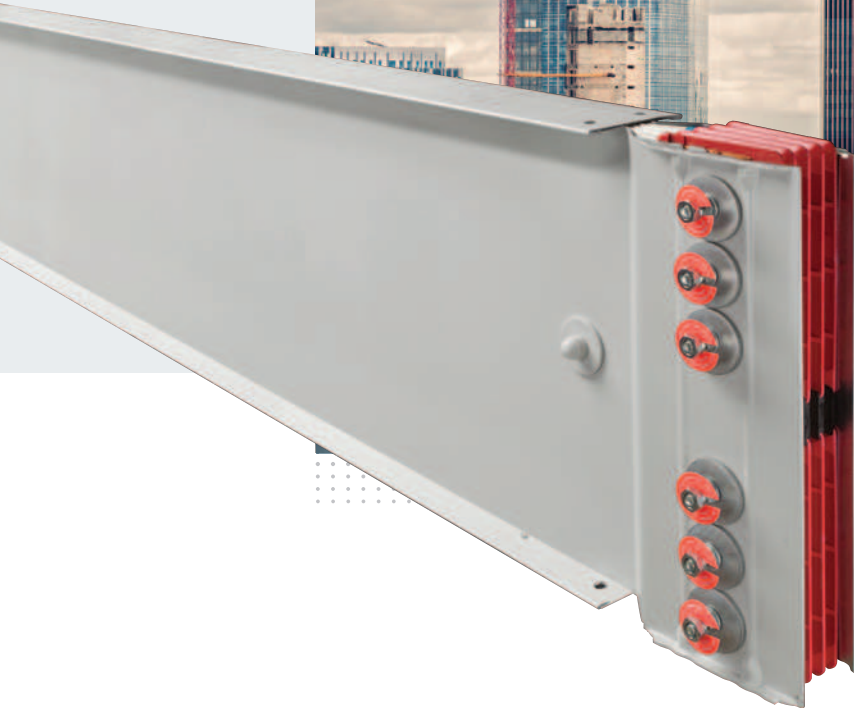


A brand of  **legrand**<sup>®</sup>

# ZUCCHINI BUSBAR

THE BACKBONE OF  
MODERN BUILDINGS



■ POWERED BY SPECIALISTS

**ZUCCHINI**

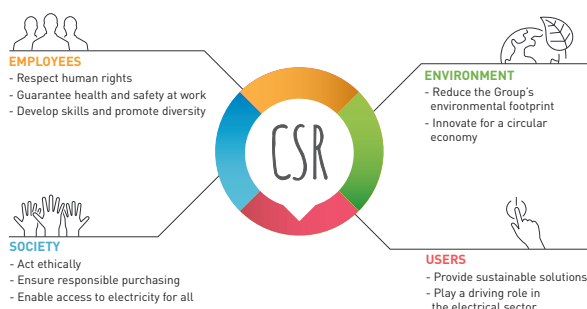
# Global strength built on local knowledge

Legrand is the global specialist in electrical and digital building infrastructures. Innovation is the driving force behind its development.

With an increasing investment in research and development (circa 5% of sales) and more than 4,000 active patents, the Legrand Group is focused on maintaining a high rate of new product launches that present innovative solutions to the market.

## CORPORATE SOCIAL RESPONSIBILITY

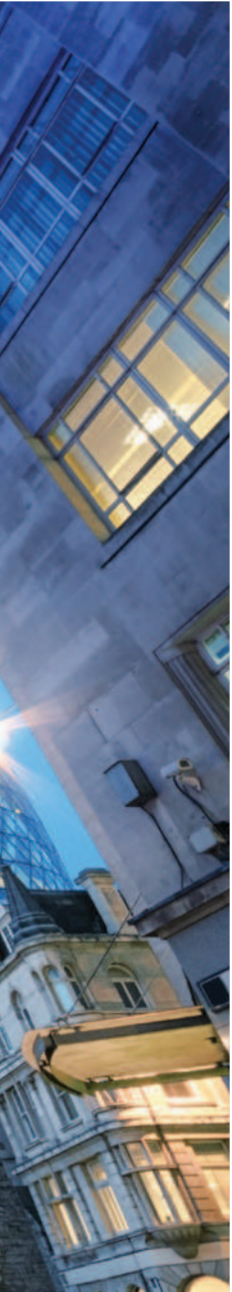
Legrand's CSR roadmap is a natural extension to the governance and sustainable development approach in which the company has been engaged for many years. The CSR roadmap firmly asserts Legrand's ongoing commitment to sustainable development.



## LEGRAND'S POWER DISTRIBUTION BUSINESS UNIT

From Legrand transformers, through high power distribution and rising main busbar to Electrak powertrack, desk modules and lighting control, Legrand's power distribution business unit provides market leading solutions to the increasing demands of today's buildings.





## ZUCCHINI

Overview	02
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## LOW POWER

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## MEDIUM POWER

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## HIGH POWER

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# CONTENTS



# ZUCCHINI

the specialist in  
busbar systems



Established in 1958 and now part of the Legrand Group, Zucchini has become a leading name in busbar power distribution systems and cast resin transformers.

Zucchini busbar is manufactured in state-of-the-art production facilities, including one of the most technically advanced aluminium plating processing units in Europe. These exceptional manufacturing capabilities enable Legrand to offer a fully tested range of products that are superior in terms of quality and design.

All Zucchini busbar trunking systems are certified to IEC 61439-6 (BS EN 61439-6) by third party test houses CESI/RINA and are manufactured in accordance with ISO 9001 : 2015 quality standards.





## An extensive range...

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.

see page 4



### 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.

see page 20



### 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.

see page 58



### CAST RESIN TRANSFORMERS

Legrand also offers a wide range of high quality, environmentally friendly cast resin transformers from 160 kVA up to 17 MVA.

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

visit [www.legrand.co.uk](http://www.legrand.co.uk)

# ZUCCHINI LB PLUS - LIGHTING AND POWER BUSBAR

Zucchini LB PLUS is a new range of 25 to 63 A busbars that are ideal for the distribution of power for lighting and low power applications. With a single product, LB PLUS replaces the LB, HL, and SL ranges, offering a busbar that is simpler, better performing, and easier to install.



A winning solution delivering performance and simplicity... with increased functionality, fewer part numbers and common accessories for all versions



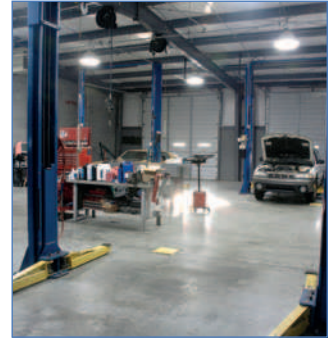
SHOPPING CENTRES,  
STORES, OFFICES



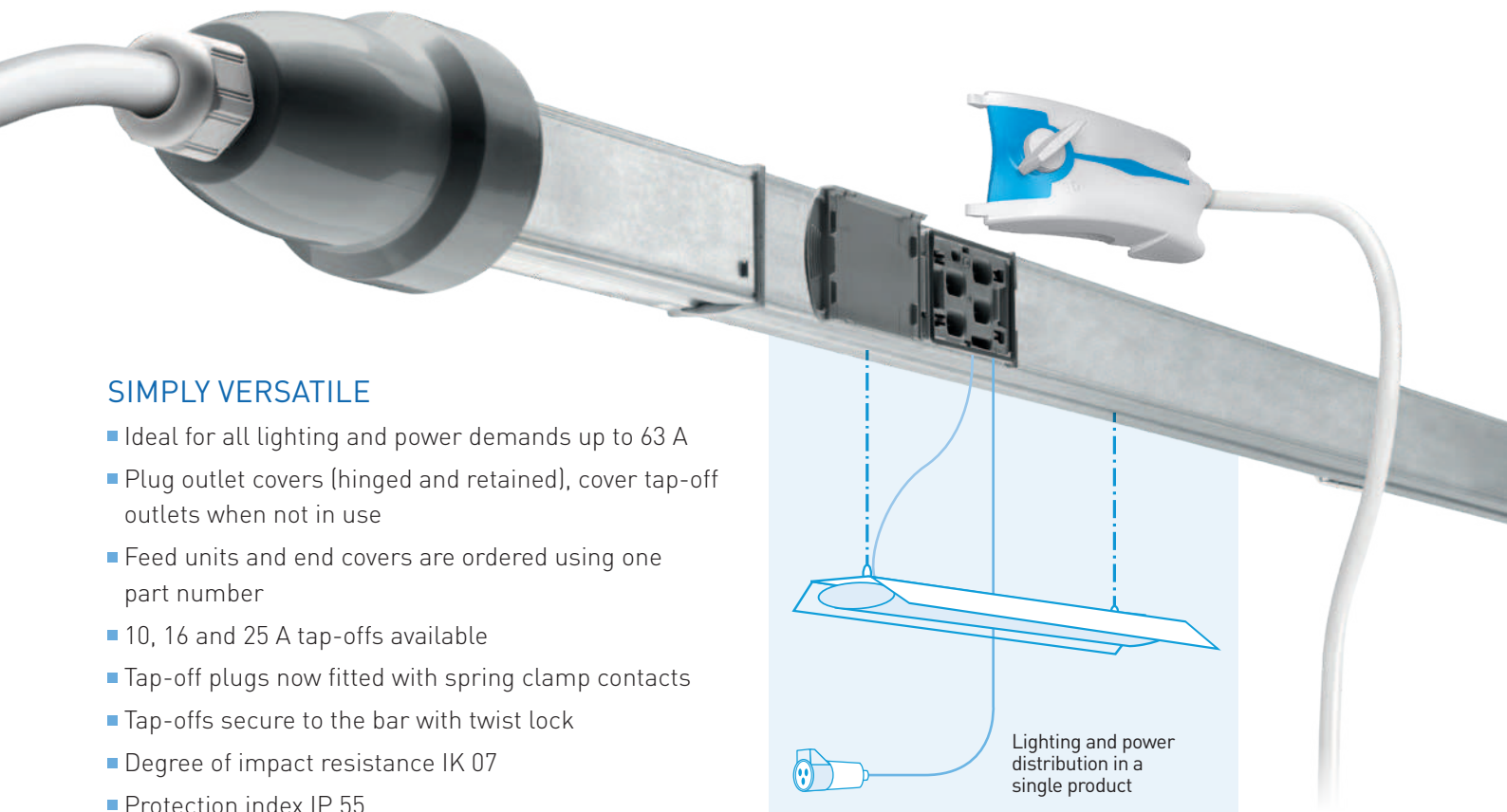
WAREHOUSES,  
GYMS, UNDERGROUND  
CAR PARKS



HOSPITALS,  
LABORATORIES



WORKSHOPS,  
MAINTENANCE AND  
REPAIR FACILITIES,  
PRODUCTION SITES



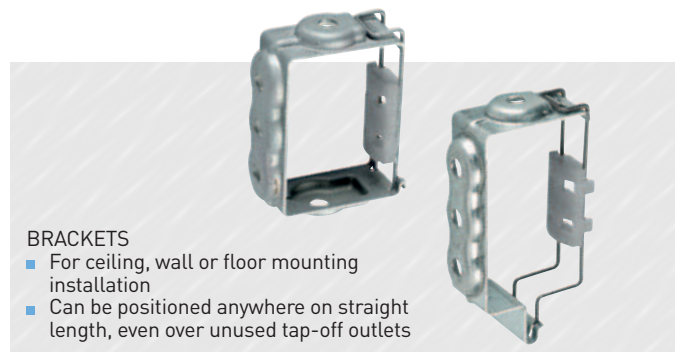
### SIMPLY VERSATILE

- Ideal for all lighting and power demands up to 63 A
- Plug outlet covers (hinged and retained), cover tap-off outlets when not in use
- Feed units and end covers are ordered using one part number
- 10, 16 and 25 A tap-offs available
- Tap-off plugs now fitted with spring clamp contacts
- Tap-offs secure to the bar with twist lock
- Degree of impact resistance IK 07
- Protection index IP 55



#### NEW TAP-OFF PLUGS

- Can be moved when the bar is energised
- With spring clamp contacts
- Self-extinguishing plastic components
- IP 55 without using additional accessories
- Can be fitted with positioning pin to ensure tap-off can only access the correct side of a double-sided bar



#### BRACKETS

- For ceiling, wall or floor mounting installation
- Can be positioned anywhere on straight length, even over unused tap-off outlets

# LB PLUS busbar trunking systems

## selection chart

	25 A				40 A		63 A
	2 conductors	4 conductors	6 conductors	8 conductors	4 conductors	8 conductors	4 conductors
<b>LB PLUS STRAIGHT LENGTHS – TYPE A</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
3 m length – 2 outlets	75150101	75160101	–	–	75200101	–	–
3 m length – 4 outlets	–	75160102	–	–	75200102	–	–
3 m length – 2 + 2 outlets	–	–	75170101	75180101	–	75220101	75240101
3 m length – 4 + 4 outlets	–	–	–	75180102	–	75220102	75240102
1.5 m length – 2 outlets	75200111		–	–	75200111	–	–
1.5 m length – 1 + 1 outlets	–	–	75220111		–	75220111	75240111
<b>LB PLUS STRAIGHT LENGTHS – TYPE B</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
3 m length – 4 outlets	75350102H	75360102H	–	–	75400102H	–	–
3 m length – 6 outlets	–	75360103H	–	–	75400103H	–	–
3 m length – 4 + 4 outlets	–	–	75370101H	75380101H	–	75420101H	75440101H
3 m length – 6 + 6 outlets	–	–	–	75380102H	–	75420102H	75440102H
1.5 m length – 2 outlets	75400111H		–	–	75400111H	–	–
1.5 m length – 1 + 1 outlets	–	–	75420111H		–	75420111H	75440111H
<b>FEED UNITS</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
RH feed unit + end cover (reduced dimensions)	75201003		75221003		75201003	75221003	75241003
LH feed unit + end cover (reduced dimensions)	75201004		75221004		75201004	75221004	75241004
Fast fit – feed unit RH	75161001	–	–	–	–	–	–
Fast fit – feed unit LH	75161002	–	–	–	–	–	–
Centre feed unit + end covers (reduced dimensions)	75201151		75221151		75201151	75221151	75241151
<b>FLEXIBLE JOINT</b>	75201263		75221263		75201263	75221263	75241263
<b>BRACKETS AND SUSPENSIONS</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
60 kg suspension bracket	75003000 (for TYPE A)			and	75003004 for (TYPE B)		
Hook for lamp	75003001						
Ring	75003002						
Pigtail for chain	75003005						
5 m steel cable with self locking clamp (TYPE B)	75003008 (TYPE B only)						
Bracket with 3 m steel cable (TYPE A)	75003009 (TYPE A only)						
<b>CABLE CHANNEL</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
PVC cable channel with cover (3 m)	71000104						
Bracket for cable channel	75003006						



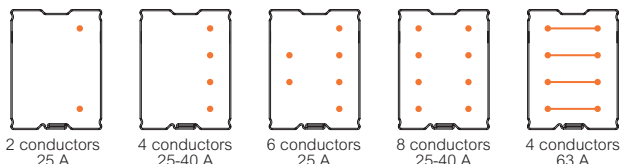
<b>10 A SINGLE PHASE TAP-OFFS</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
10 A plug with 1 m cable - L1-N	75005011						
10 A plug with 1 m cable - L2-N	–	75005012					
10 A plug with 1 m cable - L3-N	–	75005013					
10 A plug with 1 m cable - L-N2	–	75005014					
10 A plug with 3 m cable - L1-N	75005021						
10 A plug with 3 m cable - L2-N	–	75005022					
10 A plug with 3 m cable - L3-N	–	75005023					
10 A plug with 3 m cable - L-N2	–	75005024					
<b>16 A PHASE SELECTION TAP-OFFS</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
16 A plug (unfused)	75005000						
16 A plug + 1 x (5 x 20)	75005100						
16 A plug + 1 x (CH8)	75005200						
<b>16 A PRE-WIRED TAP-OFFS</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
SP & N with 1.5 m cable and 6.3 A fuse - L1-N	750051001L1						
SP & N with 1.5 m cable and 6.3 A fuse - L2-N	–	750051001L2					
SP & N with 1.5 m cable and 6.3 A fuse - L3-N	–	750051001L3					
SP & N with 1.5 m cable and 6.3 A fuse - L-N2	–	750051001LN2					
DP & N with 1.5 m cable and 1 x 6.3 A fuse - L1+L3-N	–	7500510014C					
SP & N with 3 m cable and 6.3 A fuse - L1-N	750051003L1						
SP & N with 3 m cable and 6.3 A fuse - L2-N	–	750051003L2					
SP & N with 3 m cable and 6.3 A fuse - L3-N	–	750051003L3					
SP & N with 3 m cable and 6.3 A fuse - L-N2	–	750051003LN2					
DP & N with 3 m cable and 1 x 6.3 A fuse - L1+L3-N	–	7500510034C					
<b>THREE-PHASE TAP-OFFS – 16 - 25 A</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
16 A 3 phase (unfused)	–	75005005					
25 A 3 phase (unfused)	–	75007005					
25 A 3 phase + 3 x (CH8)	–	75007205					
25 A 3 phase + 3 x (CH8) + 4 DIN BOX	–	75007206					
25 A 3 phase + (unfused) + 8 DIN BOX	–	75007207					
25 A 3 phase + (unfused) + 4 DIN BOX	–	75007006					
<b>TAP-OFF ACCESSORIES</b>	<b>252</b>	<b>254</b>	<b>256</b>	<b>258</b>	<b>404</b>	<b>408</b>	<b>634</b>
16 A mobile contact	75105000						
Window kit code	75105001						

## LB PLUS straight lengths – Type A

### straight lengths 25-63 A



75160102



Selection chart **p. 6-7**  
 Technical data **p. 12**  
 Dimensions and technical information **p. 14-15**

Pack	Cat. Nos.	Straight lengths – Type A										
		Rigid galvanised steel casing 3 m maximum distance between suspension brackets Conductors insulated with self-extinguishing plastic (IEC 60695-2-12 and V0 according to UL94) Standard tap-off outlets with captive IP 55 plug-outlet covers Protection index : IP 55 Impact resistance : IK 07 <b>252 with 2 x 25 A conductors</b>										
1	75150101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>2</td> <td>3-0</td> <td>2</td> <td>3-00</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	2	3-0	2	3-00
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	2	3-0	2	3-00								
		<b>254 with 4 x 25 A conductors</b>										
1	75160101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>4</td> <td>3-0</td> <td>2</td> <td>3-10</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	4	3-0	2	3-10
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	4	3-0	2	3-10								
1	75160102	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>4</td> <td>3-0</td> <td>4</td> <td>3-20</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	4	3-0	4	3-20
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	4	3-0	4	3-20								
		<b>256 with 6 x 25 A conductors</b>										
1	75170101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>6</td> <td>3-0</td> <td>2 + 2</td> <td>3-65</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	6	3-0	2 + 2	3-65
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	6	3-0	2 + 2	3-65								
		<b>258 with 8 x 25 A conductors</b>										
1	75180101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>8</td> <td>3-0</td> <td>2 + 2</td> <td>3-75</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	8	3-0	2 + 2	3-75
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	8	3-0	2 + 2	3-75								
1	75180102	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>8</td> <td>3-0</td> <td>4 + 4</td> <td>3-85</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	8	3-0	4 + 4	3-85
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	8	3-0	4 + 4	3-85								
		<b>404 with 4 x 40 A conductors</b>										
1	75200101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>4</td> <td>3-0</td> <td>2</td> <td>3-55</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	4	3-0	2	3-55
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	4	3-0	2	3-55								
1	75200102	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>4</td> <td>3-0</td> <td>4</td> <td>3-65</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	4	3-0	4	3-65
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	4	3-0	4	3-65								
1	75200111 <sup>1</sup>	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>4</td> <td>1-5</td> <td>2</td> <td>2-00</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	4	1-5	2	2-00
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	4	1-5	2	2-00								
		<b>408 with 8 x 40 A conductors</b>										
1	75220101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>8</td> <td>3-0</td> <td>2 + 2</td> <td>4-70</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	8	3-0	2 + 2	4-70
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	8	3-0	2 + 2	4-70								
1	75220102	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>8</td> <td>3-0</td> <td>4 + 4</td> <td>4-80</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	8	3-0	4 + 4	4-80
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	8	3-0	4 + 4	4-80								
1	75220111 <sup>2</sup>	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>8</td> <td>1-5</td> <td>1 + 1</td> <td>2-50</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	8	1-5	1 + 1	2-50
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	8	1-5	1 + 1	2-50								
		<b>634 with 4 x 63 A conductors</b>										
1	75240101	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>4</td> <td>3-0</td> <td>2 + 2</td> <td>4-70</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	63	4	3-0	2 + 2	4-70
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
63	4	3-0	2 + 2	4-70								
1	75240102	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>4</td> <td>3-0</td> <td>4 + 4</td> <td>4-80</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	63	4	3-0	4 + 4	4-80
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
63	4	3-0	4 + 4	4-80								
1	75240111	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>4</td> <td>1-5</td> <td>1 + 1</td> <td>2-50</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	63	4	1-5	1 + 1	2-50
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
63	4	1-5	1 + 1	2-50								

