

Resin Busbar Trunking RCP IP 68 Aluminum 630 A

Cat.Nos :

see relative catalog for detailed reference tables.



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1. USE

RCP is a busbar range is suitable for high-power distribution and, thanks to its epoxy resin casing, guarantees an IP 68 protection degree. RCP distributes high-power electricity efficiently and safely. The epoxy resin insulates the conductors and provides impact resistance certified up to IK 10 and IP 68 protection rating.

The conductors separated and agglomerated in the resin, ensure double electrical insulation. The resin provides good heat dissipation, improving energy efficiency, reducing losses, and minimizing voltage drop. Additionally, the resin ensures structural robustness, allowing the system to withstand high short-circuit currents.

This product is suitable indoor and outdoor installation. It is recommended for installations in environments with critical conditions, such as saline atmospheres, high humidity, and corrosive environments (outdoor, industrial plants, petrochemical plants, chemical plants and in areas with risk of flooding).

2. RANGE

RCP range is designed to trunk several bars into a single structure. Three combinations of conductors are available: 3 conductors, 4 conductors, and 5 conductors.

Single bar	Double bar	N° conductors
60280150R-3W	60390154R-3W	3 Conductors
60280150R	60390154R	4 Conductors
60240150R	60360154R	5 Conductors

3. TECHNICAL CHARACTERISTICS

3.1 Mechanical characteristics

Protection against solid bodies/liquids: IP 68

RCP range has been designed and manufactured with a strong casing. The degree protection against impacts is IK 10.

3.2 Material characteristics

All versions are available in grey (RAL N.A). They are fully encapsulated with epoxy resin.

The conductors are insulated in polyester film.

3.3 Climate characteristics

Correction factors for medium ambient temperatures other than 40°C (kt)

Ambient temperature	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C
Kt factor	1,15	1,12	1,08	1,05	1,025	1	0,975	0,95

Ambient temperature $\geq 40^{\circ}\text{C}$: Use the coefficient to limit the current and prevent the product from overheating to levels dangerous for the insulators.

Ambient temperature $< 40^{\circ}\text{C}$: The overload does not comply with the «delta T» regulatory limits, but it can be sustained indefinitely without compromising the product's functionality.

Operating ambient temperature	-40°C/+50°C
Storage ambient temperature	See installation and user manual
UV resistance	Yes
Type of installation	Indoor and outdoor

3. TECHNICAL CHARACTERISTICS (continued)

■ **3.4 Corrosive class**

Chemicals	Resistance	Chemicals	Resistance
Boric acid	(+)	Glycerol	(+)
Hydrochloric acid 10%	(-)	Greases and lubricating oils	(+)
Citric acid	(+)	Greases and oils	(+)
Lactic acid	(+)	Vegetable oils	(+)
Ethly alcohol	(0)	Aliphatic hydrocarbons	(+)
Beer	(+)	Aromatic hydrocarbons	(-)
Acetone	(-)	Carbon tetrachloride	(-)
Calcium chloride	(+)	Ammonia	(+)
Combustible liquid	(+)	Milk	(+)
Water	(+)	Sodium Hydroxide 10%	(+)
Esters	(+) / (0)	Soap	(+)
Ethers	(-)	Sugar	(+)
Formalin 30% - 40%	(+)	Urine	(+)

(+) Cast Resin is resistant to the chemical agent

(0) Cast Resin is partially resistant to the chemical agent

(-) Cast Resin is not resistant to the chemical agent

Specific test of prolonged immersion in different chemical agents at ambient temperature

Chemical agent	After 15 days	After 30 days
10% Hydrochloric Acid Solution	(-)	(-)
10% NaOH Solution	(+)	(+) / (0)
Gasoline	(+)	(+)
Fuel (Diesel)	(+)	(+)
Antifreeze	(+) / (0)	(+) / (0)
DBE (Di Basic Esther)	(0)	(0) / (-)

