







IP68RCP RESIN busbar trunking

RCP resin busbar is the latest addition to the Zucchini range. With an ingress protection rating of IP68 and ranging from 630 A to 6300 A, RCP is ideal for the distribution of high power energy in external environments.

RCP is manufactured with either aluminium or copper conductors which are completely encapsulated in an epoxy resin, that provides mechanical strength and electrical insulation. RCP resin busbar has good performance in fire conditions and exceeds the requirements stipulated in IEC 60331-1: 2009 for continuity of service in the event of fire.

IP68

1ST DIGIT IP

Protection against penetration of solid bodies



Complete protection against dust

2ND DIGIT IP

Protection against penetration of liquids



8

Protection against effects of immersion under pressure (At a maximum of 1m according to BS EN 60529)

BUSBAR TRUNKING

- Conductors insulated in polyester film
- Fully encapsulated in epoxy resin
- Rated current between 630 6300 A
- Insulation voltage up to 1000 V
- Compact dimensions
- Maintenance free

CONDUCTOR MATERIAL

- Copper busbars with a purity greater than 99.9%
- Aluminium alloy busbars have their entire surface treated with protective galvanic processes
- Degree of protection: IP68 according to BS EN 60529





SUITABLE FOR INDOOR AND OUTDOOR INSTALLATIONS

RCP trunking is suitable for use in extreme conditions, including humidity, corrosion and saline mist environments; it offers good resistance to chemicals (*), and can be used in areas with temporary immersion risks.



Typical applications

In a range of EXTREME ENVIRONMENTS

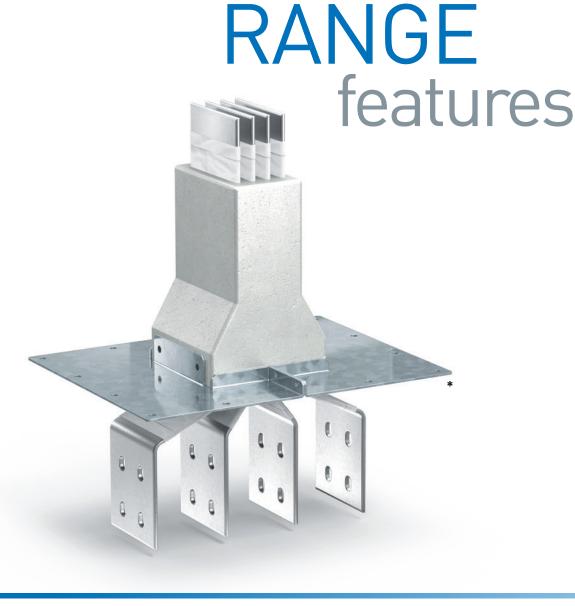
- industrial plants
- petrochemical plants
- chemical plants (*)
- in areas with risk of flooding

Or less extreme environments but with DEMANDING REQUIREMENTS

- data centres
- hospitals
- military buildings
- offices

(*) refer to the table of chemical resistance on page 12.





Main features of RCP busbar trunking

- Ingress protection: IP68
- Mechanical impact: IK10
- Temporary immersion conditions up to 1 metre
- Excellent resistance to chemicals (suitable for use in petrochemical and chemical industries)
- Certified to IEC EN 61439-6
- Continuity of service in the event of fire exceeds the requirements of IEC 60331-1: 2009 (min 830°C - 120 min. operating continuity) Aluminium busbar achieves 150 min. Copper busbar achieves 240 min.
- Resistant against fungus, animals, insects and rodents
- UV resistant
- No chimney effect
- Tropical and saline climate resistant

CERTIFICATIONS AND TESTS

RCP IP68 busbar trunking has been tested and approved to IEC EN 61439-6 for low voltage switchgear and control gear assemblies.

Part 6 refers specifically to busbar trunking systems (busways)



CONSTRUCTION features



COMPLETE SOLUTION

RCP IP68 is a complete busbar system which includes all the necessary components to allow for any directional changes to the busbar run that your project requires.

