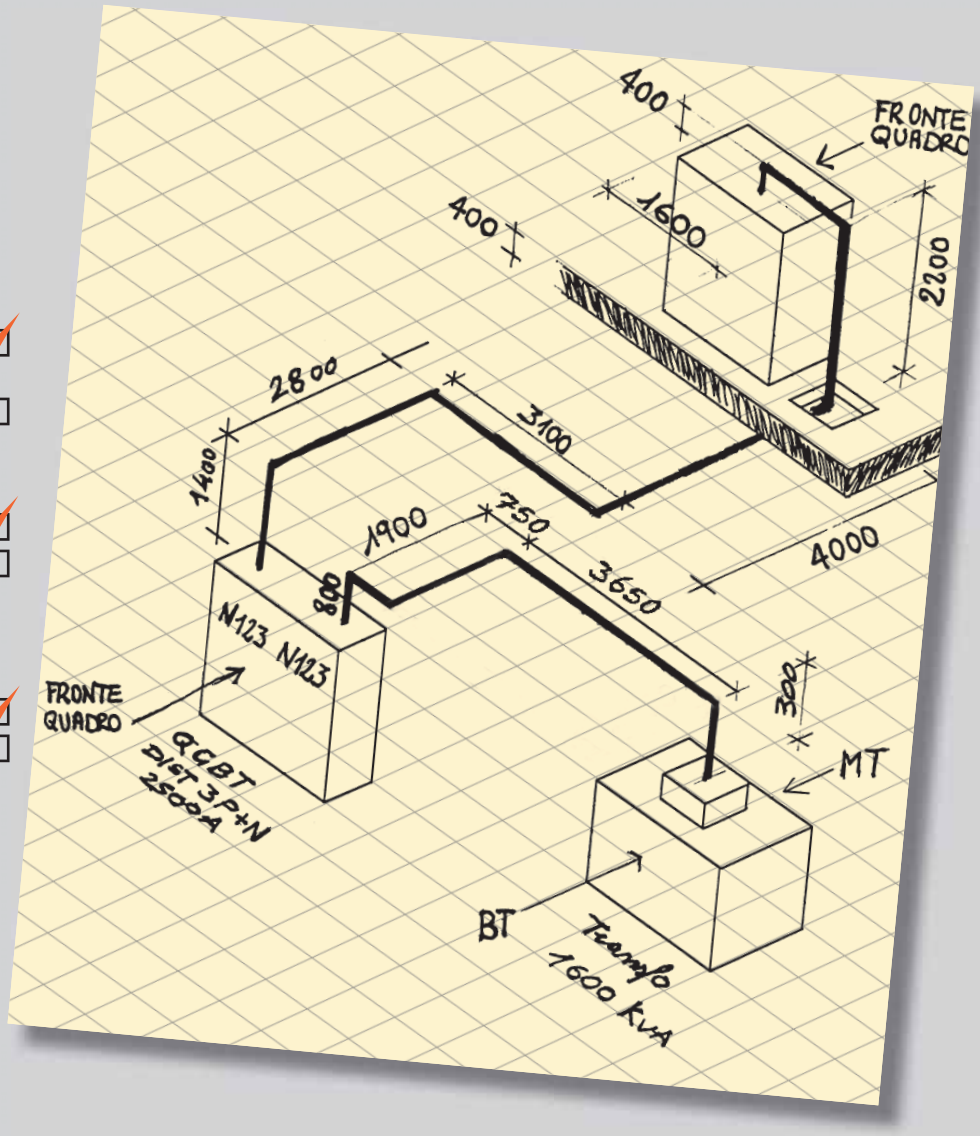
5. **Degree of protection**:
   IP55 (standard) ☑

6. **Painting**:
   RAL7035 (standard) ☑
   Different RAL
   colour on request ..... ☐

7. **Neutral section**:
   100% SCP (standard) ☑
   200% SCP2N ☐

8. **Nominal ambient temperature**:
   40°C (standard) ☑
   Other on request..... ☐

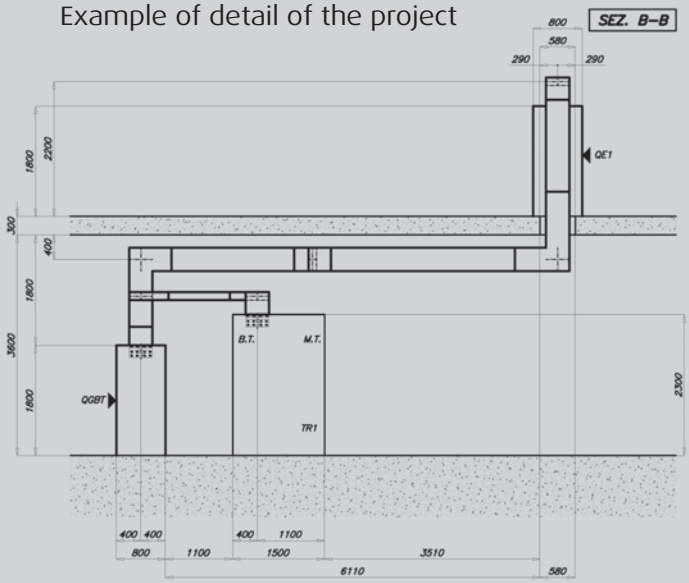
9. **Attach Busbar layout***
   Drawing ☑
   Dwg file ☐