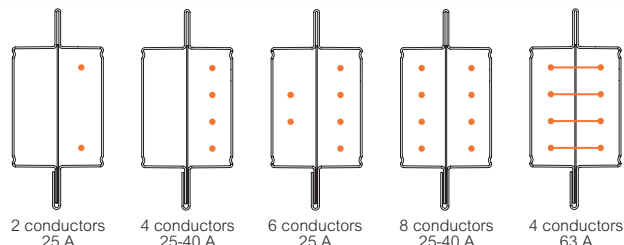
1 : For use with both 25 and 40 A systems, and also 2 and 4 conductor versions  
 2 : For use with both 25 and 40 A systems, and also 6 and 8 conductor versions

## LB PLUS straight lengths – Type B

### straight lengths 25-63 A



75360102H



Selection chart **p. 6-7**  
 Technical data **p. 13**  
 Dimensions and technical information **p. 14-15**

Pack	Cat. Nos.	Straight lengths – Type B										
		Reinforced highly rigid galvanised steel casing 7 m maximum distance between suspension brackets Conductors insulated with self-extinguishing plastic ZH (zero halogen) Standard tap-off outlets with captive IP 55 plug-outlet covers Mechanical separation of the 2 sides of the bar, (6 and 8 conductor versions) Protection index : IP 55 Impact resistance : IK 07 <b>252 with 2 x 25 A conductors</b>										
1	75350102H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>2</td> <td>3-0</td> <td>4</td> <td>5-45</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	2	3-0	4	5-45
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	2	3-0	4	5-45								
		<b>254 with 4 x 25 A conductors</b>										
1	75360102H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>4</td> <td>3-0</td> <td>4</td> <td>5-55</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	4	3-0	4	5-55
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	4	3-0	4	5-55								
1	75360103H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>4</td> <td>3-0</td> <td>6</td> <td>5-60</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	4	3-0	6	5-60
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	4	3-0	6	5-60								
		<b>256 with 6 x 25 A conductors</b>										
1	75370101H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>6</td> <td>3-0</td> <td>4 + 4</td> <td>6-10</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	6	3-0	4 + 4	6-10
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	6	3-0	4 + 4	6-10								
		<b>258 with 8 x 25 A conductors</b>										
1	75380101H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>8</td> <td>3-0</td> <td>4 + 4</td> <td>6-20</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	8	3-0	4 + 4	6-20
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	8	3-0	4 + 4	6-20								
1	75380102H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>8</td> <td>3-0</td> <td>6 + 6</td> <td>6-35</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	25	8	3-0	6 + 6	6-35
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
25	8	3-0	6 + 6	6-35								
		<b>404 with 4 x 40 A conductors</b>										
1	75400102H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>4</td> <td>3-0</td> <td>4</td> <td>6-00</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	4	3-0	4	6-00
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	4	3-0	4	6-00								
1	75400103H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>4</td> <td>3-0</td> <td>6</td> <td>6-10</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	4	3-0	6	6-10
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	4	3-0	6	6-10								
1	75400111H <sup>1</sup>	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>4</td> <td>1-5</td> <td>2</td> <td>3-20</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	4	1-5	2	3-20
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	4	1-5	2	3-20								
		<b>408 with 8 x 40 A conductors</b>										
1	75420101H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>8</td> <td>3-0</td> <td>4 + 4</td> <td>7-10</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	8	3-0	4 + 4	7-10
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	8	3-0	4 + 4	7-10								
1	75420102H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>8</td> <td>3-0</td> <td>6 + 6</td> <td>7-30</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	8	3-0	6 + 6	7-30
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	8	3-0	6 + 6	7-30								
1	75420111H <sup>2</sup>	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>8</td> <td>1-5</td> <td>1 + 1</td> <td>3-70</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	40	8	1-5	1 + 1	3-70
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
40	8	1-5	1 + 1	3-70								
		<b>634 with 4 x 63 A conductors</b>										
1	75440101H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>4</td> <td>3-0</td> <td>4 + 4</td> <td>7-10</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	63	4	3-0	4 + 4	7-10
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
63	4	3-0	4 + 4	7-10								
1	75440102H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>4</td> <td>3-0</td> <td>6 + 6</td> <td>7-30</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	63	4	3-0	6 + 6	7-30
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
63	4	3-0	6 + 6	7-30								
1	75440111H	<table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Conductors</th> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>4</td> <td>1-5</td> <td>1 + 1</td> <td>3-70</td> </tr> </tbody> </table>	Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)	63	4	1-5	1 + 1	3-70
Rating (A)	Conductors	Length (m)	Outlet points	Weight (kg)								
63	4	1-5	1 + 1	3-70								

1 : For use with both 25 and 40 A systems, and also 2 and 4 conductor versions  
 2 : For use with both 25 and 40 A systems, and also 6 and 8 conductor versions

## LB PLUS trunking components



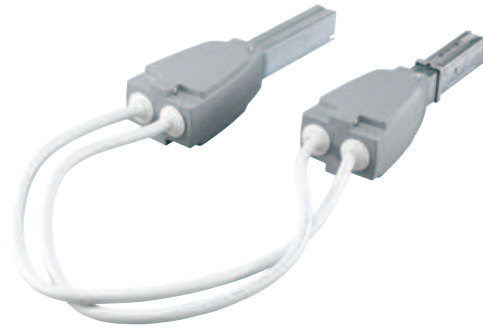
75201003



75161001



75201004



75221263



Selection chart **p. 6-7**

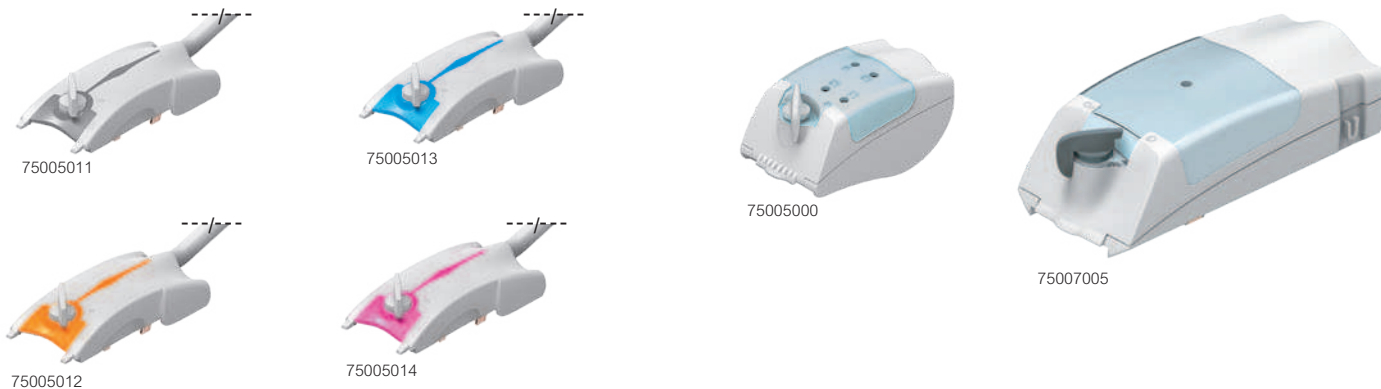
Technical data **p. 12-13**

Dimensions and technical information **p. 16-17**

Pack	Cat. Nos.	End feed units	
		Allow electrical powering of the LB PLUS busbar With terminals for the connection of stranded or solid copper wire cables Delivered with corresponding cable glands	
		<b>Right hand feed units (reduced dimensions)</b>	
		Supplied complete with corresponding end cover Cable terminal capacity 6 mm <sup>2</sup> to 25 mm <sup>2</sup> Max. cable Ø 32 mm	
		Type	Weight (kg)
1	75201003	25 / 40 A – 2 / 4 conductor version	0·80
1	75221003	25 / 40 A – 6 / 8 conductor version	0·90
1	75241003	63 A – 4 conductor version	0·80
		<b>Left hand feed units (reduced dimensions)</b>	
		Supplied complete with corresponding end cover Cable terminal capacity 6 mm <sup>2</sup> to 25 mm <sup>2</sup> Max. cable Ø 32 mm	
		Type	Weight (kg)
1	75201004	25 / 40 A – 2 / 4 conductor version	1·00
1	75221004	25 / 40 A – 6 / 8 conductor version	1·20
1	75241004	63 A – 4 conductor version	1·10
		<b>Fast fit feed unit</b>	
		Supplied complete with corresponding end cover Cable terminal capacity up to 6 mm <sup>2</sup> Cable Ø from 12 mm to 18 mm	
		Type	Weight (kg)
1	75161001	25 A – 2 / 4 conductor version RH	0·45
1	75161002	25 A – 2 / 4 conductor version LH	0·85

Pack	Cat. Nos.	Centre feed units	
		Centre feed units can be used to power the busbar from an intermediate point of the line, reducing the voltage drop at the end of the line and/or facilitating the installation when the power supply point is near the centre of the line Complete with all internal wiring One set of terminals feeds both left hand and right hand feed sections Supplied with both end caps	
		Type	Weight (kg)
1	75201151	25 / 40 A – 2 / 4 conductor version	3·70
1	75221151	25 / 40 A – 6 / 8 conductor version	4·40
1	75241151	63 A – 4 conductor version	2·70
		<b>Flexible joints (reduced dimensions)</b>	
		Consists of a right hand and left hand unit Used to change direction, change level or overcome obstructions Flexible cable length : 940 mm	
		Type	Weight (kg)
1	75201263	25 / 40 A – 2 / 4 conductor version	2·00
1	75221263	25 / 40 A – 6 / 8 conductor version	3·10
1	75241263	63 A – 4 conductor version	2·50

# LB PLUS tap-off plugs



Selection chart **p. 6-7**  
 Technical data **p. 12-13**  
 Dimensions and technical information **p. 16-17**

Pack	Cat. Nos.	10 A single phase tap-offs												
1	75005011	For use with Type A and Type B busbar, all ratings <b>L1 colour code grey, cable type H05VVF</b> <table border="1"> <thead> <tr> <th>Phase</th> <th>Length (m)</th> <th>Weight (kg)</th> <th>Fuseholder</th> </tr> </thead> <tbody> <tr> <td>L1-N</td> <td>1</td> <td>0.16</td> <td>unfused</td> </tr> <tr> <td>L1-N</td> <td>3</td> <td>0.38</td> <td>unfused</td> </tr> </tbody> </table>	Phase	Length (m)	Weight (kg)	Fuseholder	L1-N	1	0.16	unfused	L1-N	3	0.38	unfused
Phase	Length (m)		Weight (kg)	Fuseholder										
L1-N	1	0.16	unfused											
L1-N	3	0.38	unfused											
1	75005021													
1	75005012	<b>L2 colour code orange, cable type H05VVF</b> <table border="1"> <thead> <tr> <th>Phase</th> <th>Length (m)</th> <th>Weight (kg)</th> <th>Fuseholder</th> </tr> </thead> <tbody> <tr> <td>L2-N</td> <td>1</td> <td>0.16</td> <td>unfused</td> </tr> <tr> <td>L2-N</td> <td>3</td> <td>0.38</td> <td>unfused</td> </tr> </tbody> </table>	Phase	Length (m)	Weight (kg)	Fuseholder	L2-N	1	0.16	unfused	L2-N	3	0.38	unfused
Phase	Length (m)		Weight (kg)	Fuseholder										
L2-N	1	0.16	unfused											
L2-N	3	0.38	unfused											
1	75005022													
1	75005013	<b>L3 colour code blue, cable type H05VVF</b> <table border="1"> <thead> <tr> <th>Phase</th> <th>Length (m)</th> <th>Weight (kg)</th> <th>Fuseholder</th> </tr> </thead> <tbody> <tr> <td>L3-N</td> <td>1</td> <td>0.16</td> <td>unfused</td> </tr> <tr> <td>L3-N</td> <td>3</td> <td>0.38</td> <td>unfused</td> </tr> </tbody> </table>	Phase	Length (m)	Weight (kg)	Fuseholder	L3-N	1	0.16	unfused	L3-N	3	0.38	unfused
Phase	Length (m)		Weight (kg)	Fuseholder										
L3-N	1	0.16	unfused											
L3-N	3	0.38	unfused											
1	75005023													
1	75005014	<b>L-N2 colour code magenta, cable type H05VVF</b> <table border="1"> <thead> <tr> <th>Phase</th> <th>Length (m)</th> <th>Weight (kg)</th> <th>Fuseholder</th> </tr> </thead> <tbody> <tr> <td>L-N2</td> <td>1</td> <td>0.16</td> <td>unfused</td> </tr> <tr> <td>L-N2</td> <td>3</td> <td>0.38</td> <td>unfused</td> </tr> </tbody> </table>	Phase	Length (m)	Weight (kg)	Fuseholder	L-N2	1	0.16	unfused	L-N2	3	0.38	unfused
Phase	Length (m)		Weight (kg)	Fuseholder										
L-N2	1	0.16	unfused											
L-N2	3	0.38	unfused											
1	75005024													

Pack	Cat. Nos.	16 A phase selection tap-offs	Weight (kg)
1	75005000	16 A plug (unfused)	0.12
1	75005100	16 A plug + 1 x (5x20)	0.13
1	75005200	16 A plug + 1 x (CH8)	0.13

Pack	Cat. Nos.	16 A pre-wired tap-offs	Phase
1	75005100L1	SP & N with 6.3 A fuse	L1-N
1	75005100L2	SP & N with 6.3 A fuse	L2-N
1	75005100L3	SP & N with 6.3 A fuse	L3-N
1	75005100LN2	SP & N with 6.3 A fuse	L-N2
1	7500510014C	DP & N with 1 x 6.3 A fuse	L1+L3-N
<b>With 3 m cable</b>			
1	750051003L1	SP & N with 6.3 A fuse	L1-N
1	750051003L2	SP & N with 6.3 A fuse	L2-N
1	750051003L3	SP & N with 6.3 A fuse	L3-N
1	750051003LN2	SP & N with 6.3 A fuse	L-N2
1	7500510034C	DP & N with 1 x 6.3 A fuse	L1+L3-N

Pack	Cat. Nos.	3 phase tap-offs – 16-25 A	Weight (kg)
1	75005005	16 A 3 phase (unfused)	0.13
1	75007005	25 A 3 phase (unfused)	0.12
1	75007205	25 A 3 phase + 3 x (CH8)	0.12
1	75007206	25 A 3 phase + 3 x (CH8) + 4 DIN box	0.63
1	75007207	25 A 3 phase (unfused) + 8 DIN box	0.80
1	75007006	25 A 3 phase (unfused) + 4 DIN box	0.63

Pack	Cat. Nos.	Tap-off accessories
10	75105000	Used with Cat. Nos. 75005000 or 75005100 to make contact with additional conductors on the busbar 16 A mobile contact
20	75105001	Enables tap-off to access a single designated side of the busbar Window kit code

## LB PLUS busbar trunking system

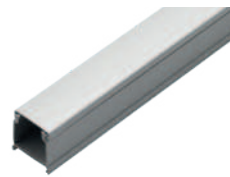
hangers and cable channel



75003000



75003004



71000104



75003006



75003002



75003001



75003005



EEA313



EEC353



Dimensions and technical information p. 18-19

Pack	Cat. Nos.	Hangers
12 12	75003000 75003004	<b>60 kg suspension bracket</b> Bracket Cat. No. 75003000 can be used for the suspension of the line and the suspension of light fittings at the same time, while bracket Cat. No. 75003004 may only perform one of the two functions, depending on its rotation For Type A busbar – weight 0.045 kg For Type B busbar – weight 0.045 kg
10	75003001	<b>Hook for lamp</b> Must always be used with brackets Cat. Nos. 75003000 or 75003004, depending on the type of busbar Weight 0.015 kg
10	75003002	<b>Ring</b> Must always be used with brackets Cat. Nos. 75003000 or 75003004, depending on the type of busbar Weight 0.015 kg
10	75003005	<b>Pigtail for chain</b> Must always be used with brackets Cat. Nos. 75003000 or 75003004, depending on the type of busbar Weight 0.015 kg
1	75003007	<b>Spacer on brackets</b> For floor installation Weight 0.040 kg
12	75003008	<b>5 m steel cable with self locking clamp</b> For Type B busbar – weight 0.085 kg
12	75003009	<b>Bracket with 3 m steel cable</b> For Type A busbar – weight 0.05 kg

Pack	Cat. Nos.	PVC cable channel
1	71000104	<b>PVC cable channel with cover</b> 3 m – weight 0.884 kg
6	75003006	<b>Bracket for cable channel</b> Must always be used with brackets Cat. Nos. 75003000 or 75003004 depending on the type of busbar and cable channel Cat. No. 71000104 Weight 0.135 kg
1	EEC348	<b>Steel cable tray</b> <b>Cable tray</b> 3 m (L) x 50 mm (W) x 13 mm (H)
1	EEA313	Trunking suspended fixing bracket c/w cable tray stirrup. Used when running cable tray on top of busbar trunking
1	EEC353	Cable tray fixing bracket

# LB PLUS busbar trunking systems

## technical data

### ■ LB PLUS - Type A

Type		252	254	256	258	404	408	634
Number of live conductors		2	4	6	8	4	8	4
Casing overall dimensions	LxH [mm]	35 x 46	35 x 46	35 x 46	35 x 46	35 x 46	35 x 46	35 x 46
Rated current	I <sub>n</sub> [A]	25	25	25	25	40	40	63
Operating voltage	U <sub>e</sub> [V]	400	400	400	400	400	400	400
Insulation voltage	U <sub>i</sub> [V]	500	500	500	500	500	500	500
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current (0.1 s)	I <sub>cw</sub> [kArms]	–	2.2	2.2	2.2	2.7	2.7	2.7
Peak current	I <sub>pk</sub> [kA]	–	3.3	3.3	3.3	4.1	4.1	4.1
Single phase rated short-time current (0.1 s)	I <sub>cw</sub> [kArms]	1.3	1.3	1.3	1.3	1.6	1.6	1.6
Single phase peak current	I <sub>pk</sub> [kA]	2.0	2.0	2.0	2.0	2.4	2.4	2.4
Thermal limit	I <sup>2</sup> t [A <sup>2</sup> s x 10 <sup>6</sup> ]	0.174	0.484	0.484	0.484	0.729	0.729	0.729
20° C phase resistance	R <sub>20</sub> [mΩ/m]	4.761	4.761	4.761	4.761	3.190	3.190	1.595
Phase resistance at thermal conditions	R <sub>t</sub> [mΩ/m]	5.656	5.656	5.656	5.656	3.802	3.802	1.901
Phase reactance (50Hz)	X [mΩ/m]	0.229	0.229	0.229	0.229	0.236	0.236	0.118
Phase impedance	Z [mΩ/m]	4.767	4.767	4.767	4.767	3.199	3.199	1.599
Resistance of the protective conductor <sup>1</sup>	R <sub>PE</sub> [mΩ/m]	1.695	1.695	1.695	1.695	1.695	1.695	1.695
Reactance of the protective conductor <sup>1</sup> (50Hz)	X <sub>PE</sub> [mΩ/m]	0.222	0.222	0.222	0.222	0.222	0.222	0.222
Resistance of the fault loop	R <sub>o</sub> [mΩ/m]	6.456	6.456	6.456	6.456	4.885	4.885	3.290
Reactance of the fault loop (50Hz)	X <sub>o</sub> [mΩ/m]	0.451	0.451	0.451	0.451	0.458	0.458	0.340
Impedance of the fault loop	Z <sub>o</sub> [mΩ/m]	6.472	6.472	6.472	6.472	4.906	4.906	3.308
Voltage drop with distributed load referred to V3f <sup>3</sup>	ΔV 10 <sup>-3</sup> cosφ = 0.70 [V/m/A]	4.123 <sup>2</sup>	3.570	3.570	3.570	2.830	2.451	1.225
	ΔV 10 <sup>-3</sup> cosφ = 0.75 [V/m/A]	4.393 <sup>2</sup>	3.805	3.805	3.805	3.008	2.605	1.302
	ΔV 10 <sup>-3</sup> cosφ = 0.80 [V/m/A]	4.662 <sup>2</sup>	4.038	4.038	4.038	3.183	2.757	1.378
	ΔV 10 <sup>-3</sup> cosφ = 0.85 [V/m/A]	4.928 <sup>2</sup>	4.268	4.268	4.268	3.356	2.906	1.453
	ΔV 10 <sup>-3</sup> cosφ = 0.90 [V/m/A]	5.190 <sup>2</sup>	4.495	4.495	4.495	3.525	3.052	1.526
	ΔV 10 <sup>-3</sup> cosφ = 0.95 [V/m/A]	5.445 <sup>2</sup>	4.715	4.715	4.715	3.686	3.192	1.596
	ΔV 10 <sup>-3</sup> cosφ = 1.00 [V/m/A]	5.656 <sup>2</sup>	4.898	4.898	4.898	3.802	3.293	1.646
Weight	p [kg/m]	1.00	1.04	1.25	1.28	1.19	1.56	1.56
Fire load	[kWh/m]	1.0	1.0	1.9	1.9	1.0	1.9	1.9
Protection index	IP	55	55	55	55	55	55	55
Degree of impact-resistance	IK	07	07	07	07	07	07	07
Joule effect losses at rated current	P [W/m]	10.6	10.6	10.6	10.6	18.2	18.2	22.6
Ambient temperature min / MAX	t [°C]	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50