COMPATIBILITY

The RCP IP68 system is completely compatible with the SCP IP55 range and is easily connected using a cover junction (see p. 4).

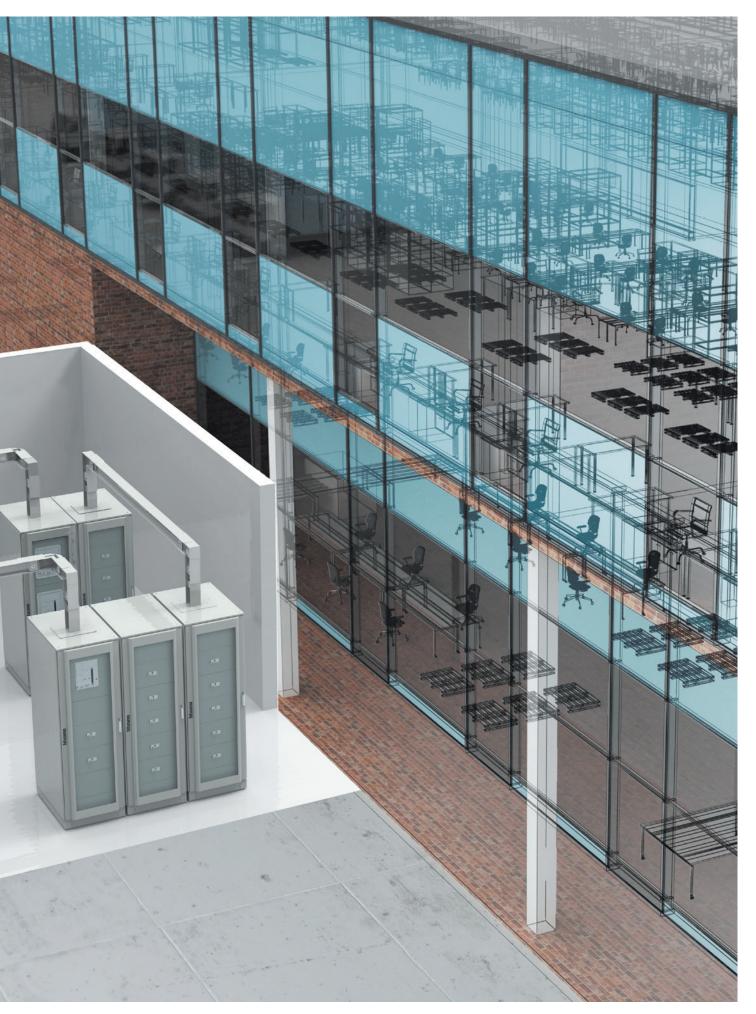
FAST AND SIMPLE CONNECTIONS

The junction between the various system components is made by a monobloc which is inserted between the phases of the components to be connected. To guarantee electrical insulation, mechanical rigidity and an IP68 degree of protection, the connection is immersed in epoxy resin which hardens and provides robustness.





A brand of 📮 legrand





RANGE COMPOSITION





STRAIGHT LENGTH



CONNECTION INTERFACE*



DOUBLE HORIZONTAL ELBOW



VERTICAL ELBOW



COVER JUNCTION (IP68-IP55)



DOUBLE ELBOW HORIZONTAL + VERTICAL



HORIZONTAL ELBOW



DOUBLE VERTICAL ELBOW



CONNECTION INTERFACE + HORIZONTAL ELBOW

Other components available on request

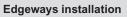
* NOTE: To maintain IP55 for outdoor use at connection to other manufacturers' equipment, additional weatherproofing may be required

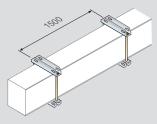
FIXING ACCESSORIES

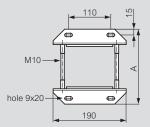
■ HORIZONTAL SUSPENSION BRACKET

The brackets enable sturdy fixing of the busbar to the support structure The recommended installation distance between brackets is 1.5 metres