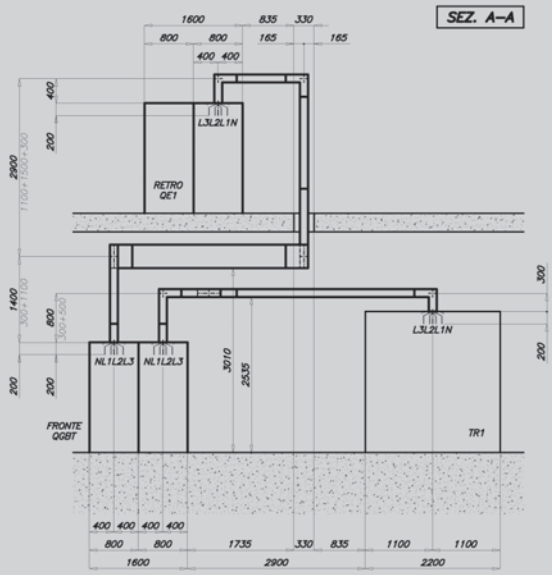


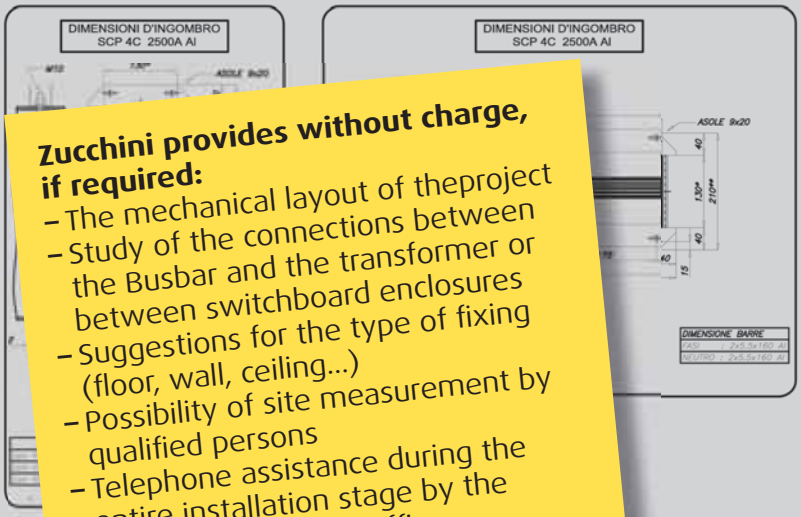
CHECKLIST TO BE DONE DURING THE PROJECT

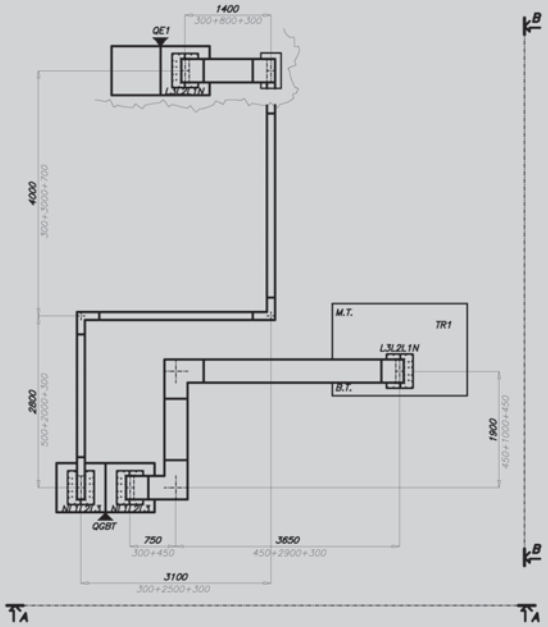
1. Verify the measurements of the drawings, the correct position of the equipment (MV/LV transformer and LV switchboard enclosures
2. Check the availability of drawings required (transformer, switchboard board, etc.)
3. Check for the existence of unforeseen obstacles in the installation which could impede 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.

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

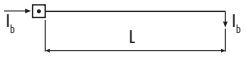
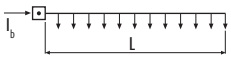
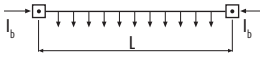
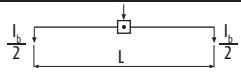
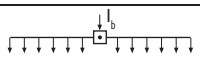
If the length of the line is particularly long (>100m) it is necessary to check the voltage drop (hereinafter specified as v.d.). If the installation is a three phase system and the power factor is not lower than cosφ = 0.7 the v.d. may be calculated with the coefficients of the voltage drop specified 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]
$\Delta v\%$	= 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**
$P = 3 \cdot R_t \cdot I_b^2 \cdot 10^{-3} [W/m]$	$P = 2 \cdot R_t \cdot I_b^2 \cdot 10^{-3} [W/m]$