1 : Metal casing

2 : Single phase values with distributed load

3 : Three phase

$$\Delta V_{3f} = \sqrt{3}/2 \times (R_t \cos\phi + X \sin\phi)$$

$$\Delta V_{3f}(I_n) = I \times L \times \Delta V_{3f} : (\text{knowing the current and length of the line})$$

$$\Delta V_{3f}(I_n)\% = (\Delta V_{3f}(I_n) / U_e) \times 100 (\%)$$

To calculate the ΔV1f (Single phase) on distributed load:

$$\Delta V_{1f} = 1/2 \times (2R_t \cos\phi + 2X \sin\phi)$$

$$\Delta V_{1f}(I_n) = I \times L \times \Delta V_{1f} : (\text{knowing the current and length of the line})$$

$$\Delta V_{1f}(I_n)\% = (\Delta V_{1f}(I_n) / U_e) \times 100 (\%)$$

I = operating current (A)

L = length (m)

Short circuit protection for Zucchini's product ranges (I<sub>n</sub> ≤ 100A)

Zucchini busbar trunking systems with a rated current lower than or equal to 100A (LB PLUS-MS 63 and 100) are properly protected through an MCB (Miniature Circuit Breaker) with a rated current lower than or equal to that of the busbar. This protection is guaranteed up to the MCB breaking capacity

Product fully in compliance with IEC 61439-6

# LB PLUS busbar trunking systems

## technical data

### ■ LB PLUS – Type B

Type		252	254	256	258	404	408	634
Number of live conductors		2	4	6	8	4	8	4
Casing overall dimensions	LxH [mm]	35 x 77	35 x 77	35 x 77	35 x 77	35 x 77	35 x 77	35 x 77
Rated current	I <sub>n</sub> [A]	25	25	25	25	40	40	63
Operating voltage	U <sub>e</sub> [V]	400	400	400	400	400	400	400
Insulation voltage	U <sub>i</sub> [V]	500	500	500	500	500	500	500
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current (0.1 s)	I <sub>cw</sub> [kArms]	–	2.2	2.2	2.2	2.7	2.7	2.7
Peak current	I <sub>pk</sub> [kA]	–	3.3	3.3	3.3	4.1	4.1	4.1
Single phase rated short-time current (0.1 s)	I <sub>cw</sub> [kArms]	1.3	1.3	1.3	1.3	1.6	1.6	1.6
Single phase peak current	I <sub>pk</sub> [kA]	2.0	2.0	2.0	2.0	2.4	2.4	2.4
Thermal limit	I <sup>2</sup> t [A <sup>2</sup> s x 10 <sup>6</sup> ]	0.174	0.484	0.484	0.484	0.729	0.729	0.729
20 °C phase resistance	R <sub>20</sub> [mΩ/m]	4.761	4.761	4.761	4.761	3.190	3.190	1.595
Phase resistance at thermal conditions	R <sub>t</sub> [mΩ/m]	5.656	5.656	5.656	5.656	3.802	3.802	1.901
Phase reactance (50Hz)	X [mΩ/m]	0.229	0.229	0.229	0.229	0.236	0.236	0.118
Phase impedance	Z [mΩ/m]	4.767	4.767	4.767	4.767	3.199	3.199	1.599
Resistance of the protective conductor <sup>1</sup>	R <sub>PE</sub> [mΩ/m]	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Reactance of the protective conductor <sup>1</sup> (50Hz)	X <sub>PE</sub> [mΩ/m]	0.274	0.274	0.274	0.274	0.274	0.274	0.274
Resistance of the fault loop	R <sub>o</sub> [mΩ/m]	5.956	5.956	5.956	5.956	4.385	4.385	2.790
Reactance of the fault loop (50Hz)	X <sub>o</sub> [mΩ/m]	0.503	0.503	0.503	0.503	0.510	0.510	0.392
Impedance of the fault loop	Z <sub>o</sub> [mΩ/m]	5.977	5.977	5.977	5.977	4.415	4.415	2.817
Voltage drop with distributed load referred to V3f <sup>3</sup>	ΔV 10 <sup>-3</sup> cosφ = 0.70 [V/m/A]	4.123 <sup>2</sup>	3.570	3.570	3.570	2.830	2.451	1.225
	ΔV 10 <sup>-3</sup> cosφ = 0.75 [V/m/A]	4.393 <sup>2</sup>	3.805	3.805	3.805	3.008	2.605	1.302
	ΔV 10 <sup>-3</sup> cosφ = 0.80 [V/m/A]	4.662 <sup>2</sup>	4.038	4.038	4.038	3.183	2.757	1.378
	ΔV 10 <sup>-3</sup> cosφ = 0.85 [V/m/A]	4.928 <sup>2</sup>	4.268	4.268	4.268	3.356	2.906	1.453
	ΔV 10 <sup>-3</sup> cosφ = 0.90 [V/m/A]	5.190 <sup>2</sup>	4.495	4.495	4.495	3.525	3.052	1.526
	ΔV 10 <sup>-3</sup> cosφ = 0.95 [V/m/A]	5.445 <sup>2</sup>	4.715	4.715	4.715	3.686	3.192	1.596
	ΔV 10 <sup>-3</sup> cosφ = 1.00 [V/m/A]	5.656 <sup>2</sup>	4.898	4.898	4.898	3.802	3.293	1.646
Weight	p [kg/m]	1.80	1.83	2.02	2.02	1.98	2.33	2.33
Fire load	[kWh/m]	1.1	1.1	2.1	2.1	1.1	2.1	2.1
Protection index	IP	55	55	55	55	55	55	55
Degree of impact-resistance	IK	07	07	07	07	07	07	07
Joule effect losses at rated current	P [W/m]	10.6	10.6	10.6	10.6	18.2	18.2	22.6
Ambient temperature min-/MAX·	t [°C]	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50

1 : Metal casing

2 : Single phase values with distributed load

3 : Three phase - see pg 12

### Temperature rating schedule according to the room temperature

Room temperature [°C]	15	20	25	30	35	40	45	50	55	60
K1 Factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

### Multiplier coefficient of rated current for room temperature values different from 40° C

#### Mechanical loads permitted table

The table shows the maximum weights (kg) that can be supported, both for concentrated, and distributed loads

LB PLUS – TYPE B	LB PLUS – TYPE A	Distance between suspension brackets	Concentrated load	Distributed load
		1.5	40	50 kg/m (75 kg) <sup>4</sup>
	2.0	30	30 kg/m (60 kg) <sup>4</sup>	
	3.0	20	13 kg/m (39 kg) <sup>4</sup>	
	5.0	13	5 kg/m (25 kg) <sup>4</sup>	
	7.0	7	2 kg/m (14 kg) <sup>4</sup>	

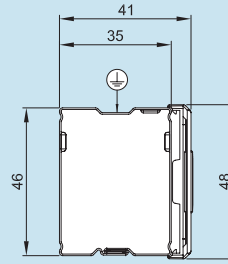
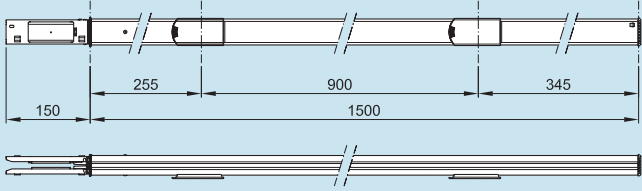
4 : Distributed load total weight

# LB PLUS busbar trunking systems

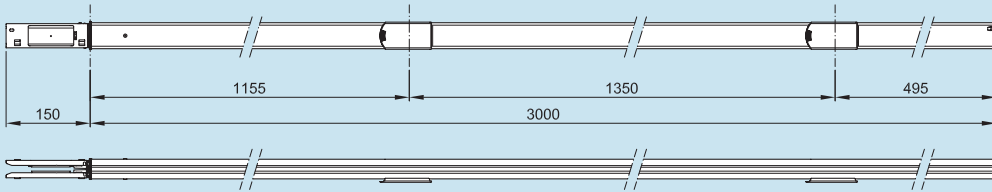
technical information

## ■ LB PLUS – Type A – 252/254/404

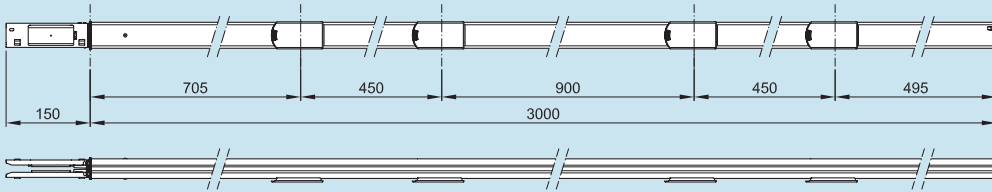
1.5 m - 2 outlets (single sided only)



3 m - 2 outlets (single sided only)

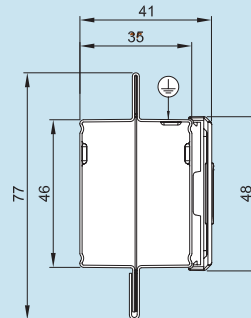
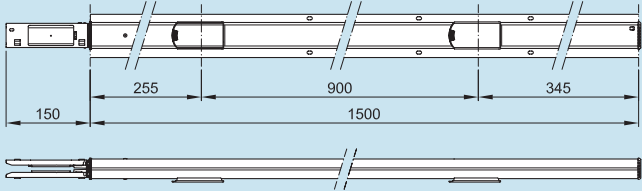


3 m - 4 outlets (single sided only)

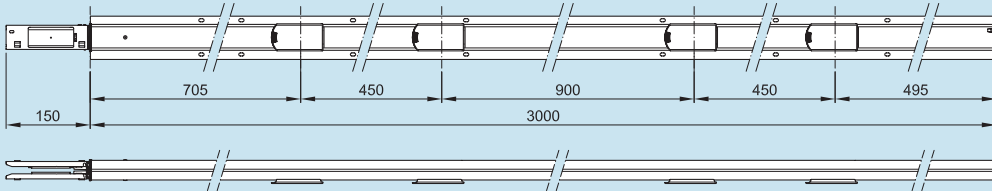


## ■ LB PLUS – Type B – 252/254/404

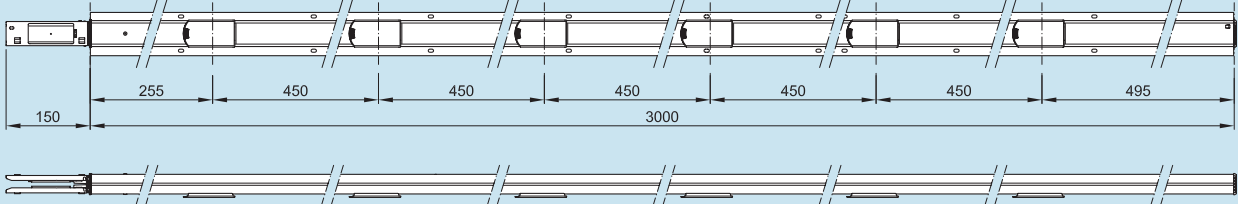
1.5 m - 2 outlets (single sided only)



3 m - 4 outlets (single sided only)



3 m - 6 outlets (single sided only)



All dimensions (mm) are nominal

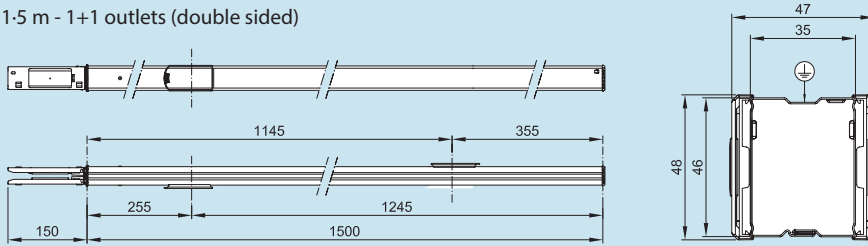


# LB PLUS busbar trunking systems

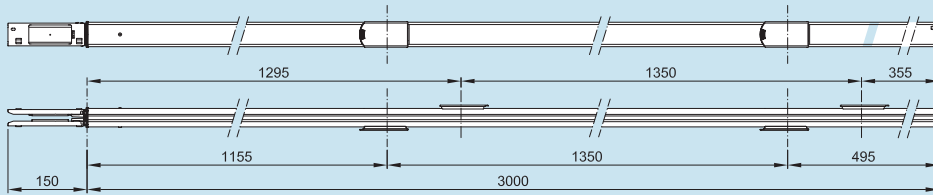
technical information

## ■ LB PLUS – Type A – 256/258/408/634

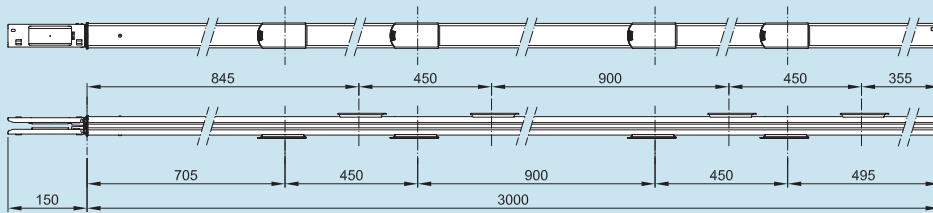
1.5 m - 1+1 outlets (double sided)



3 m - 2+2 outlets (double sided)

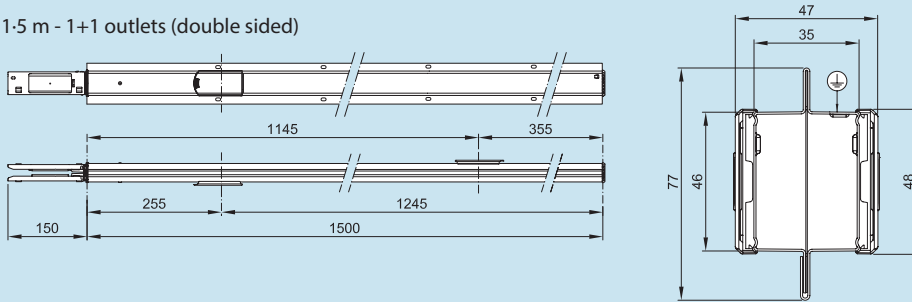


3 m - 4+4 outlets (double sided)

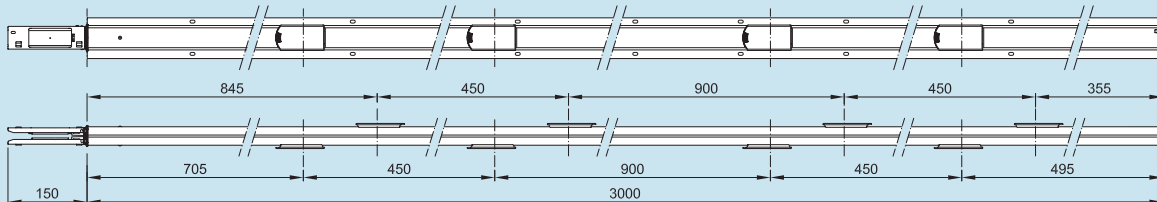


## ■ LB PLUS– Type B – 256/258/408/634

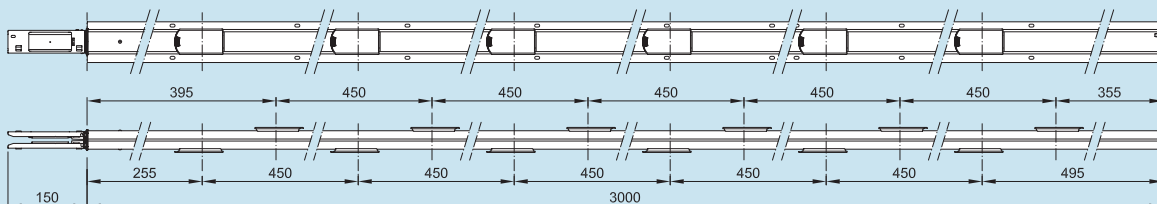
1.5 m - 1+1 outlets (double sided)



3 m - 4+4 outlets (double sided)



3 m - 6+6 outlets (double sided)



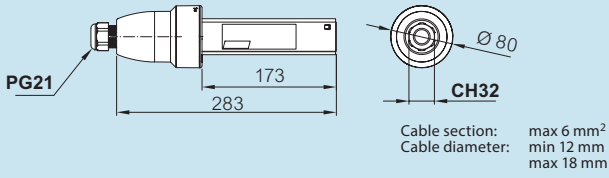
All dimensions (mm) are nominal

# LB PLUS busbar trunking systems

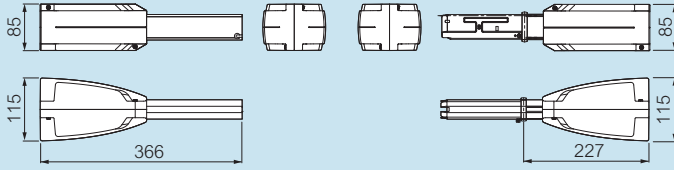
## technical information

### Trunking components

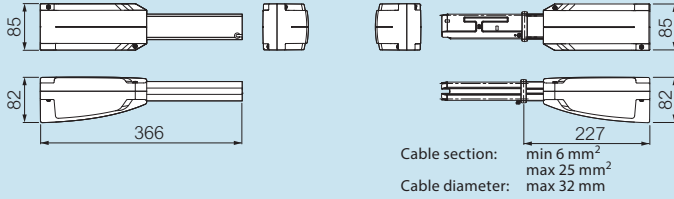
#### Feed unit 254



#### Feed unit (reduced dimensions) 40 / 63 A 408

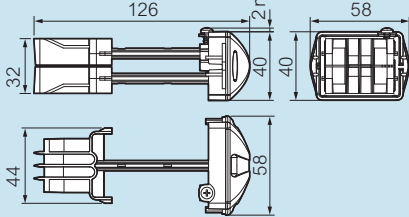


#### 404 / 634

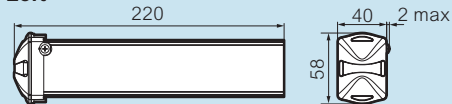


#### End cover

##### Right

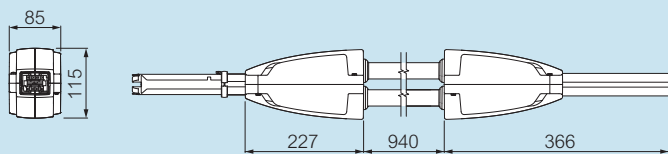


##### Left

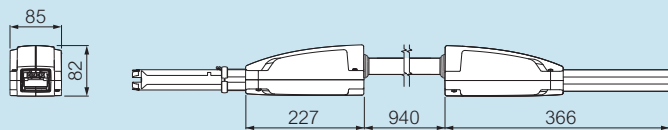


#### Flexible joint (reduced dimensions) 404 / 408 / 634

##### 408



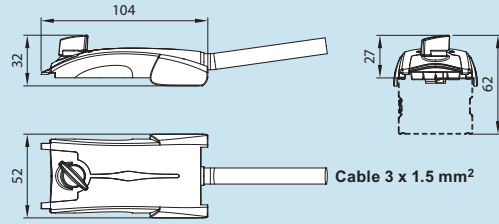
##### 404 / 603



All dimensions (mm) are nominal

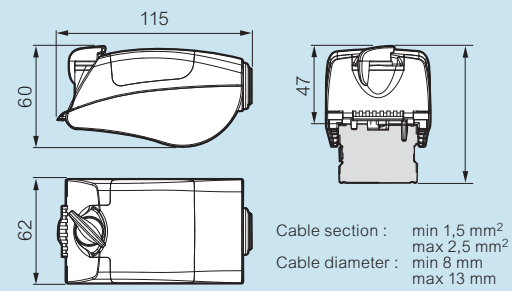
### Tap-offs

#### Plug 10 A



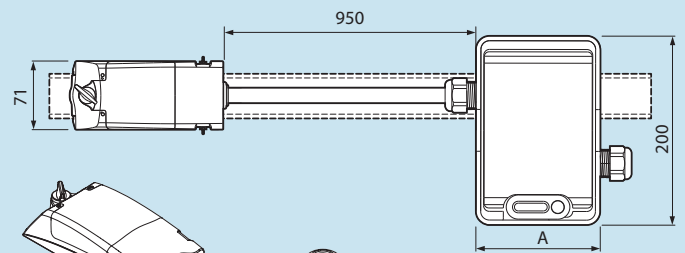
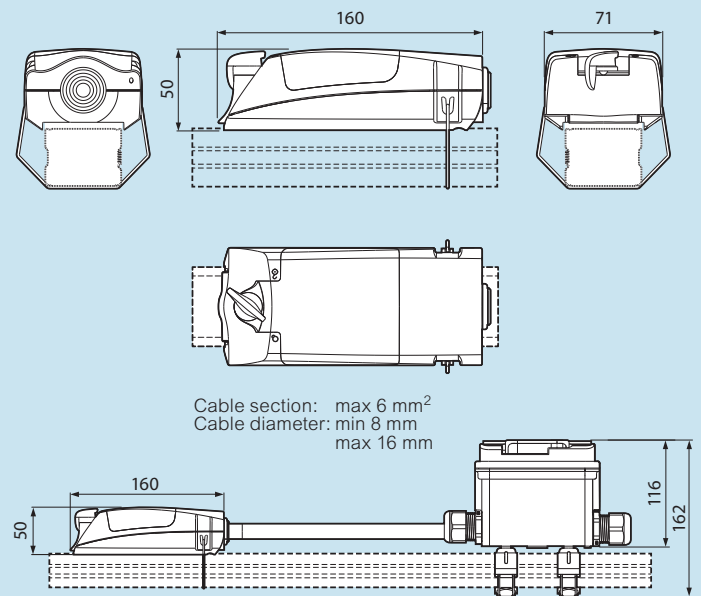
Plug 10 A  
L1-N GREY  
L2-N ORANGE  
L3-N BLUE  
L-N2 MAGENTA