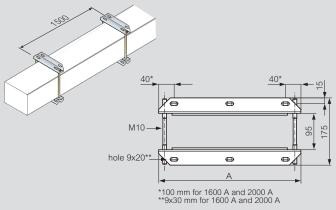




In	A (ı	nm)
(A)	Al	Cu
630	195	-
800	230	195
1000	230	230
1250	240	230
1600	280	270
2000	325	280
2500	380	320
3200	460	440
4000	550	460
5000	-	540







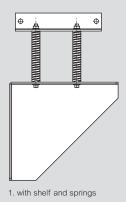
A (mm)					
Al	Cu				
190	-				
315	190				
315	315				
315	315				
315	315				
315	315				
370	315				
430	430				
530	430				
-	530				
	Al 190 315 315 315 315 370 430				

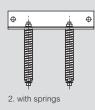
■ VERTICAL SUSPENSION BRACKET

Holds bar in place and supports the weight of the system



3 types of vertical brackets





Ф Ф

3. bracket only



TECHNICAL DATA

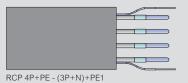
RCP IP68 - 4 conductor version (aluminium)

				SINGL	E BAR			ı	DOUBLE BA	R	2 x 2500 DOUBLE BARS
Rated current of the BTS (ASSEMBLY as stated in 61439-1)	InA [A]	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Overall dimension of the busbars	LxH[mm]	95x115	95x150	95x150	95x160	95x200	95x245	95x300	95x380	95x470	2x95x300
Overall dimension of the junction	L×H[mm]	160x180	160x180	160x180	160x190	160x230	160x275	160x370	160x450	160x500	2x160x370
Rated operational voltage	U _e [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated insulation voltage	Ui [V]	1000	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	50/60
Rated short-time current (1 s)	Icw [kA]rms	30	36	36	50	50	60	80	100	100	100
Peak current	Ipk [kA]	63	76	76	105	105	132	176	220	220	220
Rated short-time current of the neutral bar (1 s)	Icw [kA]rms	18	22	22	30	30	36	48	60	60	60
Peak current of the neutral bar	Ipk [kA]	36	45	45	63	63	76	101	132	132	132
Rated short-time current of the protective circuit (1 s)	Icw [kA]rms	18	22	22	30	30	36	48	60	60	60
Peak current of the protective circuit	Ipk [kA]	36	45	45	63	63	76	101	132	132	132
Average phase resistance at 20°C	R ₂₀ [mΩ/m]	0.082	0.061	0.061	0.049	0.035	0.027	0.024	0.017	0.013	0.012
Average phase reactance	X [mΩ/m]	0.055	0.049	0.049	0.031	0.037	0.030	0.023	0.017	0.010	0.007
Average phase impedance	Z [mΩ/m]	0.098	0.078	0.078	0.058	0.051	0.040	0.033	0.024	0.017	0.014
Average phase resistance at thermal conditions	R [mΩ/m]	0.093	0.070	0.076	0.062	0.043	0.034	0.029	0.022	0.018	0.017
Average phase impedance at thermal conditions	Z [mΩ/m]	0.108	0.086	0.091	0.069	0.057	0.046	0.037	0.028	0.021	0.018
Average neutral resistance	R ₂₀ [mΩ/m]	0.082	0.061	0.061	0.049	0.035	0.027	0.024	0.017	0.013	0.012
Average resistance of the protective bar (PE 1)	Rpe [mΩ/m]	0.124	0.105	0.105	0.105	0.105	0.105	0.052	0.052	0.052	0.026
Average reactance of the protective bar	XPE [mΩ/m]	0.080	0.078	0.078	0.048	0.039	0.028	0.020	0.015	0.016	0.013
Average resistance of the fault loop (PE 1)	R ₀ [mΩ/m]	0.205	0.165	0.165	0.153	0.139	0.132	0.077	0.070	0.066	0.038
Average reactance of the fault loop	X ₀ [mΩ/m]	0.14	0.13	0.13	0.08	0.08	0.06	0.04	0.03	0.03	0.02
Average impedance of the fault loop (PE 1)	Z ₀ [mΩ/m]	0.246	0.209	0.209	0.173	0.159	0.144	0.088	0.077	0.071	0.043
Zero-sequence short-circuit average 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	0.060
Zero-sequence short-circuit average 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	0.056
Zero-sequence short-circuit average 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	0.082
Zero-sequence short-circuit average 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	0.149
Zero-sequence short-circuit average 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	0.142
Zero-sequence short-circuit average impedance phase - PE	Z ₀ [mΩ/m]	0.638	0.567	0.567	0.416	0.366	0.343	0.267	0.246	0.220	0.206
	$\cos \varphi = 0.70$	183.2	147.5	154.6	114.9	98.8	79.4	64.7	48.1	34.5	29.0
	$\cos \varphi = 0.75$	186.4	149.2	156.8	117.5	99.2	79.6	65.2	48.4	35.2	29.8
Voltage drop with load at	$\cos \varphi = 0.80$	188.7	150.2	158.3	119.7	99.1	79.5	65.4	48.6	35.7	30.5
the end of the line (b=1) ΔV [V/m/A]10-6	$\cos \varphi = 0.85$	190.0	150.2	158.8	121.3	98.2	78.7	65.0	48.3	36.0	31.1
	$\cos\varphi = 0.90$	189.5	148.7	157.8	121.8	96.1	77.0	64.0	47.6	36.1	31.4
	$\cos\varphi = 0.95$	186.0	144.4	154.0	120.7	92.0	73.6	61.7	45.9	35.5	31.4
Mojaht (PCP Standard)	$\cos \varphi = 1.00$	164.5	124.1 35.4	134.2	109.4	75.8	60.4	51.8	38.6	31.7	29.0
Weight (RCP Standard) Weight (PE 1)	p [kg/m] p [kg/m]	29,2 29,9	36.3	35.4 36.3	37.5 38.4	46.9 47.8	57.6 58.5	72.7	91.2	110.3 112.1	2x72.7 2x74.5
Fire load	[kWh/m]	4,5	5.5	5.5	6.0	8.5	10.5	16.0	19.0	21.0	22.0
Degree of protection	IP	68	68	68	68	68	68	68	68	68	68
Insulation material thermal resistance class		B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*	B/F*
Losses for the Joule effect at nominal current	P [W/m]	111	135	229	291	331	412	552	674	865	1239
Ambient temperature min/MAX	[°C]	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50