(+) Cast Resin is resistant to the chemical agent

(0) Cast Resin is partially resistant to the chemical agent

(-) Cast Resin is not resistant to the chemical agent

3. TECHNICAL CHARACTERISTICS (continued)

■ 3.5 Electrical characteristics

Number of conductors		3	4	5
Configuration		3C	4C (3L+N)	5C (3L+N+Pe)
Rated current	In [A]	630		
Overall dimension of the busbars	L x H [mm]	75 x 115	95 x 115	115 x 115
Overall dimension of the junction	L x H [mm]	140 x 180	160 x 180	180 x 180
Rated operational voltage	Ue [V]	1000	1000	1000
Rated insulation voltage	Ui [V]	1000	1000	1000
Frequency	f [Hz]	50	50	50
Rated short-time current (1 s)	ICW [kA]rms	20	20	20
Peak current	Ipk [kA]	40	40	40
Allowable specific energy for three-phase fault	I ² t [MA ² s]	400	400	400
Rated short-time current of the neutral bar (1 s)	ICW [kA]rms	-	20	20
Peak current of the neutral bar	Ipk [kA]	-	37	37
Rated short-time current of the protective circuit (1 s)	ICW [kA]rms	-	-	12
Peak current of the protective circuit	Ipk [kA]	-	-	24
Average phase resistance at 20°C	R20 [mΩ/m]	0,082	0,082	0,082
Average phase reactance (50Hz)	X [mΩ/m]	0,055	0,055	0,055
Average phase impedance	Z [mΩ/m]	0,098	0,098	0,098
Average phase resistance at thermal conditions	R [mΩ/m]	0,095	0,095	0,095
Average phase impedance at thermal conditions	Z [mΩ/m]	0,110	0,110	0,110
Average Neutral resistance	R20 [mΩ/m]	-	0,082	0,082
Average functional Earth resistance (FE)	R20 [mΩ/m]	-	-	0,082
Average functional Earth reactance (FE)	X [mΩ/m]	-	-	0,055
Average Resistance of the protective bar	RPE [mΩ/m]	-	-	0,082
Average reactance of the protective bar	XPE [mΩ/m]	-	-	0,055
Average resistance of the fault loop	Ro [mΩ/m]	-	-	0,163
Average reactance of the fault loop	Xo [mΩ/m]	-	-	0,11
Average impedance of the fault loop	Zo [mΩ/m]	-	-	0,197
Zero-sequence short-circuit average resistance phase - N	Ro [mΩ/m]	-	0,109	0,109
Zero-sequence short-circuit average reactance phase - N	Xo [mΩ/m]	-	0,073	0,073
Zero-sequence short-circuit average impedance phase - N	Zo [mΩ/m]	-	0,131	0,131
Zero-sequence short-circuit average resistance phase PE	Ro [mΩ/m]	-	-	0,109
Zero-sequence short-circuit average reactance phase PE	Xo [mΩ/m]	-	-	0,073
Zero-sequence short-circuit average impedance phase PE	Zo [mΩ/m]	-	-	0,131
Voltage drop with load at the end of the line (b=1) ΔV [V(m*A)]10 ⁻⁶	cosφ = 0,70	183,2	183,2	183,2
	cosφ = 0,75	186,4	186,4	186,4
	cosφ = 0,80	188,7	188,7	188,7
	cosφ = 0,85	190,0	190,0	190,0
	cosφ = 0,90	189,5	189,5	189,5
	cosφ = 0,95	186,0	186,0	186,0
	cosφ = 1,00	164,5	164,5	164,5
Weight	p [kg/m]	23,1	29,2	34,2
Degree of protection	IP	68	68	68
Insulation material thermal resistance class	P [W/m]	B *	B *	B *
Losses for the Joule effect at nominal current		113	113	113
Ambient temperature min/MAX	[°C]	-5/35**	-5/35**	-5/35**

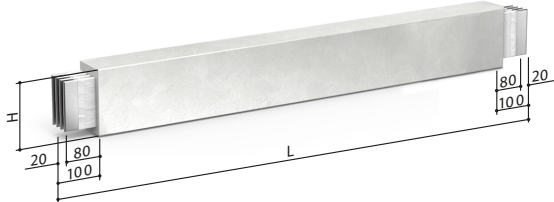
* on request: conductor bars sleeved with Class F, DMD insulation sheet.