#### Plug 16 A

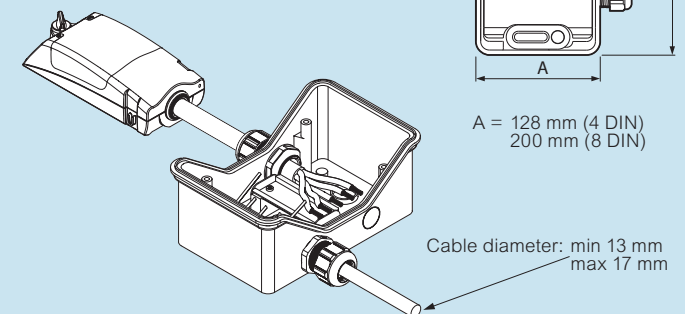


#### Plug 25 A

Cat. Nos. 75007005 / 75007205



A = 128 mm (4 DIN)  
200 mm (8 DIN)

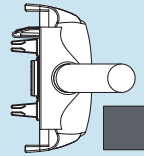
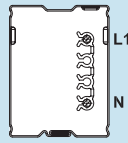


# LB PLUS busbar trunking systems

## technical information

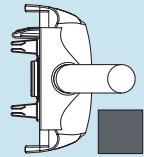
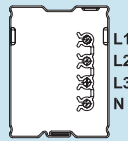
■ Colour coding for 10 A single phase tap-offs

2 CONDUCTORS

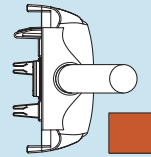


L1-N  
75005011 / 75005021

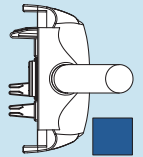
4 CONDUCTORS  
three-phase



L1-N  
75005011 / 75005021

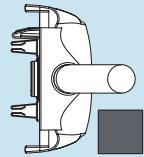
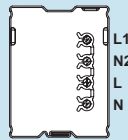


L2-N  
75005012 / 75005022

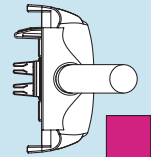


L3-N  
75005013 / 75005023

4 CONDUCTORS  
dual single phase

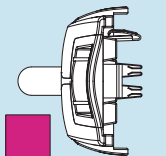


L1-N  
75005011 / 75005021

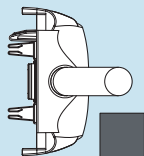
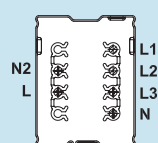


L-N2  
75005014 / 75005024

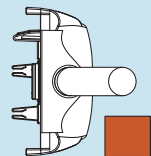
6 CONDUCTORS



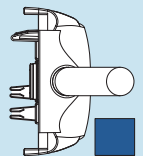
L-N2  
75005014 / 75005024



L1-N  
75005011 / 75005021

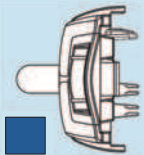


L2-N  
75005012 / 75005022

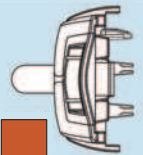


L3-N  
75005013 / 75005023

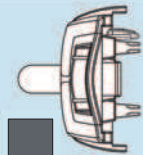
8 CONDUCTORS



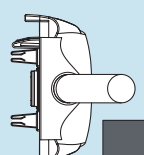
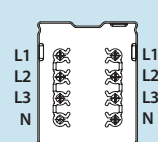
L3-N  
75005013 / 75005023



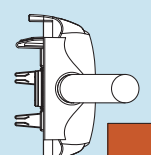
L2-N  
75005012 / 75005022



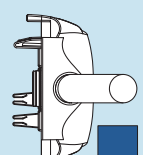
L1-N  
75005011 / 75005021



L1-N  
75005011 / 75005021

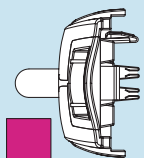


L2-N  
75005012 / 75005022

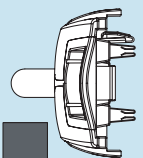


L3-N  
75005013 / 75005023

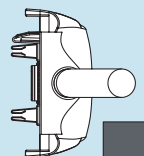
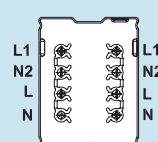
4 x SINGLE PHASE



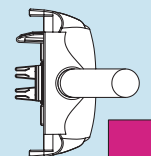
L-N2  
75005014 / 75005024



L1-N  
75005011 / 75005021



L1-N  
75005011 / 75005021



L-N2  
75005014 / 75005024

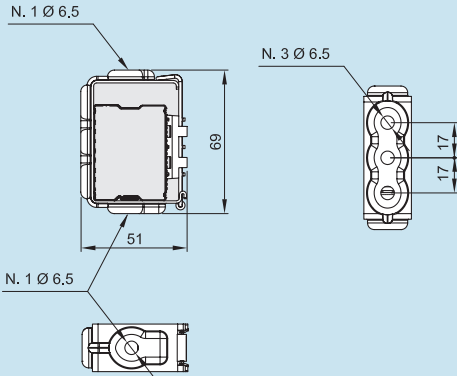
All dimensions (mm) are nominal

# LB PLUS busbar trunking systems

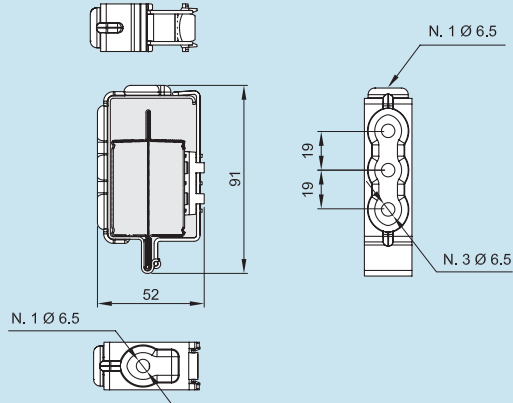
technical information

## ■ Hangers and cable channel

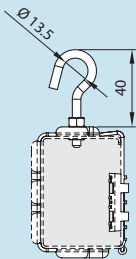
**60 kg suspension bracket for Type A busbar Cat. No. 75003000**



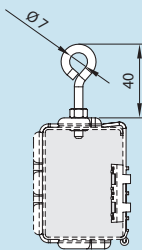
**60 kg suspension bracket for Type B busbar Cat. No. 75003004**



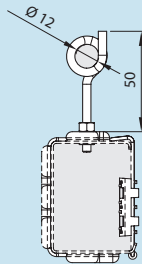
**Hook for lamp Cat. No. 75003001**



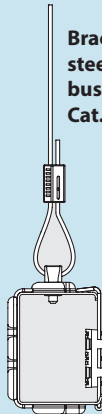
**Ring Cat. No. 75003002**



**Pig tail for chain Cat. No. 75003005**



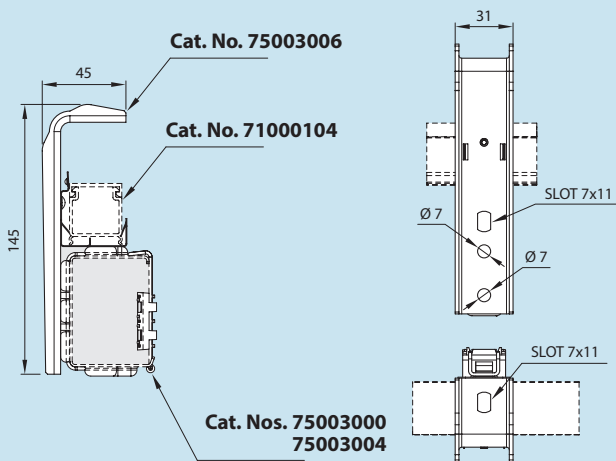
**Bracket with 3 m steel cable for Type A busbar Cat. No. 75003009**



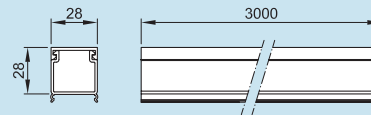
**5 m steel cable with self-locking clamp for Type B busbar Cat. No. 75003008**



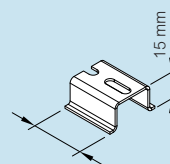
### Bracket for cable channel



**PVC cable channel with cover Cat. No. 71000104**



**Spacer on brackets for floor installation Cat. No. 75003007**



## LB PLUS busbar trunking systems

### installation methods

LB PLUS requires a fixing bracket Cat. No. 75003000 for Type A and a fixing bracket Cat. No. 75003004 for Type B  
Both brackets come with a 6.5 mm Ø hole and can be fixed to 6 mm<sup>2</sup> threaded rod

#### ■ Suspension

For suspension, the bracket must be fitted with a range of appropriate accessories, which must be added according to the installation requirements

#### Ceiling suspension of LB PLUS Type A

##### Pigtail for chain

This solution is possible by ordering suspension bracket item Cat. No. 75003000 and accessory Cat. No. 75003005, preset for the connection of a chain



##### Bracket with steel cable

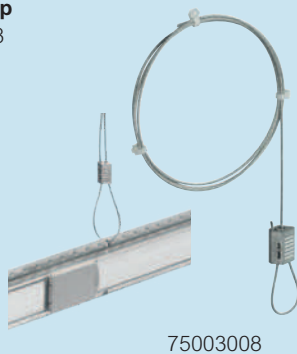
This solution is already supplied as a kit Cat. No. 75003009, consisting of a suspension bracket and a 3 m steel cable



#### Ceiling suspension of LB PLUS Type B

##### 5 m cable with self locking clamp

This accessory Cat. No. 75003008 allows the suspension of the reinforced (Type B) straight lengths using the slots along the reinforcement plate at the top of the bar

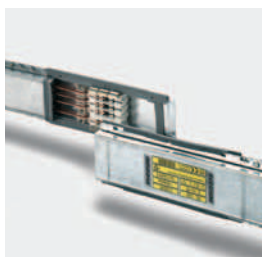
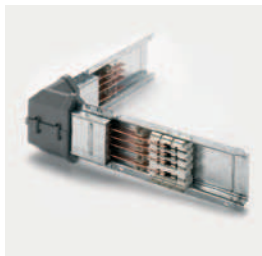
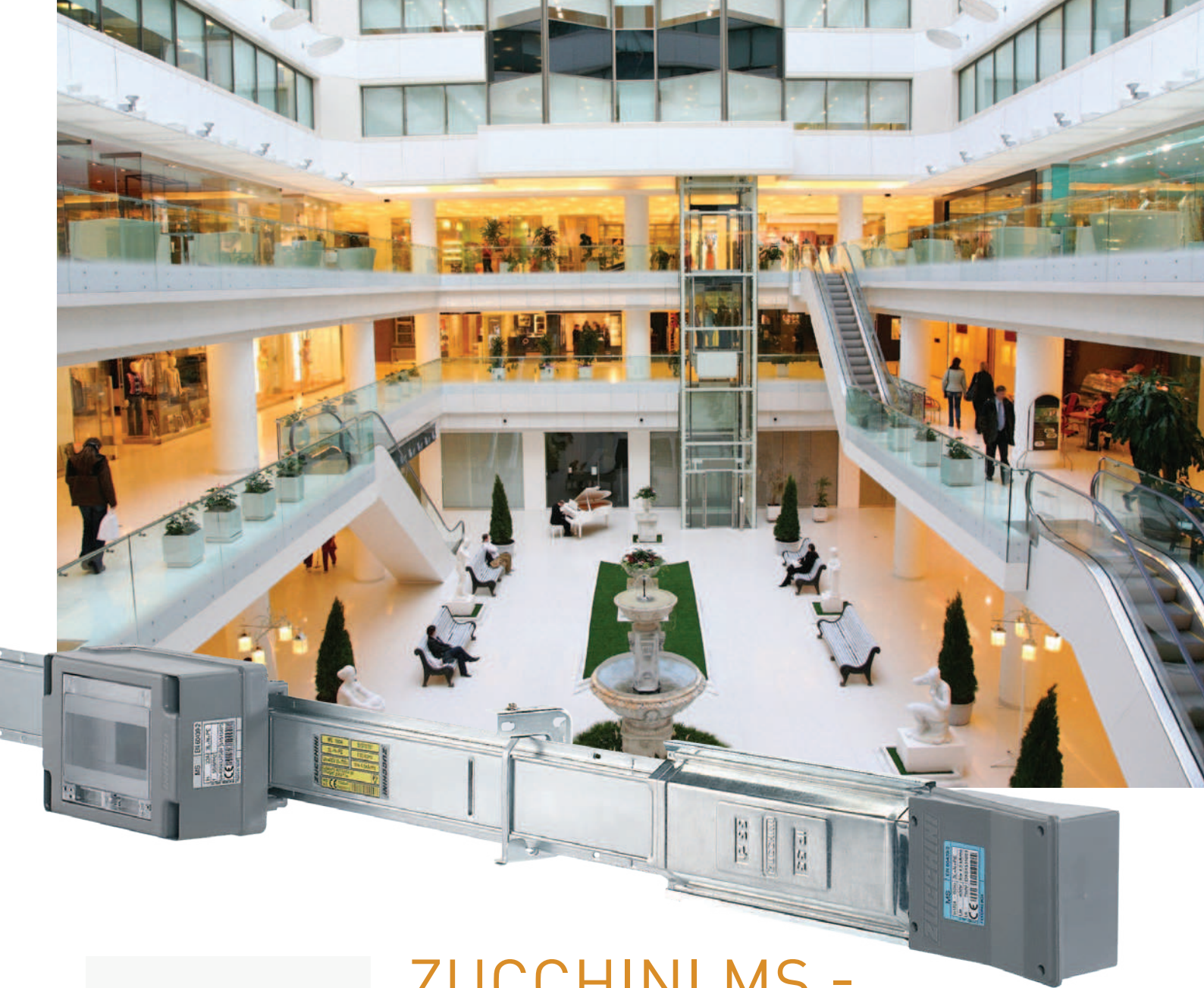


#### ■ Suspension of light fittings

##### LB PLUS - single and double sided

For the suspension of light fittings, use hook Cat. No. 75003001 or ring Cat. No. 75003002  
These accessories can be installed on the brackets used for the suspension of the busbar (Cat. Nos. 75003000 and 75003004).





## ZUCCHINI MS - LOW TO MEDIUM POWER BUSBAR

The flexibility of the Zucchini MS range during planning and installation makes it ideal for frequently changing requirements in small to medium sized commercial and industrial premises.

With versions ranging from 63 A to 160 A, the vast selection of elbows, tees and other accessories make any configuration possible, with bespoke solutions also available on request.

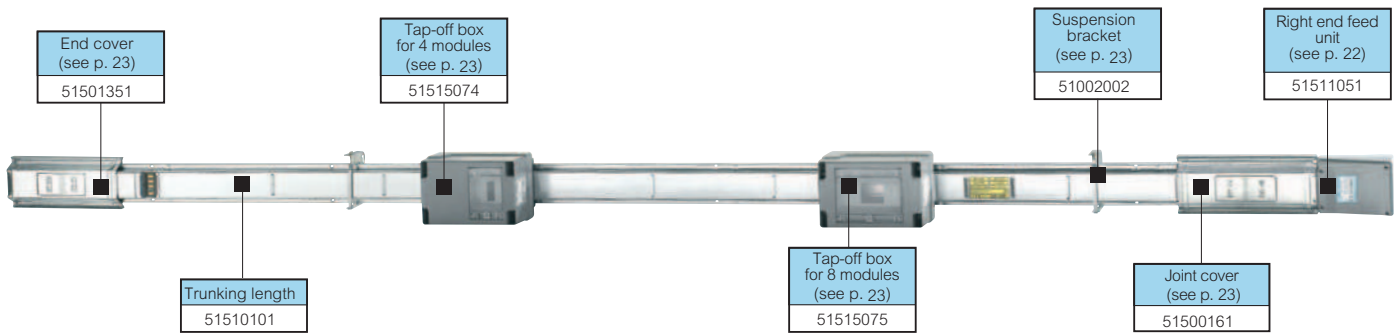
In addition to the wide range of accessories, a choice of tap-off boxes from 16 to 63 A accommodate protection devices up to 16 DIN modules.