^{*} Class F available on request

General correction factor for amb. temperatures different from 40°C (kt)									
Ambient temperature 15°C 20°C 25°C 30°C 35°C 40°C 45°C 50°C								50°C	
kt factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	





RCP 4P - (3P+N) without earth (standard version)

The product is available in three to five conductor variants and in both copper or aluminium, and can also be supplied with additional conductors for extra earthing requirements: - 3P / 3P+(PE1) - 5P / 5P+(PE1) - 2N / 2N+(PE1)



RCP IP68 - 4 conductor version (copper)

					SINGL	E BAR			ı	OOUBLE BA	R	2 x 2500 DOUBLE BARS
Rated current	In [[A]	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Overall dimension of the busbars	L×H[[mm]	95x115	95x150	95x150	95x190	95x200	95x240	95x360	95x380	95x460	2x95x360
Overall dimension of the junction	L×H[[mm]	160x180	160x180	160x180	160x220	160x230	160x270	160x430	160x450	160x490	2x160x430
Rated operational voltage	Ue [[V]	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated insulation voltage	Ui [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Frequency	f [H	lz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/61
Rated short-time current (1 s)	lcw [k/	A] _{rms}	45	45	45	65	65	80	100	100	100	100
Peak current	lpk [ŀ	κA]	95	95	95	143	143	176	220	220	220	220
Rated short-time current of the neutral bar (1 s)	lcw [k/	A]rms	27	27	27	39	39	48	60	60	60	60
Peak current of the neutral bar	lpk [ł	κA]	57	57	57	82	82	101	132	132	132	132
Rated short-time current of the protective circuit (1 s)	lcw [k/	A] _{rms}	27	27	27	39	39	48	60	60	60	60
Peak current of the protective circuit	lpk [l	κA]	57	57	57	82	82	101	132	132	132	132
Average phase resistance at 20°C	R20 [m	Ω/m]	0.040	0.031	0.031	0.023	0.018	0.014	0.011	0.009	0.007	0.006
Average phase reactance	X [ms	2/m]	0.055	0.049	0.049	0.045	0.037	0.030	0.023	0.017	0.010	0.007
Average phase impedance	Z [ms	2/m]	0.068	0.058	0.058	0.050	0.041	0.033	0.026	0.019	0.012	0.009
Average phase resistance at thermal conditions	R [ms	2/m]	0.045	0.037	0.039	0.028	0.023	0.018	0.014	0.012	0.009	0.007
Average phase impedance at thermal conditions	Z [ms	2/m]	0.071	0.061	0.063	0.053	0.044	0.035	0.027	0.021	0.013	0.010
Average neutral resistance	R20 [m	Ω/m]	0.040	0.031	0.031	0.023	0.018	0.014	0.011	0.009	0.007	0.006