4. COMPOSITION

All the elements composing the RCP range are encapsulated with epoxy resin.

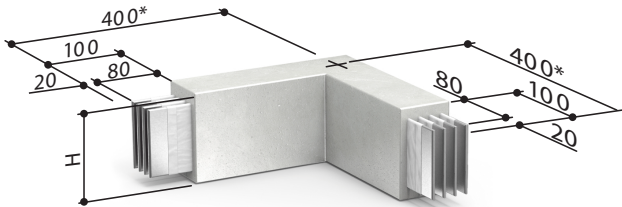
4.1 Straight elements

Straight elements are designed for transport.



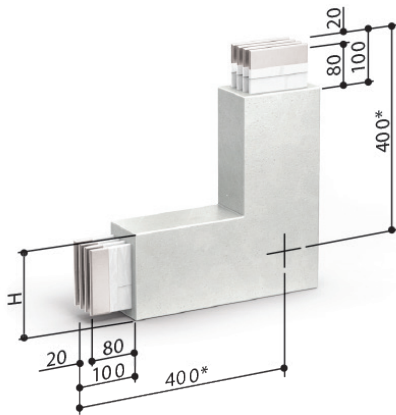
4.2 Elbows

Horizontal elbow

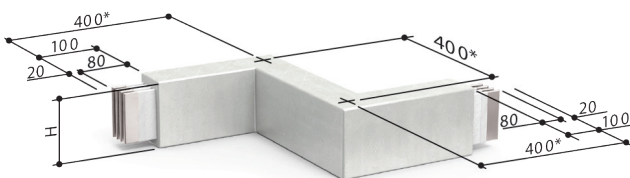


* standard dimensions, other measurement possible on request.

Vertical elbow

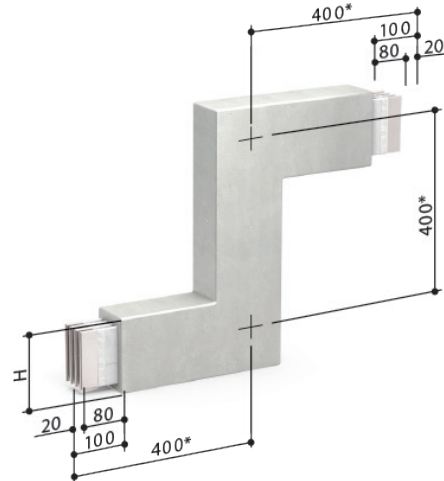


Double horizontal elbow



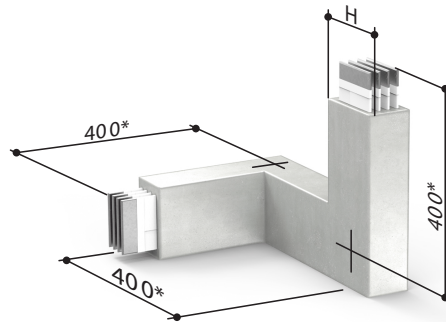
* standard dimensions, other measurement possible on request.

Double vertical elbow



* standard dimensions, other measurement possible on request.

Double horizontal+vertical elbow



5. ACCESSORIES

5.1 Brackets

The brackets enable sturdy installation of the busbar to the system's support structures.

In order to fix the line to the structure of the building, directly or with wall/ceiling/beam supports, it is necessary to use the bracket supports or vertical suspension supports.

Suspension brackets

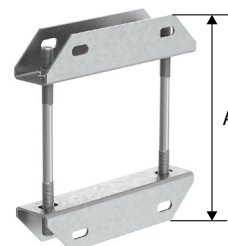
There are brackets for vertical and for horizontal suspension, these are PG (STD type) which is typically suitable for a C1 environment. On request, bracket solutions are available for more aggressive environments (stainless steel).

Suspension brackets can be edgewise or flat.

The same brackets can be installed in two installation type : type A and type B (see training manual). Type A installation is used for changes of direction (elbow) and type B for straight elements.