To find out more call our technical support team on  
**+44 (0) 370 608 9020**


# MS double sided busbar

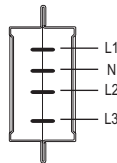
low and medium power 63/100/160 A



 **Dimensions and technical information p. 24**  
**Technical data p. 27**

Conforms to BS EN 61439-6. Casing manufactured from Senzimir quality galvanised steel suitable for use as a protective earth IP 40 as standard, increasing to IP 55 with use of appropriate accessories

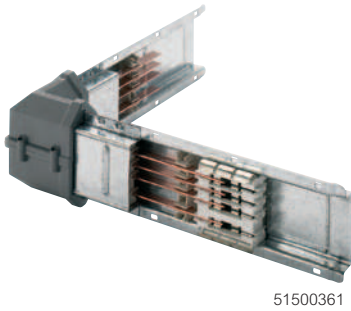
Pack	Cat. Nos.	<b>63 A trunking lengths</b>																					
		Tap-off outlets are spaced every 1.0 m on both sides and are fitted with shutters to prevent accidental contact with live parts Expansion joints are not required																					
																							
		<b>Standard lengths</b>																					
		<table border="1"> <thead> <tr> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>3 + 3</td> <td>7.890</td> </tr> <tr> <td>2</td> <td>2 + 2</td> <td>5.260</td> </tr> <tr> <td>1.5</td> <td>1 + 1</td> <td>3.945</td> </tr> <tr> <td>1</td> <td>1 + 1</td> <td>2.630</td> </tr> <tr> <td>&lt; 1.5</td> <td>–</td> <td>–</td> </tr> <tr> <td>&gt; 1.5</td> <td>–</td> <td>–</td> </tr> </tbody> </table>	Length (m)	Outlet points	Weight (kg)	3	3 + 3	7.890	2	2 + 2	5.260	1.5	1 + 1	3.945	1	1 + 1	2.630	< 1.5	–	–	> 1.5	–	–
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1	51530112																						
1	51530113																						



Pack	Cat. Nos.	<b>160 A trunking lengths</b>																					
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		<table border="1"> <thead> <tr> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>3 + 3</td> <td>9.290</td> </tr> <tr> <td>2</td> <td>2 + 2</td> <td>6.190</td> </tr> <tr> <td>1.5</td> <td>1 + 1</td> <td>4.645</td> </tr> <tr> <td>1</td> <td>1 + 1</td> <td>3.100</td> </tr> <tr> <td>&lt; 1.5</td> <td>–</td> <td>–</td> </tr> <tr> <td>&gt; 1.5</td> <td>–</td> <td>–</td> </tr> </tbody> </table>	Length (m)	Outlet points	Weight (kg)	3	3 + 3	9.290	2	2 + 2	6.190	1.5	1 + 1	4.645	1	1 + 1	3.100	< 1.5	–	–	> 1.5	–	–
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1	51520116																						
1	51520115																						
1	51520114																						
1	51520112																						
1	51520113																						
		<b>Fire barrier kit E120</b>																					
1	515EFB01	External fire barrier kit for use with 63 A, 100 A and 160 A trunking lengths																					
1	515IFB01	Internal fire barrier kit for use with 63 A, 100 A and 160 A trunking lengths																					

Pack	Cat. Nos.	<b>100 A trunking lengths</b>																					
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		<table border="1"> <thead> <tr> <th>Length (m)</th> <th>Outlet points</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>3 + 3</td> <td>7.890</td> </tr> <tr> <td>2</td> <td>2 + 2</td> <td>5.260</td> </tr> <tr> <td>1.5</td> <td>1 + 1</td> <td>3.945</td> </tr> <tr> <td>1</td> <td>1 + 1</td> <td>2.630</td> </tr> <tr> <td>&lt; 1.5</td> <td>–</td> <td>–</td> </tr> <tr> <td>&gt; 1.5</td> <td>–</td> <td>–</td> </tr> </tbody> </table>	Length (m)	Outlet points	Weight (kg)	3	3 + 3	7.890	2	2 + 2	5.260	1.5	1 + 1	3.945	1	1 + 1	2.630	< 1.5	–	–	> 1.5	–	–
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1	51510113																						

# MS double sided busbar trunking components



51500361



51500461



51511151



Dimensions and technical information p. 24-25

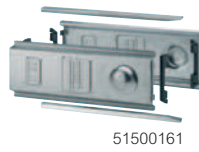
Conforms to BS EN 61439-6. Casing manufactured from Senzimir quality galvanised steel suitable for use as a protective earth IP 40 as standard, increasing to IP 55 with use of appropriate accessories

Pack	Cat. Nos.	Trunking components	Pack	Cat. Nos.	Trunking components (continued)																
1	51530351	<b>Horizontal elbows – right hand</b> Right and left elbows differ because of the position of junction blocks <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>1.6</td> </tr> <tr> <td>100</td> <td>1.6</td> </tr> <tr> <td>160</td> <td>2.6</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63	1.6	100	1.6	160	2.6	1	51530561	<b>Left hand tee – female</b> <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>2.29</td> </tr> <tr> <td>100</td> <td>2.29</td> </tr> <tr> <td>160</td> <td>3.79</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63	2.29	100	2.29	160	3.79
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1	51500361	1	51500562	<b>Left hand tee – male</b> <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>2.29</td> </tr> <tr> <td>100</td> <td>2.29</td> </tr> <tr> <td>160</td> <td>3.79</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63	2.29	100	2.29	160	3.79									
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1	51520351	1	51520561	<b>Crossovers</b> <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>2.29</td> </tr> <tr> <td>100</td> <td>2.29</td> </tr> <tr> <td>160</td> <td>3.79</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63	2.29	100	2.29	160	3.79									
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1	51500362	1	51500564	<b>Feed units</b> <b>End feed units IP 55</b> IP 55 protection as standard. Supplied with cable clamp and terminals for 35 mm (MS 63/100) and 70 mm (MS 160) cables Switched-end feed units are also available with in-line bus switches on request <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>Right 63-100</td> <td>1.732</td> </tr> <tr> <td>Left 63-100</td> <td>1.874</td> </tr> <tr> <td>Right 160</td> <td>2.218</td> </tr> <tr> <td>Left 160</td> <td>2.360</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	Right 63-100	1.732	Left 63-100	1.874	Right 160	2.218	Left 160	2.360							
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1	51520361	1	51520581	<b>Centre feed units IP 55</b> <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63-100</td> <td>3.5</td> </tr> <tr> <td>160</td> <td>5.0</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63-100	3.5	160	5.0											
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1	51500461	<b>Vertical elbows – left hand</b> <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>1.6</td> </tr> <tr> <td>100</td> <td>1.6</td> </tr> <tr> <td>160</td> <td>2.6</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63	1.6	100	1.6	160	2.6	1	51500661	<b>Right hand tees – female</b> <table border="1"> <thead> <tr> <th>Rating (A)</th> <th>Weight (kg)</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>2.29</td> </tr> <tr> <td>100</td> <td>2.29</td> </tr> <tr> <td>160</td> <td>3.79</td> </tr> </tbody> </table>	Rating (A)	Weight (kg)	63	2.29	100	2.29	160	3.79
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# MS double sided busbar

## tap-offs and accessories



Tap-offs can be supplied pre-wired and fitted with protective devices

Contact us on +44 (0) 345 600 6266



Dimensions and technical information p. 25-26

Tap-off boxes can be used to connect and energise one and three phase loads up to 63 A. Tap-offs can be inserted and removed when the busbar is energised and when the fixture is under load, up to a capacity 32 A. Compliant with IEC 60695-2-10 with V1 self-extinguishing degree (UL 94) Standard IP 55 degree of protection

Pack	Cat. Nos.	Tap-off boxes IP 55
		Energy withstand 400·10 <sup>3</sup> A <sup>2</sup> S Totally insulated tap-off box Max. cable size 25 mm <sup>2</sup> Max. power losses 10 W
1	51515071	<b>Empty tap-off box with DIN (4 mod.)</b> Rating (A)   Weight (kg) 32   0·68
1	51515072	<b>Tap-off box for (4 mod.) DIN</b> Rating (A)   Weight (kg) 32   0·73
1	51515073	Max. power losses 16 W <b>Empty tap-off box (8 mod)</b> Rating (A)   Weight (kg) 32   0·93
1	51515074	<b>Tap-off box (4 mod) DIN (long version)</b> Rating (A)   Weight (kg) 32   0·96
1	51515075	<b>Tap-off box (8 mod) DIN (long version)</b> Rating (A)   Weight (kg) 32   0·99

Pack	Cat. Nos.	Tap-off boxes with isolating device on the cover
1	51515051	<b>Tap-off box with CH10 fuseholder (10·3 x 38)</b> 10·3 x 38 fuses not included Rating (A)   Weight (kg) 16   0·908
1	51515052	<b>Tap-off box with CH14 fuseholder (14 x 51)</b> 14 x 51 fuses not included Rating (A)   Weight (kg) 50   0·908
1	51515057	<b>63 A tap-off boxes</b> Energy withstand 400·10 <sup>3</sup> A <sup>2</sup> S Max power losses 20W Tap-off box with transparent cover Weight 1·1 kg
1	51515056	Tap-off box with transparent cover and hinged door (up to 4 mod.) Weight 1·2 kg
1	51515067	Tap-off box with hinged door (up to 7 mod.) Weight 1·1 kg
1	51515058	<b>Tap-off box with hinged door (up to 16 mod.)</b> Energy withstand 400·10 <sup>3</sup> A <sup>2</sup> S Max power losses 20W Weight 2·5 kg

Pack	Cat. Nos.	Accessories
1	51501351	<b>End cover IP 55</b> End covers are fitted to the last length in each run to maintain IP 55 protection Weight 0·57 kg
1	51500161	<b>Joint cover IP 55</b> One for each joint Weight 0·788 kg
1	51500160	<b>Tap-off outlet cover IP 55</b> 6 per 3 m straight length Weight 0·061 kg
1	51002002	<b>Suspension bracket</b> Universal fixing brackets enable trunking to be either suspended or wall mounted 1 per 2 m Weight 0·1 kg

# MS double sided busbar

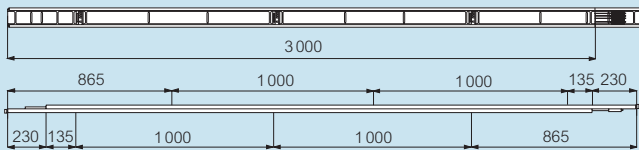
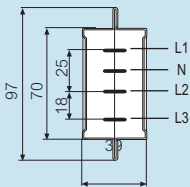
## technical information

### General features

MS is fully compliant with IEC 61439-6 (BS EN 61439-6). Specifically, the rated current of the Zucchini busbar trunking system is always referred to the average ambient temperature of 40°C (NB : the standard requires 35°C), thus offering the market suitably oversized products

### Trunking lengths

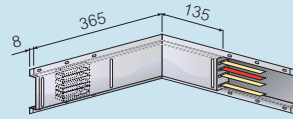
- The components and the features of the MS trunking lengths are :
- a casing made of Senzimir quality galvanised steel, with a sheet-metal thickness that allows its use as the protective earth (PE) and ensures the electrical continuity during mounting with no added accessories
  - section bar dimensions : 39 x 97 mm
  - number of conductors : 4 with the same section 3P + N available for capacities 63 A, 100 A and 160 A
  - separation between the conductors using plastic insulating devices, reinforced with 20% of glass fibres, which ensure a V1 self-extinguishing degree (according to UL94) and are in compliance with the glow-wire test according to IEC 60695-2-10
  - tap-off outlets with a constant centre distance of 1 m on both sides of the busbar (3 + 3 outlets every 3 m), set up for connection to tap-off boxes
  - an electric joint block, with silver-plated copper contacts for automatically connecting live parts and the PE (protective earth) Quick connection between straight lengths. One operation provides an electrical and mechanical connection, whilst at the same time, IP 40 protection is guaranteed. The upgrade to IP 55 is easily achieved by adding joint covers and outlet covers. Flame retardant in compliance with the IEC 60332-3 standard
  - trunking lengths with fire barrier (internal + external) are used when fire-resistant walls need to be passed through. The lengths fitted with a fire barrier have been lab-tested (in accordance with DIN 4102-9 and EN 1366-3) in order to confirm that, if correctly installed, they will maintain the essential fire-resistant features of the wall
  - trunking lengths with thrust unit are provided with a device which blocks the conductors from slipping when supporting the weight of the riser (when installed vertically). This type of length is required for 10 m riser intervals



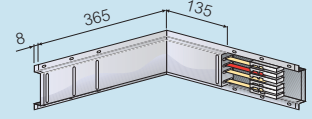
### Trunking components

IP 55 (according to BS EN 60529)

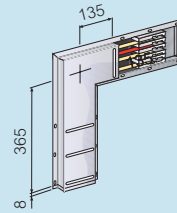
#### Horizontal elbow - right hand



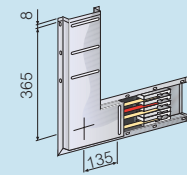
#### Horizontal elbow - left hand



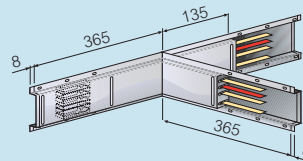
#### Vertical elbow - right hand



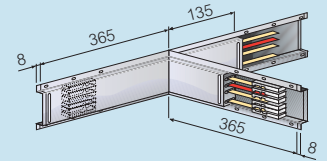
#### Vertical elbow - left hand



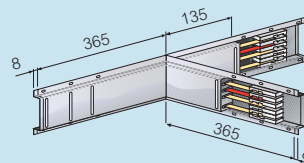
#### Right hand tees - male



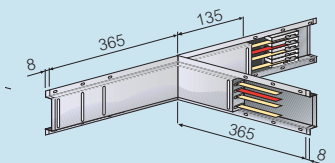
#### Right hand tees - female



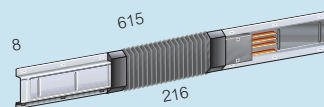
#### Left hand tees - female



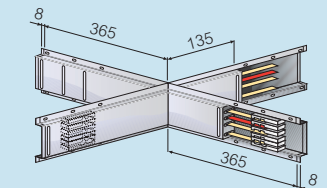
#### Left hand tees - male



#### Flexible elbow



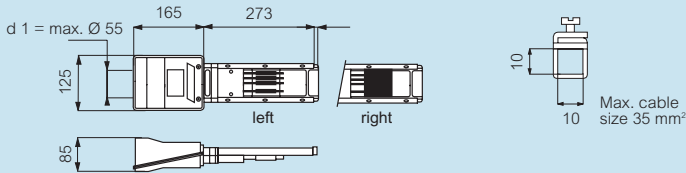
#### Crossovers



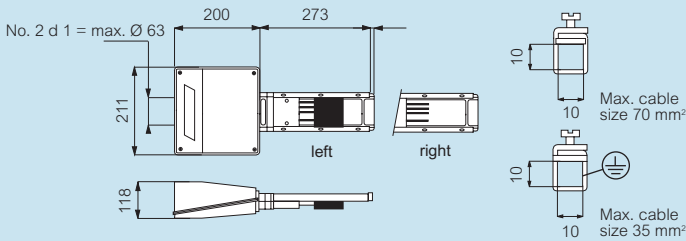
### ■ End feed units

Installation is carried out with a quick junction connection. The feed units have terminals for the connection of copper cables for sections of up to 35 mm<sup>2</sup> for the 63/100 A feed unit and 70 mm<sup>2</sup> for the 160 A feed unit. The entrance point of the cables is positioned at the end of the feed unit.

63 – 100 A

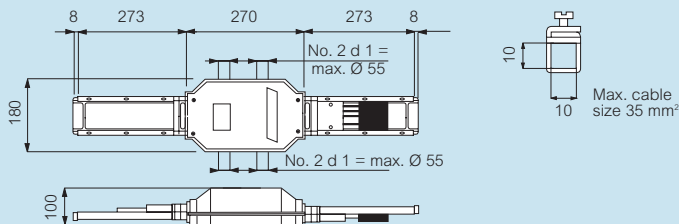


160 A

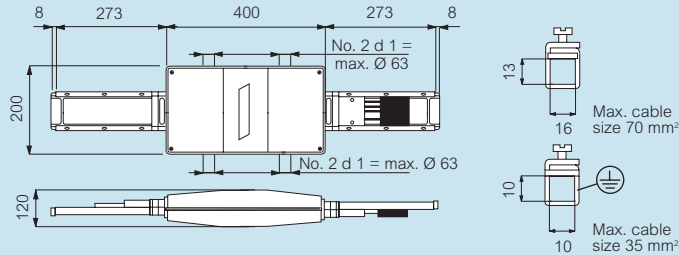


### ■ Centre feed units

63 – 100 A



160 A



### Tap-off boxes

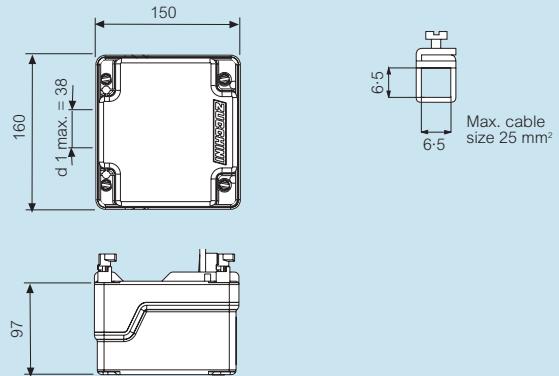
Used to connect and energise single phase and three phase loads up to 63 A. Features include :

- the PE contact (protective earth) is the first to make an electrical connection when inserting the box into the outlet and it is the last to disconnect when removing
- compliance with all insulating plastic components according to the glow-wire test (IEC 60695-2-10) with V1 self-extinguishing degree (UL94)
- standard IP 55 degree of protection without using additional accessories
- can be inserted and removed when the busbar is energised and when the fixture is under load, up to a capacity of 32 A

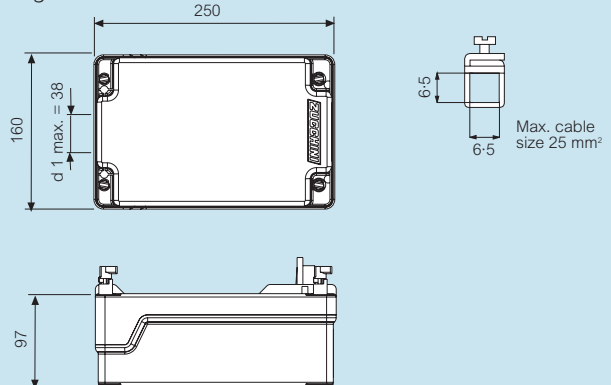
These boxes are available in a wide range of versions :

- 63 A empty boxes (only with a terminal board for connecting cables), with an internal DIN rail and transparent door
- 16 A - available with a set of three cylindrical fuse carriers (10.3 x 38 mm)
- 16/32 A - available with a set of three cylindrical fuse carriers - DIAZED (D01 : 16 A; D02 : 32 A);
- 50 A - available with cylindrical fuse carriers (14 x 51 mm)
- 63 A - available with 4-7-16 DIN mod.
- 16 to 63 A - available with a disconnection device integral with the cover

Standard version



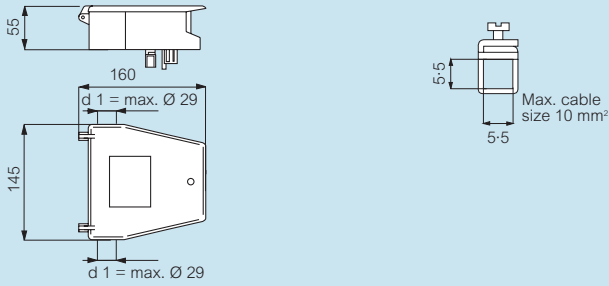
Long version



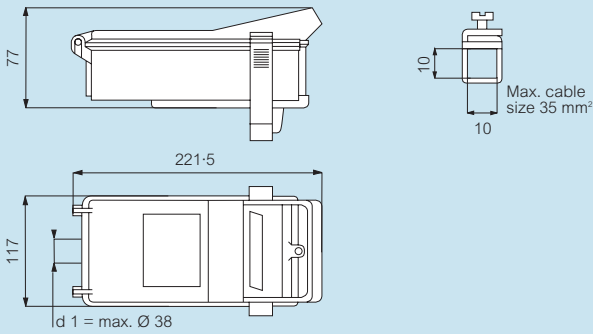
# MS double sided busbar

technical information

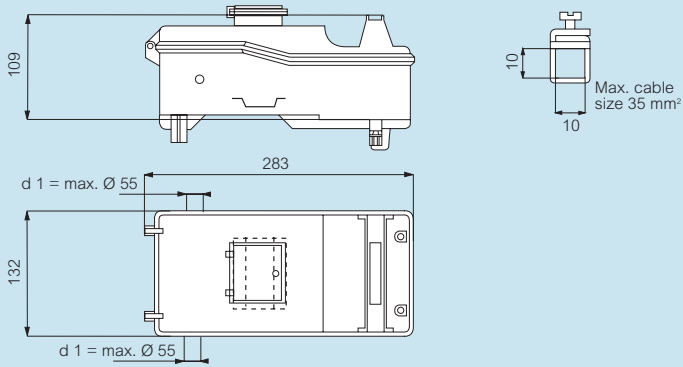
## ■ Tap-off box with CH10 fuseholder (10-3 x 38)



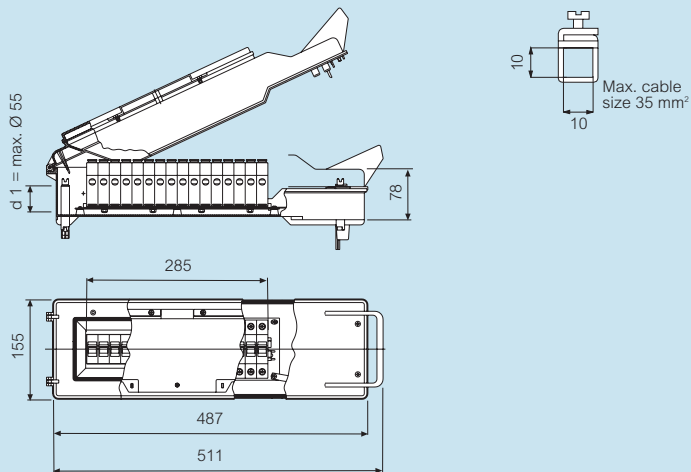
## ■ Tap-off box with CH14 fuseholder (14 x 51)



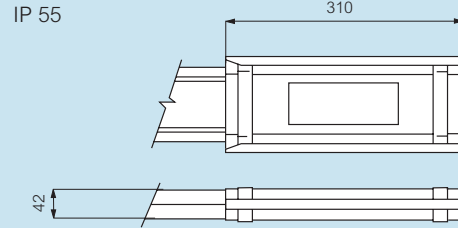
## ■ 63 A tap-off boxes



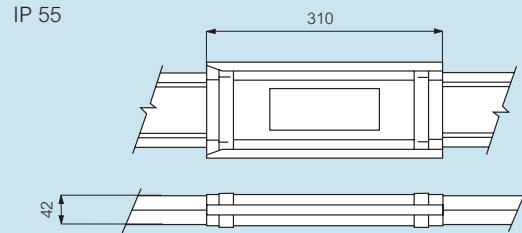
## Tap-off box with hinged door (up to 16 modules DIN)