Average resistance of the protective bar (PE 1)	Rpe [m	Ω/m]	0.124	0.105	0.105	0.105	0.105	0.105	0.052	0.052	0.052	0.026
Average reactance of he protective bar	XPE [m	Ω/m]	0.054	0.054	0.054	0.044	0.044	0.032	0.022	0.017	0.016	0.014
Average resistance of he fault loop (PE 1)	R₀ [ms	Ω/m]	0.163	0.136	0.136	0.127	0.123	0.119	0.064	0.062	0.059	0.032
Average reactance of he fault loop	X _o [ms	Ω/m]	0.11	0.10	0.10	0.09	0.08	0.06	0.05	0.03	0.03	0.02
Average impedance of he fault loop (PE 1)	Z _o [ms	Ω/m]	0.196	0.170	0.170	0.155	0.148	0.134	0.078	0.070	0.065	0.038
Zero-sequence short-circuit average resistance phase - N	R₀ [ms	Ω/m]	0.170	0.155	0.155	0.115	0.120	0.098	0.083	0.071	0.062	0.054
Zero-sequence short-circuit average reactance phase - N	X ₀ [ms	Ω/m]	0.159	0.151	0.151	0.114	0.098	0.065	0.056	0.055	0.042	0.038
Zero-sequence short-circuit average impedance phase - N	Z _o [ms	Ω/m]	0.233	0.216	0.216	0.162	0.155	0.118	0.100	0.090	0.075	0.066
Zero-sequence short-circuit average resistance phase - PE	R₀ [ms	Ω/m]	0.507	0.429	0.429	0.331	0.283	0.221	0.177	0.178	0.144	0.132
Zero-sequence short-circuit average reactance phase - PE	X ₀ [ms	Ω/m]	0.201	0.177	0.177	0.143	0.150	0.124	0.111	0.094	0.086	0.075
Zero-sequence short-circuit average impedance phase - PE	Z _o [ms	Ω/m]	0.545	0.464	0.464	0.361	0.320	0.253	0.209	0.201	0.168	0.152
	cosφ =	0,70	123.4	105.7	108.8	90.7	74.6	59.3	45.4	35.6	23.5	17.9
	cosφ =	0,75	122.4	104.5	107.8	89.1	73.3	58.2	44.5	35.1	23.3	17.9
Voltage drop with load	cosφ =	0,80	120.5	102.5	106.0	86.8	71.4	56.6	43.2	34.4	23.1	17.8
at the end of the line	cosφ =	0,85	117.4	99.5	103.3	83.6	68.8	54.4	41.5	33.3	22.6	17.6
V [V/m/A]10 ⁻⁶	cosφ =	0,90	112.7	95.0	99.0	79.0	65.0	51.2	39.1	31.6	21.8	17.1
	cosφ =	0,95	104.9	87.7	92.0	71.9	59.2	46.4	35.4	29.0	20.4	16.3
	cosφ =	1,00	79.1	64.4	68.9	50.1	41.2	31.8	24.2	20.9	15.8	13.1
Weight (RCP Standard)	p [kg		41.1	50.4	50.4	65.1	71.4	89.0	127.0	141.0	173.6	2x127
Veight (PE 1)	p [kg		41.9	51.3	51.3	66.0	72.3	89.9	128.8	142.8	175.4	2x128.8
Fire load	[kWh		4.5	5.5	5.5	8.0	8.2	10.5	16.0	19.0	21.0	24.0
Degree of protection	IP)	68	68	68	68	68	68	68	68	68	68
Insulation material thermal resistance class			B/F*	B/F*	B/F*							
Losses for the Joule effect at nominal current	P [W	/m]	86	110	184	219	281	339	422	570	675	890
Ambient temperature min/MAX	[°C	[2]	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50	-40/+50