- Edgewise suspension brackets

Standard distance between two brackets: 1500 mm



5. ACCESSORIES (continued)

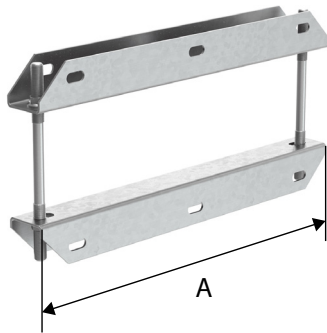
■ **5.1 Brackets (continued)**

Suspension brackets (continued)

Standard version		
In (A)	Brackets Cat.No	A (mm)
630	65202021R	195

Stainless steel version		
In (A)	Brackets Cat.No	A (mm)
630	65302021R	195

- Flat suspension brackets
Standard distance between 2 brackets: 1500 mm

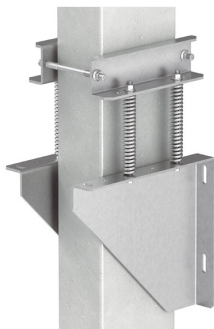


Standard version		
In (A)	Brackets Cat.No	A (mm)
630	65202021R	190

Stainless steel version		
In (A)	Brackets Cat.No	A (mm)
630	65302032R	190

Vertical elements brackets

In case of rising mains, pre-loaded spring brackets both hold the bar in place, and support the weight of the system.

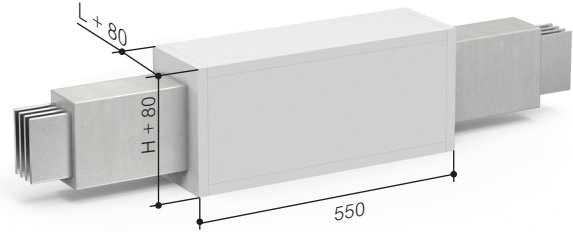


In (A)	Brackets Cat.No	Quantity of springs	Weight holding capacity
630	65203711R	4	300

■ **5.2 Fire barrier element**

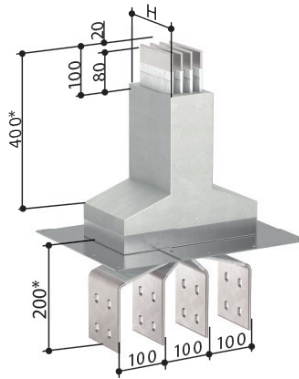
The fire barrier is used when it is necessary to pass through a wall or floor while maintaining the REI fire resistance rating. In the RCP, it is placed in the element from any side, as there is no derivation.

The only requirement is to keep a distance of more than 160 mm from the junction to avoid interference during the resin application phase on site.



In (A)	Cat.No
630	65EFB01R

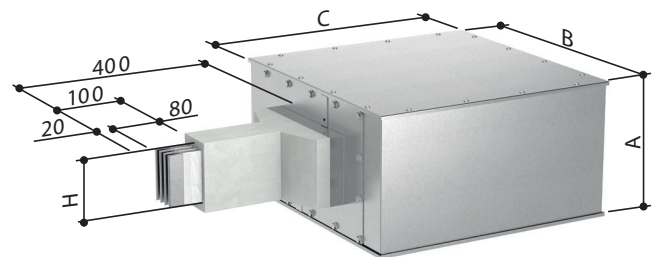
■ **5.3 Connection interface**



* standard dimensions, other measurement possible on request.

■ **5.4 Feed unit**

Feed units are for power supply via cables, it differs from the connection interface, which is designed to be inserted into the power distribution panel.



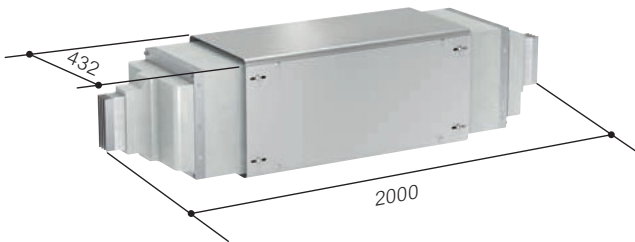
Dimensions	
In (A)	630A - 1250A
A	320
B	600
C	610

5. ACCESSORIES (continued)

5.5 Expansion elements

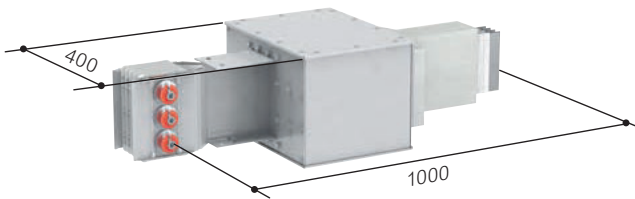
The expansion elements can be used to facilitate the thermal expansion of conductors due to the passage of current, the expansion of busbars and as a building movement element decoupling joint for the lines.