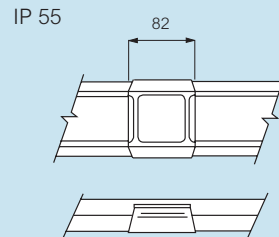
## ■ End stop



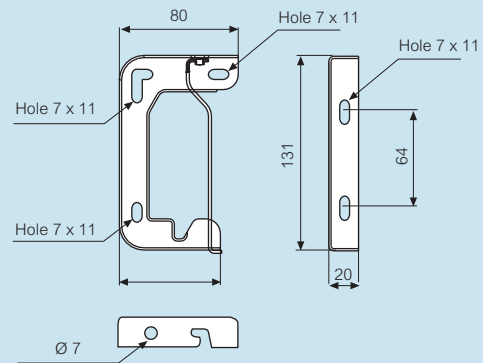
## ■ Joint cover



## ■ Tap-off outlet cover



## ■ Suspension bracket



All dimensions (mm) are nominal

# MS double sided busbar

## technical data

**Complies to :**  
**IEC 61439-6 (BS EN 61439-6)**

Suitable for the following climates :  
Constant humid climate (IEC 60068 2 – 11)  
Cyclical humid climate (IEC 60068 2 – 30)

**Short circuit protection for Zucchini product ranges (In≤100 A)**

Zucchini busbar systems with a nominal current less or equal to 100 A (LB PLUS / MS 63 and 100 A) are correctly protected against short circuit effects through an MCB (Miniature Circuit Breaker) with a nominal current less or equal to the one of the busbar  
This protection is assured up to MCB short circuit withstand

The busbar trunking systems LB PLUS / MS 63 and 100 A are flame retardant in compliance with IEC 60332-3

Rating (A)		63	100	160
Live conductors	No.	4	4	4
Casing overall dimension	A x B (mm)	39 x 97	39 x 97	39 x 97
Rated current	In (A)	63	100	160
Cross-section of conductors (3P + N)	S (mm <sup>2</sup> )	26	26	39
Cross-section of protective conductor eq. Cu	SPE (mm <sup>2</sup> )	21	21	21
Operational voltage	Ue (V)	400	400	400
Insulation voltage	Ui (V)	750	750	750
Rated frequency	f (Hz)	50/60	50/60	50/60
Rated short-time current (0.1 s)	Icw (kA)rms	3.5	5	5.5
Peak current	Ipk (kA)	5.25	10	10
Maximum thermal limit	I <sup>2</sup> t (A <sup>2</sup> s x 10 <sup>6</sup> )	1.225	2.500	3.025
Phase resistance	R20 (mΩ/m)	1.250	0.837	0.478
Phase reactance (50Hz)	X (mΩ/m)	0.366	0.247	0.247
Phase impedance	Z (mΩ/m)	1.302	0.873	0.538
Resistance of the protective bar	RPE (mΩ/m)	0.857	0.857	0.857
Reactance of the protective bar (50Hz)	XPE (mΩ/m)	0.102	0.102	0.102
Resistance of the fault loop	Ro (mΩ/m)	2.11	1.69	1.34
Reactance of the fault loop (50Hz)	Xo (mΩ/m)	0.468	0.349	0.349
Impedance of the fault loop	Zo (mΩ/m)	2.16	1.73	1.38
$\Delta V_{1F} = \frac{1}{2} (2 R_{20} \cos\varphi + 2 X \sin\varphi)$	$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 0.70}{1.102}$	0.806	0.547	
	$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 0.75}{1.148}$	0.842	0.546	
	$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 0.80}{1.191}$	0.875	0.579	
Voltage drop with distributed load (k)	$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 0.85}{1.231}$	0.906	0.591	
	$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 0.90}{1.264}$	0.933	0.600	
	$\Delta V_{3F} = \frac{\sqrt{3}}{2} (R_{20} \cos\varphi + X \sin\varphi)$	$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 0.95}{1.288}$	0.954	0.602
$\frac{\Delta V (V/m/A)10^{-3} \cos\varphi = 1.00}{1.251}$		0.934	0.563	
Straight length weight	p (kg/m)	2.0	2.5	2.8
Fire load	(kWh/m)	1.64	1.64	1.64
Protection degree	IP	40/55	40/55	40/55
Losses for the Joule effect at full load	P (W/m)	17.21	32.34	49.93
Min./max. ambient temperature	t (°C)	-5/+50	-5/+50	-5/+50

### Temperature rating schedule

Mean room temperature (°C)	15	20	25	30	35	40	45	50	55	60
K1 factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

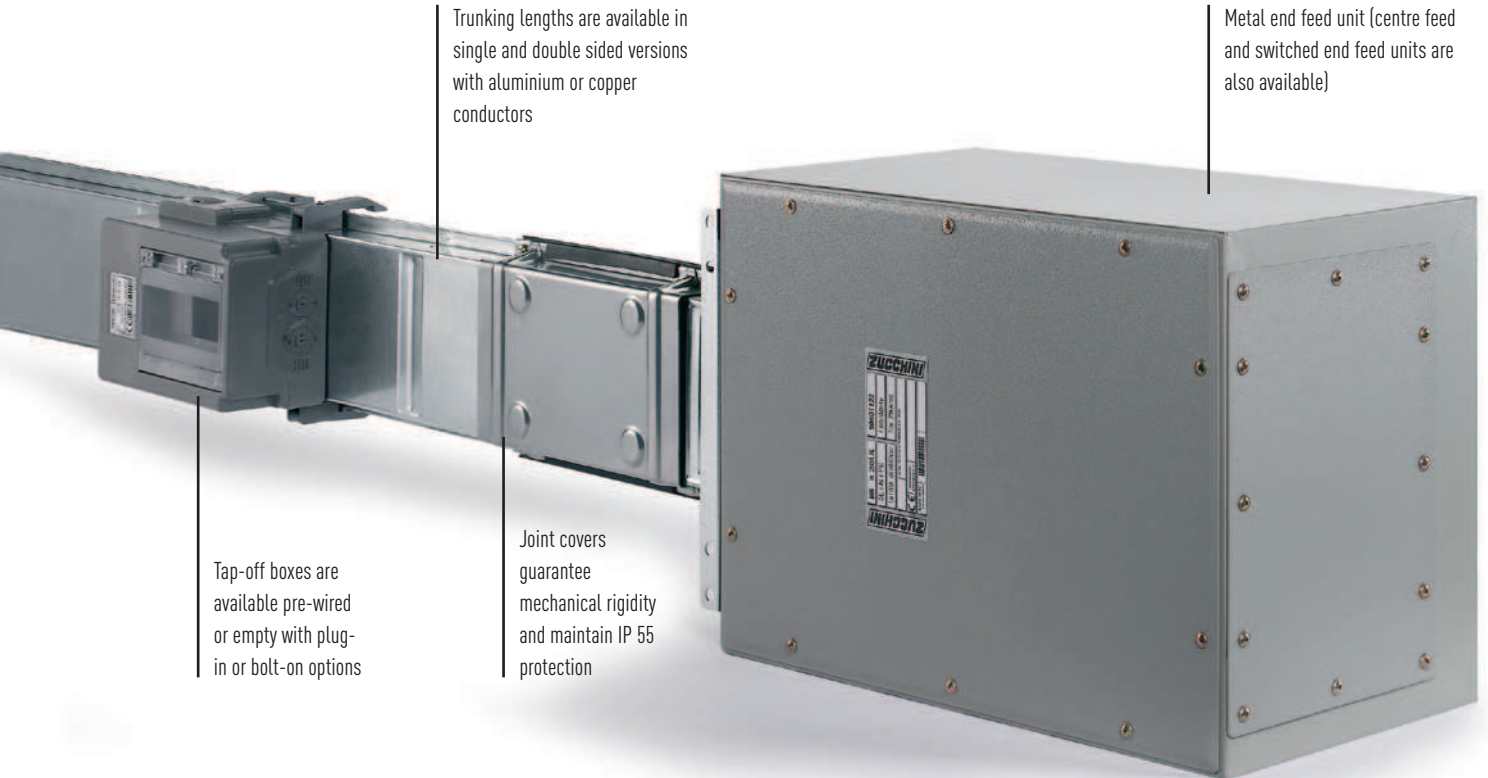
Multiplier coefficient of nominal rating for room temperature values different from 40°C

# ZUCCHINI MR - MEDIUM RATING BUSBAR

Available in sizes from 160 to 1000 A, MR (medium rating) busbar is ideal for power distribution in medium to large installations and rising mains in commercial buildings.

MR is available with aluminium or copper conductors and has a large range of tap-off boxes from 16 to 1000 A, allowing the supply and protection of a wide range of loads using devices such as fuses, MCBs and MCCBs.





Trunking lengths are available in single and double sided versions with aluminium or copper conductors

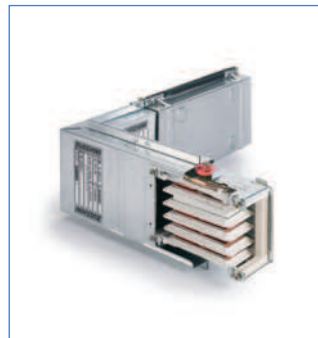
Metal end feed unit (centre feed and switched end feed units are also available)

Tap-off boxes are available pre-wired or empty with plug-in or bolt-on options

Joint covers guarantee mechanical rigidity and maintain IP 55 protection



SWITCHBOARD - TRANSFORMER FEED UNIT



HORIZONTAL ELBOW



VERTICAL ELBOW



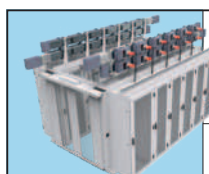
TAP-OFF BOXES



## Lowering lifetime installation costs

MR features a monobloc electrical jointing system. The shearhead bolt on the monobloc allows for fast assembly of the run and guarantees long-term reliability and safety.

As well as being quick to install, Zucchini MR busbar is easy to upgrade if existing installations need to be modified. The vast choice of elbows, tees and other accessories make any configuration possible, with bespoke solutions also available on request.

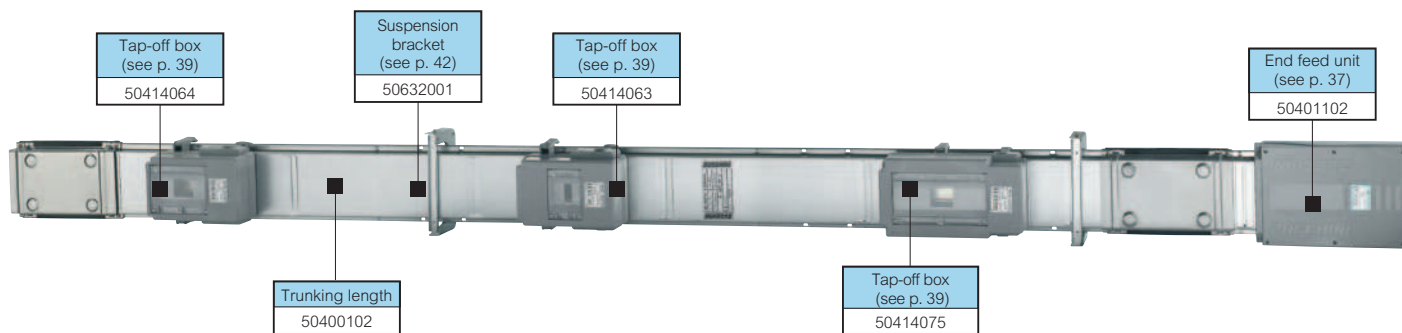


For information on data centre busbar

Contact us on +44 (0) 370 608 9020

# MR medium rating busbar

medium power 160 - 1000 A



Dimensions and technical information **p. 43**

Measuring bespoke dimensions **p. 49**

Technical data **p. 52-56**

IP 55 (according to BS EN 60529)

Flame retardant in compliance with IEC 60332-3. Fully compliant with IEC 61439-6 (BS EN 61439-6)

Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)

Pack	Cat. Nos.		Trunking lengths – 3 m		
			For vertical runs or riser applications. Special lengths between 400 mm and 3 m are available upon request		
			<b>With 3 + 3 outlets</b>		
			Tap-off outlets are spaced every 1.0 m on both sides (6 positions per 3 m length)		
				Weight (kg)	
	Aluminium	Copper	Rating (A)	Aluminium	Copper
1	50400101		160	19.9	–
1	50400102	55400102	250	20.9	25.7
1	50400103	55400103	315	22.8	28.1
1	50400104	55400104	400	33.8	36.9
1	50400108		500	37.5	–
1	50400105	55400105	630	41.7	56.0
1	50400106	55400106	800	44.3	72.1
1	50400107 <sup>1</sup>	55400107	1000	46.8	83.7
			<b>With 5 outlets on one side</b>		
			Suitable for rising mains (see p. 50)		
				Weight (kg)	
			Rating (A)	Aluminium	Copper
1	50400251		160	19.9	–
1	50400252	55400252	250	20.9	25.7
1	50400253	55400253	315	22.8	28.1
1	50400254	55400254	400	33.8	36.9
1	50400258		500	37.5	–
1	50400255	55400255	630	41.7	56.0
1	50400256	55400256	800	44.3	72.1
1	50400257 <sup>1</sup>	55400257	1000	46.8	83.7
			<b>Without outlets</b>		
			Feeder lengths. A tap-off point is only possible on the junction between two lengths (see bolt-on tap-off boxes p. 41)		
				Weight (kg)	
			Rating (A)	Aluminium	Copper
1	50400241		160	19.9	–
1	50400242	55400242	250	20.9	25.7
1	50400243	55400243	315	22.8	28.1
1	50400244	55400244	400	33.8	36.9
1	50400248		500	37.5	–
1	50400245	55400245	630	41.7	56.1
1	50400246	55400246	800	44.3	72.1
1	50400247 <sup>1</sup>	55400247	1000	46.8	83.7

Pack	Cat. Nos.		Trunking lengths – bespoke dimensions	
			Please specify required length when ordering (see p. 49 – how to measure bespoke dimensions)	
			<b>1501 to 2999 mm lengths with 2 + 2 outlets</b>	
			Tap-off outlets in fixed position on both sides	
				Rating (A)
1	Aluminium	Copper	50400151	160
1	50400152	55400152	50400153	250
1	50400153	55400153	50400154	315
1	50400154	55400154	50400158	400
1	50400158		50400155	500
1	50400155	55400155	50400156	630
1	50400156	55400156	50400157 <sup>1</sup>	800
1	50400157 <sup>1</sup>	55400157		1000
			<b>1501 to 2999 mm lengths without outlets</b>	
			Feeder lengths. A tap-off point is only possible on the junction between two lengths (see bolt-on tap-off boxes p. 41)	
				Rating (A)
1	50400121		50400122	160
1	50400122	55400122	50400123	250
1	50400123	55400123	50400124	315
1	50400124	55400124	50400128	400
1	50400128		50400125	500
1	50400125	55400125	50400126	630
1	50400126	55400126	50400127 <sup>1</sup>	800
1	50400127 <sup>1</sup>	55400127		1000

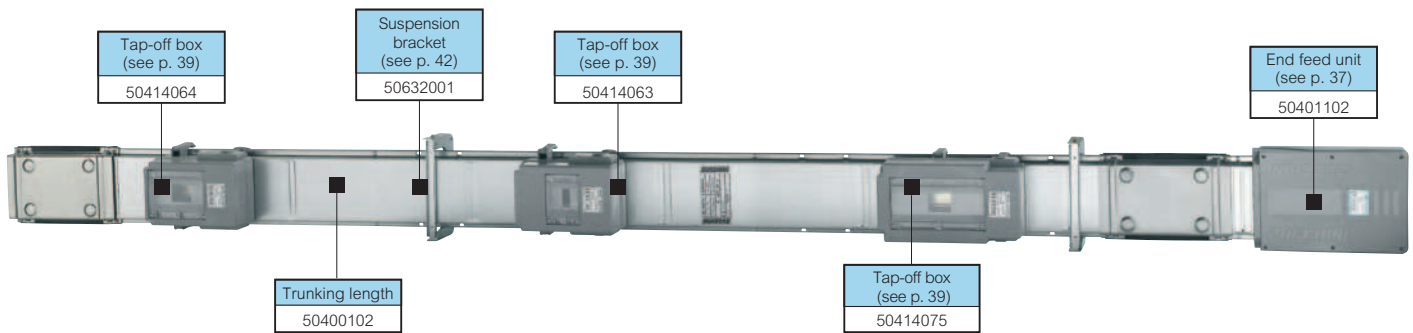
Key : How to select the correct configuration and finish  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised 2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised 3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required

1 : The 1000 A aluminium is supplied painted RAL 7035 as standard



# MR medium rating busbar

medium power 160 - 1000 A



Dimensions and technical information **p. 43-44**  
 Measuring bespoke dimensions **p. 49**  
 Technical data **p. 52-56**

IP 55 (according to BS EN 60529)  
 Flame retardant in compliance with IEC 60332-3. Fully compliant with IEC 61439-6 (BS EN 61439-6)  
 Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)

Pack	Cat. Nos.		Rating (A)
<b>Trunking lengths – bespoke dimensions (continued)</b>			
Please specify required length when ordering (see p. 49 – how to measure bespoke dimensions)			
<b>1 000 to 1 500 mm lengths with 1 + 1 outlets</b>			
Tap-off outlets in fixed position on both sides			
	Aluminium	Copper	Rating (A)
1	50400141		160
1	50400142	55400142	250
1	50400143	55400143	315
1	50400144	55400144	400
1	50400148		500
1	50400145	55400145	630
1	50400146	55400146	800
1	50400147 <sup>1</sup>	55400147	1 000
<b>600 to 1 500 mm lengths without outlets</b>			
Feeder length. A tap-off point is only possible on the junction between two lengths (see bolt-on tap-off boxes p. 41)			
			Rating (A)
1	50400111		160
1	50400112	55400112	250
1	50400113	55400113	315
1	50400114	55400114	400
1	50400118		500
1	50400115	55400115	630
1	50400116	55400116	800
1	50400117 <sup>1</sup>	55400117	1 000

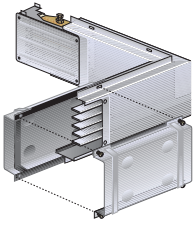
Pack	Cat. Nos.		Rating (A)
<b>Accessories for trunking lengths</b>			
<b>External fire barriers</b>			
Please specify the required position of the external fire barrier when ordering (see p. 44)			
	Aluminium	Copper	Rating (A)
1	554EFB01		160
1	554EFB01	554EFB01	250
1	554EFB01	554EFB01	315
1	554EFB02	554EFB01	400
1	554EFB02		500
1	554EFB02	554EFB02	630
1	554EFB02	554EFB02	800
1	554EFB02	554EFB02	1 000
<b>Internal fire barriers</b>			
Please specify the required position of the internal fire barrier when ordering (see p. 44)			
			Rating (A)
1	554IFB01		160
1	554IFB02	554IFB01	250
1	554IFB03	554IFB02	315
1	554IFB04	554IFB05	400
1	554IFB06		500
1	554IFB07	554IFB04	630
1	554IFB08	554IFB06	800
1	554IFB09	554IFB07	1 000
<b>Tap-off outlet cover IP 55</b>			
1	50403601		Suitable for all MR versions 6 for each length Weight : 0.10 kg

1 : The 1 000 A aluminium is supplied painted RAL 7035 as standard

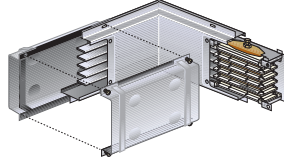
**Key :** How to select the correct configuration and finish  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised    2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised    3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required

# MR medium rating busbar

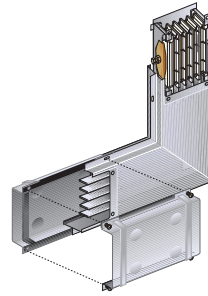
## single elbows



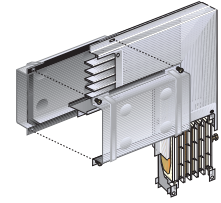
Horizontal elbow – right hand



Horizontal elbow – left hand



Vertical elbow – right hand



Vertical elbow – left hand



Dimensions and technical information **p. 44**  
Measuring bespoke dimensions **p. 49**

MR is fully compliant with IEC 61439-6 (BS EN 61439-6)  
Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)  
Angles are 90° as standard. Other angles available on request. IP 55 (according to BS EN 60529)