^{*} Class F available on request

General correction factor for amb. temperatures different from 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





RCP 4P - (3P+N) without earth (standard version)

RCP 4P+PE - (3P+N)+PE1

The product is available in three to five conductor variants and in both copper or aluminium, and can also be supplied with additional conductors for extra earthing requirements: - 3P / 3P+(PE1) - 5P / 5P+(PE1) - 2N / 2N+(PE1)



DIMENSIONAL DATA

STRAIGHT LENGTH



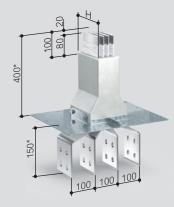
■ HORIZONTAL ELBOW



■ VERTICAL ELBOW



■ CONNECTION INTERFACE**

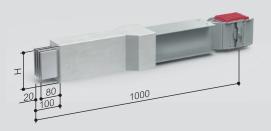


FIRE BARRIER



■ COVER JUNCTION IP68-IP55

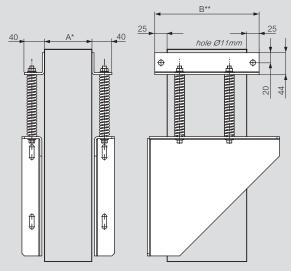
Note: cover junction guarantees an IP55 degree of protection



- * Nominal dimensions (indicated in mm)
 ** To maintain IP55 for outdoor use at connection to other manufacturers' equipment, additional weatherproofing may be required NOTE: Dimension H changes with the rating which is specified in the technical information, see p. 8-9

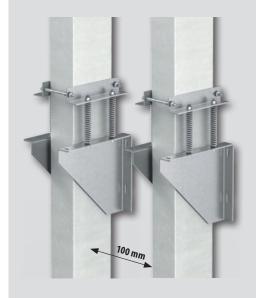
DIMENSIONAL DATA

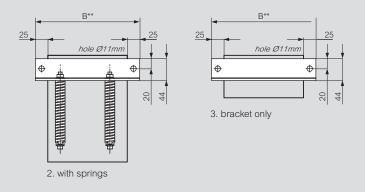
■ VERTICAL SUSPENSION BRACKET



1. with shelf and springs

 $\mathbf{A^*:}$ Depending on the quantity of conductors requested $\mathbf{B^{**:}}$ Depending on the busbar rating





MATERIAL	RATING (A)	QUANTITY OF SPRINGS	WEIGHT HOLDING CAPACITY (KG)	
	630	4	300	
	800	4	300	
	1000	4	300	
	1250	4	300	
AL	1600	6	300	
	2000	8	600	
	2500	8	600	
	3200	12	600	
	4000	12	600	
	800	4	300	
	1000	4	300	
	1250	4	300	
	1600	6	300	
CU	2000	6	300	
	2500	8	600	
	3200	8	600	
	4000	12	600	
	5000	12	600	

For 5000 A (Al) and 6300 A (Cu), please consider the following:

The picture above demonstrates how to formulate vertical runs of 5000 A (Al) and 6300 A (Cu) busbar A distance of 100 mm should be maintained between two busbar runs

- Necessary brackets RCP 5000 A (AI) = use 2 \times 2500 A (AI) brackets RCP 6300 A (Cu) = use 2 \times 3200 A (Cu) brackets



TABLE OF CHEMICAL RESISTANCE OF RCP RESIN

Chemical	Resistance
Boric Acid	(+)
10% Hydrochloric Acid	(-)
Citric Acid	(+)
Lactic Acid	(+)
Ethyl Alcohol	(0)
Beer	(+)
Acetone	(-)
Calcium Chloride	(+)
Combustible Liquid	(+)
Water	(+)
Esters	(+) / (0)
Ethers	(-)
Formalin 30%-40%	(+)
Glycerol	(+)
Greases and Lubricating Oils	(+)
Greases and Oils	(+)
Vegetable Oils	(+)
Aliphatic Hydrocarbons	(+)
Aromatic Hydrocarbons	(-)
Carbon Tetrachloride	(-)
Ammonia	(+)
Milk	(+)
10% Sodium Hydroxide	(+)
Soap	(+)
Sugar	(+)
Urine	(+)

■ SPECIFIC TEST OF PROLONGED IMMERSION IN DIFFERENT CHEMICAL AGENTS AT AMBIENT TEMPERATURE

Chemical agent	After 15 days	After 30 days
10% Solution Hydrochloric Acid	(-)	(-)
10% Solution NaOH	(+)	(+) / (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



The Zucchini range of prefabricated busbars is one of the most comprehensive on the market, ranging from 25 A lighting through to 6300 A high power systems. Zucchini busbar is widely used for power distribution in both industrial and commercial applications.

Its modular construction and wide variety of busbar accessories allow an infinite number of trunking combinations, providing a versatile and flexible technical solution to any layout.



LB PLUS - LOW POWER BUSBAR SYSTEM

LB PLUS is the new range of Zucchini busbars for electrical distribution within low power applications.

It offers simplicity, high performance and easy installation and can meet all lighting and power demands from 25 A to 63 A.



MEDIUM POWER BUSBAR SYSTEMS

Zucchini medium power busbars offer speed, simplicity and flexibility during planning and installation.

MS is ideal for commercial and industrial applications from 63 A to 160 A and MR offers the perfect solution for rising mains up to 1000 A.



SCP - HIGH POWER BUSBAR SYSTEM

SCP is the Zucchini busbar range used for the transport and distribution of high power.

Ranging from 630 A to 6300 A the dimensions of super compact and its 'sandwich' construction enhance resistance to short circuit stresses.



CAST RESIN TRANSFORMERS

Legrand also offers a wide range of high quality, EU regulation cast resin transformers from 160 kVA up to 16 mVA.

This comprehensive range is further enhanced by technical expertise and the ability to create bespoke solutions.



Quotations and Technical Support:

Legrand Electric Ltd. Great King Street North, Birmingham, B19 2LF

Tel: +44 (0) 370 608 9020

E-mail: powersales.uk@legrand.co.uk

Customer Services:

Legrand Electric Ltd.
No. 1 Industrial Estate
Medmonsley Road, Consett
County Durham, DH8 6SR
Tel: +44 (0) 345 605 4333

E-mail: powersales.uk@legrand.co.uk

Republic of Ireland:

Tel: 01 295 9673 Fax: 01 295 4671 E-mail: powersales.uk@legrand.co.uk





Head office (UK and Ireland):

Legrand Electric Limited Great King Street North, Birmingham, B19 2LF Tel: +44 (0) 370 608 9000 Fax: +44 (0) 370 608 9004 Website: www.legrand.co.uk

In accordance with its policy of continuous improvement, the Company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in this catalogue are for guidance and cannot be held binding on the Company. All contents and design presentation included in this publication are © Legrand Electric Limited. All rights reserved. 2020