These elements must be installed if the line exceeds a certain length (see catalogue) or if there is a transition between different buildings or structures that have or may have different expansion rates.



5.6 Adapter element (IP 68 - IP 55)

The adapter element is 1 meter long. It enables the connexion between XCP and RCP elements.



5.7 Tap-off boxes

Tap-off boxes are not suited for RCP range because they will downgrade its protection degree. If necessary, it is better to use a XCP range element and use an adapter (cf. «5.6 Adapter element (IP 68 - IP 55)», page 6) to establish connexion between RCP and XCP elements.

5.8 Moulds

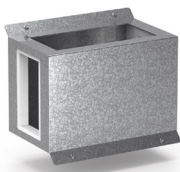
Moulds enable the sealing of the connexions between the busbars and maintain the protection degree to IP 68.

The moulds are available in 3 types :

- suited for 3 conductor busbar
- suited for 4 conductor busbar
- suited for 5 conductor busbar

By changing the number in the reference, you can order the right type for your installation. (cf. tables)

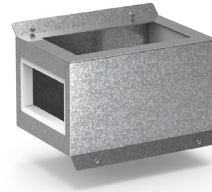
Horizontal mould (for edgewise installation)



Horizontal (edgewise installation)

In (A)	Cat.No
630	6MLD4E01R
3 : 3 conductors	4 : 4 conductors
	5 : 5 conductors

Horizontal mould (for flat installation)



Horizontal (flat installation)

In (A)	Cat.No
630	6MLD4F01R
3 : 3 conductors	4 : 4 conductors
	5 : 5 conductors

Vertical mould



Vertical (flat installation)

In (A)	Cat.No
630	6MLD4R01R
3 : 3 conductors	4 : 4 conductors
	5 : 5 conductors

6. STANDARDS AND REGULATIONS

RCP IP 68 resin busbar trunking is complying to IEC 61439-6 and IEC 60331-1 standards.

The range is also complying to :

RoHS: Compliance with the 2011/65/EU Directive (RoHS), as modified by the 2015/863/EU Delegated Directive, on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

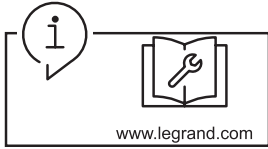
REACH: The substances identified as SVHC (Substances of Very High Concern) according to the REACH Regulation (1907/2006), if present in the products at a concentration above 0.1% weight by weight, are declared inside the European SCIP database. At the date of publication of this document none of the substance listed in the annex XIV is found in this product.

WEEE: WEEE Directive (2012/19/EU): the sale of this product includes a contribution to the appointed environmental bodies of each European country in charge of handling, at the end of their life, the products falling within the scope of the EU Directive on Electrical and Electronic Equipment Waste.

Packaging : Design and manufacture of packaging compliant with European Directive 94/62/CE.

7. OTHER INFORMATION

XLPro Calcul: Calculation notes creation software, addressed to installers, design office and maintenance operators. Definition of the electrical characteristics of a low voltage installation in compliance with the applicable standards



Installation and user guide : mounting information, equipments, accessories, spare parts, instructions available on e-catalog.

Instruction sheet: detailed mounting procedures, available on e-catalog.

PEP sheet: available on e-catalog.

For further technical information, please contact Legrand technical support.

Unless otherwise indicated, data reported in this document refers exclusively to test conditions according to product standards.

For different conditions of use of the product, inside electrical equipment or in any different installation context, refer to the regulatory requirements of the equipment, local regulations and design specifications of the system.