Pack	Cat. Nos.		Single elbows – standard dimensions (300 + 300 mm)		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400301		160	8.1	–
1	50400302	55400302	250	8.2	9.2
1	50400303	55400303	315	8.4	9.6
1	50400304	55400304	400	14.5	11.0
1	50400308		500	14.9	–
1	50400305	55400305	630	15.4	18.7
1	50400306	55400306	800	15.7	21.4
1	50400307 <sup>1</sup>	55400307	1000	16.0	23.3
			<b>Horizontal elbow – left hand</b>		
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400311		160	8.1	–
1	50400312	55400312	250	8.2	9.2
1	50400313	55400313	315	8.4	9.6
1	50400314	55400314	400	14.5	11.0
1	50400318		500	14.9	–
1	50400315	55400315	630	15.4	18.7
1	50400316	55400316	800	15.7	21.4
1	50400317 <sup>1</sup>	55400317	1000	16.0	23.3
			<b>Vertical elbow – right hand</b>		
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400401		160	8.1	–
1	50400402	55400402	250	8.2	9.2
1	50400403	55400403	315	8.4	9.6
1	50400404	55400404	400	14.5	11.0
1	50400408		500	14.9	–
1	50400405	55400405	630	15.4	18.7
1	50400406	55400406	800	15.7	21.4
1	50400407 <sup>1</sup>	55400407	1000	16.0	23.3
			<b>Vertical elbow – left hand</b>		
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400411		160	8.1	–
1	50400412	55400412	250	8.2	9.2
1	50400413	55400413	315	8.4	9.6
1	50400414	55400414	400	14.5	11.0
1	50400418		500	14.9	–
1	50400415	55400415	630	15.4	18.7
1	50400416	55400416	800	15.7	21.4
1	50400417 <sup>1</sup>	55400417	1000	16.0	23.3

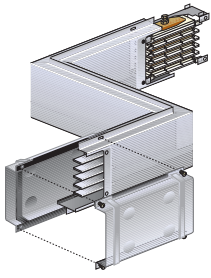
Pack	Cat. Nos.		Single elbows – bespoke dimensions	
	Aluminium	Copper	Please specify required length when ordering	
			<b>Horizontal elbow – right hand</b>	
			250 to 900 mm per arm	
			Rating (A)	
1	50400321		160	
1	50400322	55400322	250	
1	50400323	55400323	315	
1	50400324	55400324	400	
1	50400328		500	
1	50400325	55400325	630	
1	50400326	55400326	800	
1	50400327 <sup>1</sup>	55400327	1000	
			<b>Horizontal elbow – left hand</b>	
			250 to 900 mm per arm	
			Rating (A)	
1	50400331		160	
1	50400332	55400332	250	
1	50400333	55400333	315	
1	50400334	55400334	400	
1	50400338		500	
1	50400335	55400335	630	
1	50400336	55400336	800	
1	50400337 <sup>1</sup>	55400337	1000	
			<b>Vertical elbow – right hand</b>	
			300 to 900 mm per arm	
			Rating (A)	
1	50400421		160	
1	50400422	55400422	250	
1	50400423	55400423	315	
1	50400424	55400424	400	
1	50400428		500	
1	50400425	55400425	630	
1	50400426	55400426	800	
1	50400427 <sup>1</sup>	55400427	1000	
			<b>Vertical elbow – left hand</b>	
			300 to 900 mm per arm	
			Rating (A)	
1	50400431		160	
1	50400432	55400432	250	
1	50400433	55400433	315	
1	50400434	55400434	400	
1	50400438		500	
1	50400435	55400435	630	
1	50400436	55400436	800	
1	50400437 <sup>1</sup>	55400437	1000	

Key : How to select the correct configuration and finish  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised 2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised 3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required

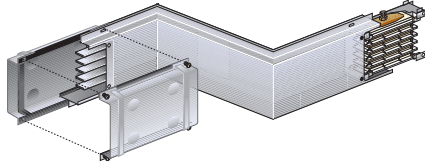
1 : The 1000 A aluminium is supplied painted RAL 7035 as standard

# MR medium rating busbar

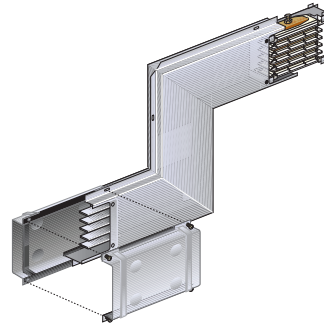
## double elbows



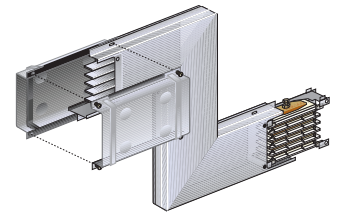
Horizontal elbow – right + left hand



Horizontal elbow – left + right hand



Vertical elbow – right + left hand



Vertical elbow – left + right hand

Dimensions and technical information **p. 44**  
Measuring bespoke dimensions **p. 49**

MR is fully compliant with IEC 61439-6 (BS EN 61439-6)  
Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)  
Angles are 90° as standard. Other angles available on request. IP 55 (according to BS EN 60529)

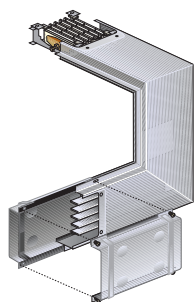
Pack	Cat. Nos.		Double elbows – standard dimensions (300 + 300 + 300 mm)			Pack	Cat. Nos.		Double elbows – bespoke dimensions		
			<b>Horizontal elbow – right + left hand</b>						Please specify required length when ordering		
	Aluminium	Copper	Rating (A)	Weight (kg)					<b>Horizontal elbow – right + left hand</b>		
1	50400341		160	Aluminium	Copper	1	Aluminium	Copper	250 to 900 mm per arm		
1	50400342	55400342	250	10-29	–	1	50400361		Rating (A)		
1	50400343	55400343	315	10-55	12-23	1	50400362	55400362	160		
1	50400344	55400344	400	11-06	12-97	1	50400363	55400363	250		
1	50400348		500	18-37	15-72	1	50400364	55400364	315		
1	50400345	55400345	630	19-50	–	1	50400368		400		
1	50400346	55400346	800	20-55	25-77	1	50400365	55400365	500		
1	50400347 <sup>1</sup>	55400347	1000	21-20	30-88	1	50400366	55400366	630		
				21-80	34-55	1	50400367 <sup>1</sup>	55400367	800		
			<b>Horizontal elbow – left + right hand</b>						1000		
			Rating (A)	Weight (kg)					<b>Horizontal elbow – left + right hand</b>		
1	50400351		160	Aluminium	Copper	1	50400371		250 to 900 mm per arm		
1	50400352	55400352	250	10-29	–	1	50400372	55400372	Rating (A)		
1	50400353	55400353	315	10-55	12-23	1	50400373	55400373	160		
1	50400354	55400354	400	11-06	12-97	1	50400374	55400374	250		
1	50400358		500	18-37	15-72	1	50400377 <sup>1</sup>	55400377	315		
1	50400355	55400355	630	19-50	–	1			400		
1	50400356	55400356	800	20-55	25-77	1			500		
1	50400357 <sup>1</sup>	55400357	1000	21-20	30-88	1			630		
				21-80	34-55	1			800		
			<b>Vertical elbow – right + left hand</b>						1000		
			Rating (A)	Weight (kg)					<b>Vertical elbow – right + left hand</b>		
1	50400441		160	Aluminium	Copper	1	50400461		300 to 900 mm per arm		
1	50400442	55400442	250	10-29	–	1	50400462	55400462	Rating (A)		
1	50400443	55400443	315	10-55	12-23	1	50400463	55400463	160		
1	50400444	55400444	400	11-06	12-97	1	50400464	55400464	250		
1	50400448		500	18-37	15-72	1	50400468		315		
1	50400445	55400445	630	19-50	–	1	50400465	55400465	400		
1	50400446	55400446	800	20-55	25-77	1	50400466	55400466	500		
1	50400447 <sup>1</sup>	55400447	1000	21-20	30-88	1	50400467 <sup>1</sup>	55400467	630		
				21-80	34-55	1			800		
			<b>Vertical elbow – left + right hand</b>						1000		
			Rating (A)	Weight (kg)					<b>Vertical elbow – left + right hand</b>		
1	50400451		160	Aluminium	Copper	1	50400471		300 to 900 mm per arm		
1	50400452	55400452	250	10-29	–	1	50400472	55400472	Rating (A)		
1	50400453	55400453	315	10-55	12-23	1	50400473	55400473	160		
1	50400454	55400454	400	11-06	12-97	1	50400474	55400474	250		
1	50400458		500	18-37	15-72	1	50400477 <sup>1</sup>	55400477	315		
1	50400455	55400455	630	19-50	–	1			400		
1	50400456	55400456	800	20-55	25-77	1			500		
1	50400457 <sup>1</sup>	55400457	1000	21-20	30-88	1			630		
				21-80	34-55	1			800		

**Key :** How to select the correct configuration and finish  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised 2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised 3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required

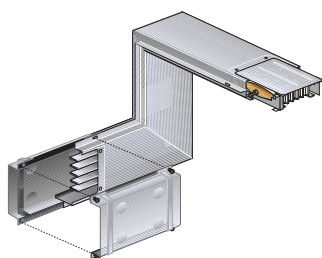
1 : The 1000 A aluminium is supplied painted RAL 7035 as standard

# MR medium rating busbar

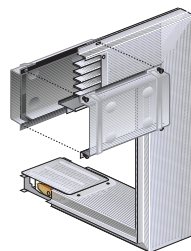
## combination vertical + horizontal elbows



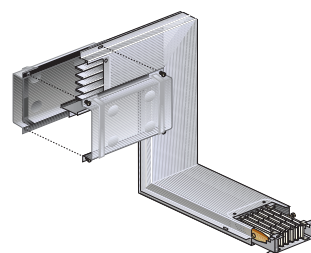
Combination vertical + horizontal elbow right + right hand



Combination vertical + horizontal elbow right + left hand



Combination vertical + horizontal elbow left + right hand



Combination vertical + horizontal elbow left + left hand



Dimensions and technical information p. 44  
Measuring bespoke dimensions p. 49

MR is fully compliant with IEC 61439-6 (BS EN 61439-6)  
Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)  
Angles are 90° as standard. Other angles available on request. IP 55 (according to BS EN 60529)

Pack	Cat. Nos.		<b>Combination vertical + horizontal elbows – standard dimensions (300 + 300 + 300 mm)</b>		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400501		160	10-29	–
1	50400502	55400502	250	10-55	12-23
1	50400503	55400503	315	11-06	12-97
1	50400504	55400504	400	18-37	15-72
1	50400508		500	19-50	–
1	50400505	55400505	630	20-55	25-77
1	50400506	55400506	800	21-20	30-88
1	50400507 <sup>1</sup>	55400507	1000	21-80	34-55
			<b>Right hand + left hand</b>		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400511		160	10-29	–
1	50400512	55400512	250	10-55	12-23
1	50400513	55400513	315	11-06	12-97
1	50400514	55400514	400	18-37	15-72
1	50400518		500	19-50	–
1	50400515	55400515	630	20-55	25-77
1	50400516	55400516	800	21-20	30-88
1	50400517 <sup>1</sup>	55400517	1000	21-80	34-55
			<b>Left hand + right hand</b>		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400521		160	10-29	–
1	50400522	55400522	250	10-55	12-23
1	50400523	55400523	315	11-06	12-97
1	50400524	55400524	400	18-37	15-72
1	50400528		500	19-50	–
1	50400525	55400525	630	20-55	25-77
1	50400526	55400526	800	21-20	30-88
1	50400527 <sup>1</sup>	55400527	1000	21-80	34-55
			<b>Left hand + left hand</b>		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50400531		160	10-29	–
1	50400532	55400532	250	10-55	12-23
1	50400533	55400533	315	11-06	12-97
1	50400534	55400534	400	18-37	15-72
1	50400538		500	19-50	–
1	50400535	55400535	630	20-55	25-77
1	50400536	55400536	800	21-20	30-88
1	50400537 <sup>1</sup>	55400537	1000	21-80	34-55

Pack	Cat. Nos.		<b>Combination vertical + horizontal elbows – bespoke dimensions</b>	
	Aluminium	Copper	Rating (A)	
1	50400541		160	
1	50400542	55400542	250	
1	50400543	55400543	315	
1	50400544	55400544	400	
1	50400548		500	
1	50400545	55400545	630	
1	50400546	55400546	800	
1	50400547 <sup>1</sup>	55400547	1000	
			<b>Right hand + right hand</b>	
			300 to 900 mm per arm	
			Rating (A)	
1	50400551		160	
1	50400552	55400552	250	
1	50400553	55400553	315	
1	50400554	55400554	400	
1	50400558		500	
1	50400555	55400555	630	
1	50400556	55400556	800	
1	50400557 <sup>1</sup>	55400557	1000	
			<b>Right hand + left hand</b>	
			300 to 900 mm per arm	
			Rating (A)	
1	50400561		160	
1	50400562	55400562	250	
1	50400563	55400563	315	
1	50400564	55400564	400	
1	50400568		500	
1	50400565	55400565	630	
1	50400566	55400566	800	
1	50400567 <sup>1</sup>	55400567	1000	
			<b>Left hand + right hand</b>	
			300 to 900 mm per arm	
			Rating (A)	
1	50400571		160	
1	50400572	55400572	250	
1	50400573	55400573	315	
1	50400574	55400574	400	
1	50400578		500	
1	50400575	55400575	630	
1	50400576	55400576	800	
1	50400577 <sup>1</sup>	55400577	1000	

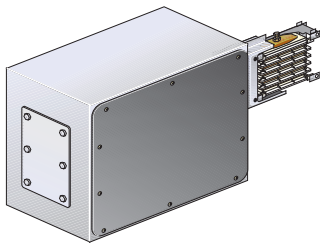
Key : How to select the correct configuration and finish  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised 2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised 3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required

1 : The 1000 A aluminium is supplied painted RAL 7035 as standard

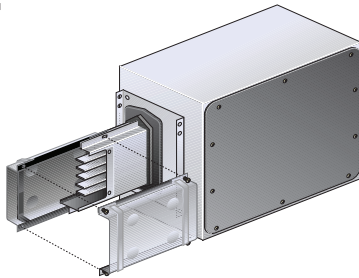




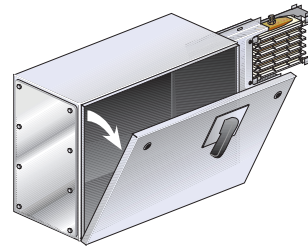
# MR medium rating busbar feed units



Feed unit left end



Feed unit right end



Right end up feed unit with AC23 switch disconnecter



End stop

**Dimensions and technical information p. 45**  
**Measuring bespoke dimensions p. 49**

MR is fully compliant with IEC 61439-6 (BS EN 61439-6)  
 Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)  
 IP 55 (according to BS EN 60529)

Pack	Cat. Nos.		Feed units		
<b>Metal end feed units</b>					
For plates and hole dimensions refer to switchboard-transformer feed units with same rating (p. 38)					
Left end					
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401131		160	17.74	—
1	50401132	55401132	250	17.76	18.47
1	50401133	55401133	315	17.83	18.70
1	50401134	55401134	400	23.22	19.58
1	50401138		500	23.20	—
1	50401135	55401135	630	23.63	26.07
1	50401136	55401136	800	23.70	27.80
1	50401137	55401137	1000	24.00	29.03
Right end					
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401121		160	16.64	—
1	50401122	55401122	250	16.76	17.37
1	50401123	55401123	315	17.03	17.70
1	50401124	55401124	400	18.32	18.88
1	50401128		500	20.00	—
1	50401125	55401125	630	19.43	21.17
1	50401126	55401126	800	19.80	23.30
1	50401127	55401127	1000	20.20	24.83
<b>Plastic end feed units</b>					
Terminals accept cables up to 150 mm <sup>2</sup> . For higher ratings attach cable lugs to spreaders provided					
Left end					
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401111		160	6.80	—
1	50401112	55401112	250	6.85	7.20
Right end					
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401101		160	5.70	—
1	50401102	55401102	250	5.85	6.10

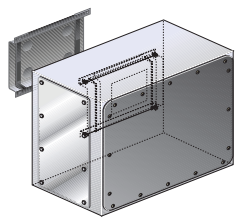
Pack	Cat. Nos.		Feed units (continued)		
<b>End feed unit with AC23 switch disconnecter</b>					
This feed unit allows isolation of the line for maintenance					
Right end up					
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	Aluminium	Copper	160	17.94	—
1	50403401		250	18.10	19.12
1	50403402	55403402	315	18.86	19.40
1	50403403	55403403	400	21.79	20.34
1	50403404	55403404	500	22.42	—
1	50403408		500	22.42	—
1	50403405	55403405	630	23.64	26.88
1	50403406	55403406	800	24.95	28.67
1	50403407	55403407	1000	26.50	29.95
Right end down					
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50403411		160	17.94	—
1	50403412	55403412	250	18.10	19.12
1	50403413	55403413	315	18.86	19.40
1	50403414	55403414	400	21.79	20.34
1	50403418		500	22.42	—
1	50403415	55403415	630	23.64	26.88
1	50403416	55403416	800	24.95	28.67
1	50403417	55403417	1000	26.50	29.95
Left end up					
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50403421		160	17.94	—
1	50403422	55403422	250	18.10	19.12
1	50403423	55403423	315	18.86	19.40
1	50403424	55403424	400	21.79	20.34
1	50403428		500	22.42	—
1	50403425	55403425	630	23.64	26.88
1	50403426	55403426	800	24.95	28.67
1	50403427	55403427	1000	26.50	29.95
Left end down					
			Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50403431		160	17.94	—
1	50403432	55403432	250	18.10	19.12
1	50403433	55403433	315	18.86	19.40
1	50403434	55403434	400	21.79	20.34
1	50403438		500	22.42	—
1	50403435	55403435	630	23.64	26.88
1	50403436	55403436	800	24.95	28.67
1	50403437	55403437	1000	26.50	29.95

**Key : How to select the correct configuration and finish**  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised 2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised 3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required

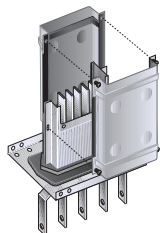
<b>End stops</b>		
Ensure IP 55 protection at the end of the run		
For right and left feed units		
1	50403101	160 – 315 A - for aluminium
1	50403102	250 – 400 A - for copper
		400 – 1000 A - for aluminium
		630 – 1000 A - for copper

# MR medium rating busbar

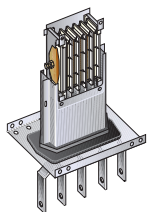
feed units (continued), in-line bus switcher and reducers



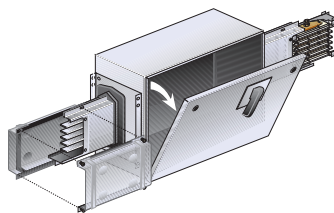
Centre feed unit



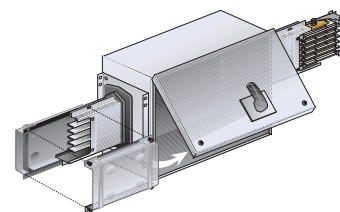
Switchboard-transformer feed units right hand



Switchboard-transformer feed units left hand



In-line bus switch right hand



In-line bus switch left hand



Dimensions and technical information p. 45-46

MR is fully compliant with IEC 61439-6 (BS EN 61439-6)

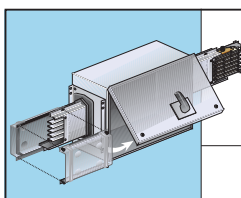
Rated currents are at an average ambient temperature of 40° C (over and above the required standard of 35° C)

IP 55 (according to BS EN 60529)

Pack	Cat. Nos.		Feed units (continued)		
			<b>Centre feed units</b>		
			Feeds a trunking system from an intermediate position along the run. Also used to reduce the volt drop of the line		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401201		160	17-27	—
1	50401202	55401202	250	18-13	19-12
1	50401203	55401203	315	18-88	19-40
1	50401204	55401204	400	22-06	20-34
1	50401208		500	22-65	—
1	50401205	55401205	630	23-24	26-88
1	50401206	55401206	800	24-02	28-67
1	50401207	55401207	1000	25-70	29-95
			<b>Switchboard-transformer feed units</b>		
			Feed unit for direct connection of the busbar to a switchboard or to the low voltage terminals of a distribution transformer		
			Right hand		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401001		160	4-9	—
1	50401002	55401002	250	5-1	5-7
1	50401003	55401003	315	5-3	6-0
1	50401004	55401004	400	6-4	9-2
1	50401008		500	6-9	—
1	50401005	55401005	630	7-5	9-3
1	50401006	55401006	800	7-9	11-4
1	50401007	55401007	1000	8-3	12-9
			Left hand		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401011		160	6-0	—
1	50401012	55401012	250	6-1	6-7
1	50401013	55401013	315	6-2	7-0
1	50401014	55401014	400	11-3	7-8
1	50401018		500	11-4	—
1	50401015	55401015	630	11-7	14-2
1	50401016	55401016	800	11-8	15-9
1	50401017	55401017	1000	12-5	17-1

Pack	Cat. Nos.		In-line bus switches		
			Allows disconnection of part of a line, while the other is live		
			Right hand		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401701		160	23-54	—
1	50401702	55401702	250	23-56	24-27
1	50401703	55401703	315	23-63	24-50
1	50401704	55401704	400	29-32	25-38
1	50401708		500	29-50	—
1	50401705	55401705	630	29-73	32-17
1	50401706	55401706	800	29-80	33-90
1	50401707	55401707	1000	32-11	35-13
			Left hand		
	Aluminium	Copper	Rating (A)	Weight (kg)	
				Aluminium	Copper
1	50401721		160	23-54	—
1	50401722	55401722	250	23-56	24-27
1	50401723	55401723	315	23-63	24-50
1	50401724	55401724	400	29-32	25-38
1	50401728		500	29-50	—
1	50401725	55401725	630	29-73	32-17
1	50401726	55401726	800	29-80	33-90
1	50401727	55401727	1000	32-11	35-13

Key : How to select the correct configuration and finish  
 All examples on this page show 4 conductor galvanised lengths  
 No. of conductors and finish is dictated by the red number  
 0 = 4 conductors. Galvanised 2 = 4 conductors. Painted  
 1 = 5 conductors. Galvanised 3 = 5 conductors. Painted  
 Replace 0 with 1, 2, or 3 if required



Rating reducers with disconnecter and fuse holder also available

Contact us on +44 (0) 370 608 9020





## MR tap-off boxes – plug-in type up to 32 A

### 32 A plug-in tap-offs – Empty

Energy withstand  $400 \cdot 10^3 \text{ A}^2\text{s}$


#### Type 1 – Max. power losses 16 W

	 Transparent hinged door and 4 mod. DIN rail	 Transparent hinged door and 8 mod. DIN rail
<b>Cat. Nos.</b>	50414063	50414064
<b>Weight (kg)</b>	1.7	1.7

### 32 A plug-in tap-offs – fitted complete with TYPE B MCBs

Energy withstand  $400 \cdot 10^3 \text{ A}^2\text{s}$


#### Type 1 – Max. power losses 16 W

		Rating		3 x 1P	3 x (1P + N)	4P
	Transparent hinged door and 4 mod. DIN rail	16 A	<b>Cat. Nos.</b>	–	–	50414130
			<b>Weight (kg)</b>	–	–	2.29




### 32 A plug-in tap-offs – fitted complete with TYPE C MCBs

Energy withstand  $400 \cdot 10^3 \text{ A}^2\text{s}$

#### Type 1 – Max. power losses 16 W

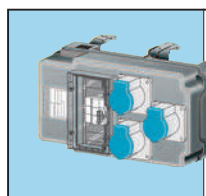
		Rating		3 x 1P	4P	Ready for MCB
	Transparent hinged door and 4 mod. DIN rail	16 A	<b>Cat. Nos.</b>	–	50414128	–
			<b>Weight (kg)</b>	–	2.29	–
		32 A	<b>Cat. Nos.</b>	–	50414144	–
			<b>Weight (kg)</b>	–	2.36	–

#### Type 2 – Max. power losses 20 W

	Transparent hinged door and 8 mod. DIN rail. Plus 1 x 32 A 3P socket	32 A	<b>Cat. Nos.</b>	–	50414192	–
			<b>Weight (kg)</b>	–	3.06	–
	Transparent hinged door and 8 mod. DIN rail. Plus 2 x 16 A 3P sockets	16 A	<b>Cat. Nos.</b>	–	50414185	50414282
			<b>Weight (kg)</b>	–	3.23	2.49
	Transparent hinged door and 8 mod. DIN rail. Plus 2 x 32 A 3P sockets	32 A	<b>Cat. Nos.</b>	–	–	50414291
			<b>Weight (kg)</b>	–	–	2.59
	Transparent hinged door and 8 mod. DIN rail. Plus 3 x 16 A 2P + E sockets	16 A	<b>Cat. Nos.</b>	50414181	–	50414281
			<b>Weight (kg)</b>	3.05	–	2.55



For dimensions, technical information and mounting instructions see p. 47-48



For other options on tap-off boxes

Contact us on +44 (0) 370 608 9020

## MR tap-off boxes – plug-in type 32-630 A

MR tap-off boxes from 16 A to 1 000 A can accommodate different protection devices, including fuses, MCBs or MCCBs. Can be operated when energised and under load conditions up to a rating of 32 A due to the integration of an isolating device within the cover. All insulating plastic components comply with the incandescent wire test (BS EN 60695-2-1) and have a V2 self extinguishing degree (UL94). Standard degree of protection is IP 55 without using additional protection kits. For dimensions, technical information and mounting instructions **see p. 47-48**

### Plug-in tap-offs with fuse carriers (or empty) 63-400 A

	TYPE 3		TYPE 4				TYPE 5			
<b>Rating</b>	32 A	63 A	100 A	125 A		160 A	250 A	400 A		
<b>Fuse Carrier</b>	CH10 (Ø10·3 x 38)	TIA / TIS	TCP	Empty	NH 0	NH 0	NH 1	(Neutral section 50%)		
								Empty	NH 2	
<b>Cat. Nos.</b>	55655051	55055062	55055063	55055055	55055053	50404004	55655057 <sup>1</sup>	55655059 <sup>1</sup>	55655058 <sup>1</sup>	
<b>Weight (kg)</b>	0·85	3·2	3·3	2·9	3·35	3·6	14·9	14·3	15·8	

### Plug-in tap-offs fitted with DIN rail and transparent hinged window 63-400 A

		TYPE 4				TYPE 5	
		Can fit some MCCBs		Not suitable for MCCBs			
<b>Rating</b>		4 mod. DIN rail	8 mod. DIN rail	8 mod. DIN rail	11 mod. DIN rail	7 mod. DIN rail	11 + 11 mod. DIN rail
63 A	<b>Cat. Nos.</b>	–	–	55055086	55055088	–	–
	<b>Weight (kg)</b>	–	–	3·2	3·6	–	–
125 A	<b>Cat. Nos.</b>	–	55055077	55055056	55055068	–	–
	<b>Weight (kg)</b>	–	3·0	3·2	3·6	–	–
160 A	<b>Cat. Nos.</b>	50404024	–	–	–	–	–
	<b>Weight (kg)</b>	3·6	–	–	–	–	–
400 A	<b>Cat. Nos.</b>	–	–	–	–	55055070 <sup>1</sup>	55055071 <sup>1</sup>
	<b>Weight (kg)</b>	–	–	–	–	13·4	15·3

### Plug-in heavy duty metal tap-offs 63-630 A

		TYPE 6			TYPE 7	TYPE 8		
		These PE + FE tap-off boxes have separate terminals for the two parallel earths (casing and conductor) PE = protection earth FE = functional earth						
	<b>Rating</b>	63 A	125 A	160 A	250 A	400 A	630 A	
Empty version	<b>Cat. Nos.</b>	50414001	50414002	50414003	50414004	–	50414005	
	<b>Weight (kg)</b>	8·60	8·80	8·80	23	–	25	
With fuse holder	<b>Cat. Nos.</b>	50414021 CH22 (Ø22 x 58)	50414022 NH 00	50414023 NH 00	50414024 NH 2	50414026 NH 2	50414025 NH 3	
	<b>Weight (kg)</b>	8·75	8·90	9·10	25	33	33	
With switch disconnecter and fuseholder (AC23)	<b>Cat. Nos.</b>	50411601 NH 000	50411622 NH 00	50411623 NH 00	50411624 NH 1	50411625 NH 2	50411646 NH 3	
	<b>Weight (kg)</b>	9·50	9·70	9·70	30	38	38	



For dimensions, technical information and mounting instructions **see p. 47-48**

<sup>1</sup> : Cat. Nos. 55055070 / 55055071 / 55655057 / 55655058 / 55655059 are not available on MR 1000 A aluminium

# MR tap-off boxes – plug-in type 125-630 A - fully equipped

bolt-on type 630-1 000 A

## Plug-in type

### Fully equipped tap-offs – toggle handle MCCBs : 25-125 A<sup>1</sup>

Tap-off rating	Breaker rating	3 pole MCCB with toggle handle	4 pole MCCB with toggle handle
125 A	16 A	55055077M3TF	55055077M4TF
	25 A	55055077M3TA	55055077M4TA
	40 A	55055077M3TB	55055077M4TB
	63 A	55055077M3TC	55055077M4TC
	100 A	55055077M3TD	55055077M4TD
	125 A	55055077M3TE	55055077M4TE

MCCBs, R type and J type fuse carriers that meet EDF regulations are also available  
**Contact us on +44 (0) 370 608 9020**

Tap-off boxes can be supplied with Castel locks  
**Contact us on +44 (0) 370 608 9020**

### Fully equipped tap-offs – rotary handle MCCBs : 25-630 A<sup>1</sup>

Tap-off rating	Breaker rating	3 pole MCCB with rotary handle	4 pole MCCB with rotary handle
160 A	25 A	50414003M3RA	50414003M4RA
	40 A	50414003M3RB	50414003M4RB
	63 A	50414003M3RC	50414003M4RC
	100 A	50414003M3RD	50414003M4RD
	125 A	50414003M3RE	50414003M4RE
	160 A	50414003M3RF	50414003M4RF
250 A	200 A	50414004M3RG	50414004M4RG
	250 A	50414004M3RH	50414004M4RH
630 A	400 A	50414005M3RI	50414005M4RI
	630 A	50414005M3RJ	50414005M4RJ

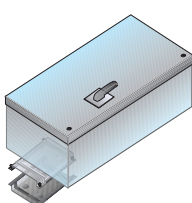
### Fully equipped tap-offs – with protection and multifunction meters : 63-160 A<sup>1</sup>

Tap-off rating	Breaker rating	3 pole MCCB with multifunction meter
160 A	63 A	50414003M3MC
	100 A	50414003M3MD
	125 A	50414003M3ME
	160 A	50414003M3MF

<sup>1</sup> : For MCCB technical data, see p. 118-125

## Bolt-on type

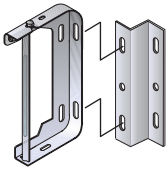
### Bolt-on tap-offs – with switch disconnecter and fuse holder (AC23)

	Positioned in the joint between straight lengths As this connection affects live conductors, it cannot be carried out when the line is live – the line must be isolated		Busbar rating	Tap-off size			
					630 A – NH 3 TYPE 9	800 A – NH 4 TYPE 10	1000 A – NH 4 TYPE 10
	Busbar system	Aluminium	630 A	Cat. Nos.	50401801	–	–
				Weight (kg)	59	–	–
			800 A	Cat. Nos.	50401802	50401804	–
			Weight (kg)	59	89	–	
		Copper	1000 A	Cat. Nos.	50401803	50401805	50401806
				Weight (kg)	59	89	89
	630 A		Cat. Nos.	55401801	–	–	
		Weight (kg)	59	–	–		
		800 A	Cat. Nos.	55401802	55401804	–	
		Weight (kg)	59	89	–		
	1000 A	Cat. Nos.	55401803	55401805	55401806		
	Weight (kg)	59	89	89			

 For dimensions, technical information and mounting instructions see p. 47-48

# MR medium rating busbar

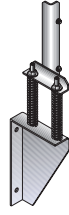
## fixing accessories



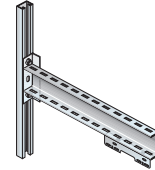
50632001 +  
50632205



50403711



50403712



50632212

**Dimensions and technical information p. 49**  
**Measuring special dimensions p. 49**

The MR series offers a wide range of brackets and fixing accessories that enable quick and simple installation for a wide range of applications. The MR series can be mounted on horizontal or vertical surfaces or mounted directly on to beams. Various spacers, spring suspension hangers and adjustable arms are available to meet the requirements of complex installations

Pack	Cat. Nos.	<b>Fixing accessories for general and rising mains applications</b>	Pack	Cat. Nos.	<b>Fixing accessories for other applications</b>
		<b>Suspension brackets</b>			<b>Wall fixing bracket</b>
		Use 1 bracket every 2 m			Adjustable height and depth arm. Bracket holder can be coupled with MS and MR brackets
1	50632001	Weight : 0.55 kg For use with aluminium rated 160, 250, 315 A and copper rated 250, 315, 400 A	1	50632212	Length (m)   Weight (kg)   Load on end point
1	50632003	Weight : 0.60 kg For use with aluminium rated 400, 500, 630, 800 A and copper rated 630, 800, 1000 A	1	50632213	0.45   2.80   pmax=80 kg
		<b>Wall spacer</b>	1	50632214	0.55   3.00   pmax=68 kg
		Used when suspension bracket is fixed directly to the wall			0.75   3.50   pmax=50 kg
1	50632205	Weight : 0.05 kg			
		<b>Suspension hanger for rising main</b>			
		For vertical trunking lengths. Suitable for rising mains up to 4 m and for weights up to 300 kg			
		Must be used in conjunction with Cat. Nos. 50632001 or 50632003			
		1 bracket at the base of the rising main			
		Maximum use distance 4 m			
1	50403711	Weight : 1.05 kg			
		<b>Spring suspension hanger for rising main</b>			
		Use 1 hanger every 300 kg (see weight table, p. 52-55)			
		Minimum use distance 4 m			
1	50403712	Weight : 1.20 kg			

# MR medium rating busbar

## technical information

### ■ General features

MR is fully compliant with IEC 61439-6 (BS EN 61439-6), specifically, the rated current of Zucchini busbar trunking systems is always rated at the average ambient temperature of 40°C (the Standard requires 35°C), thus offering the market suitably oversized products

The busbar casing is made from hot-dipped galvanised sheet steel and forms a high strength outer structure, which also serves as the protective conductor (PE) for the MR version

NOTE : 1000 A is supplied painted as standard

The individual conductors are made from either electrolytic copper or electro tin-plated aluminium. Standard MR trunking is supplied with four equal size conductors (TP and N +PE) whereas the optional 5 conductor version includes an additional integral 100% earth bar (TP and N +E)

The degree of protection is IP 55 throughout the system

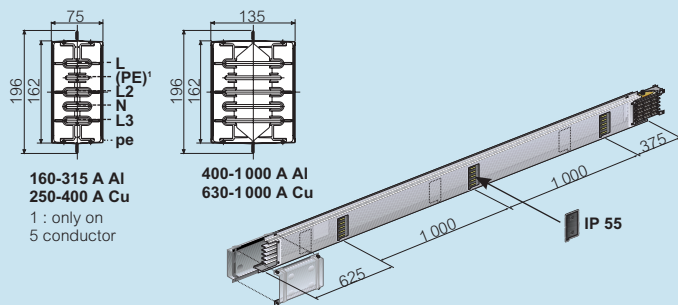
The normal recommended fixing centres for the MR range is 2.0 m

The jointing of MR lengths is done by overlapping two lengths and fastening the special locating screws. The 'monobloc' joint is then tightened by a double headed shear bolt to complete the electrical connection. A joint cover is then positioned to complete the joint

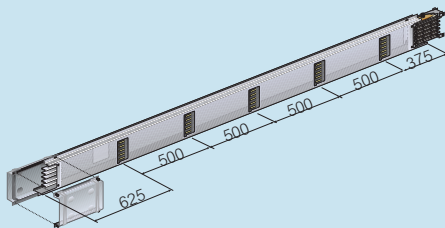
### ■ Trunking lengths – 3 m

The components and features of MR straight lengths are :

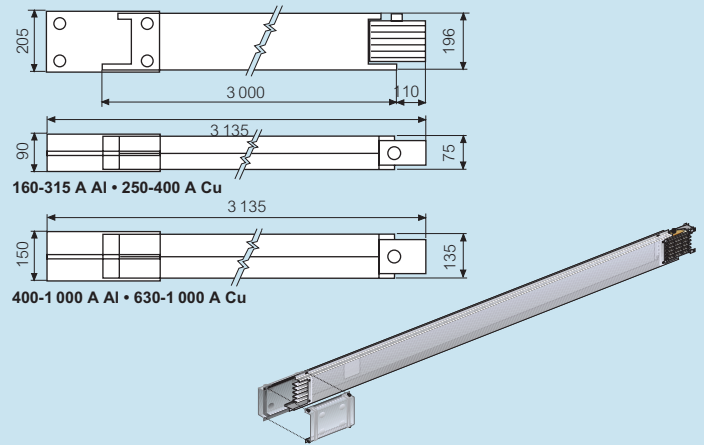
- a casing made of Senzimir quality galvanised steel used as protective earth (PE). NOTE : 1000 A is supplied painted as standard
- overall dimensions : 75 to 135 x 196 mm
- painted casing available on request (contact us on +44 (0) 370 608 9020)
- number of conductors : 4 with the same section (3P + N) with PE made from the casing or 5 when using MR full (3P + N + PE), available in the aluminum or electrolytic copper version with 99.9% purity
- conductors insulators are made of fibreglass reinforced plastic material, ensuring a V1 self-extinguishing degree (according to UL 94), in compliance with the glow-wire test according to IEC 60695-2-10
- tap-off outlets with a constant centre distance of 1 m on both sides of the busbar (3 + 3 outlets every 3 m), set up for being connected to plug-in type tap-off boxes. These outlets open and close automatically when inserting or pulling out a tap-off box
- 'monobloc' electric junction system to connect conductors and PE in a fast and reliable way. The 'monobloc' has shear-head bolts with a preset torque setting which ensure good, long-lasting electrical continuity
- all components and accessories in the MR range are IP 55
- the whole busbar is flame retardant in compliance with the IEC 60332-3 standard



### ■ Trunking lengths – 3 m with 5 outlets on one side only



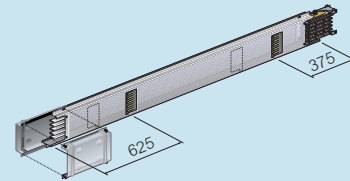
### ■ Trunking length – 3 m without outlets



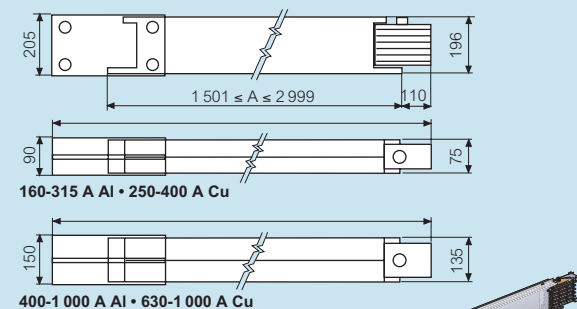
### ■ Tap-off outlet cover – IP 55



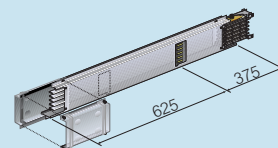
### ■ Trunking lengths – 1501 to 2999 mm with 2 + 2 outlets



### ■ Trunking lengths – 1501 to 2999 mm without outlets



### ■ Trunking lengths – 1000 to 1500 mm with 1 + 1 outlets

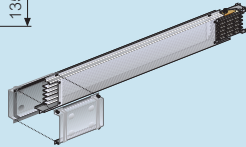
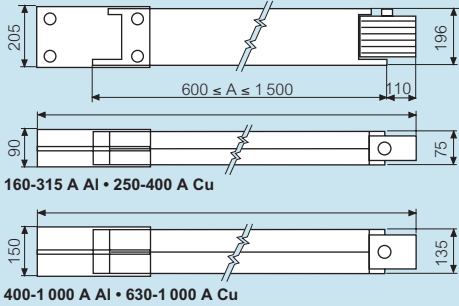


All dimensions (mm) are nominal

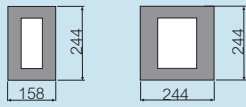
# MR medium rating busbar

technical information (continued)

## Trunking lengths – 600 to 1500 mm without outlets

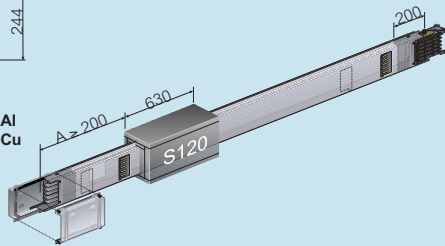


## Trunking lengths with S120 fire barrier



160-315 A Al  
250-400 A Cu

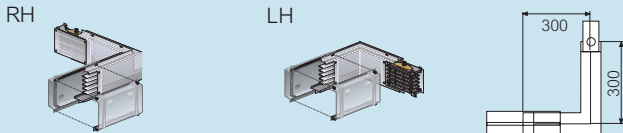
400-1000 A Al  
630-1000 A Cu



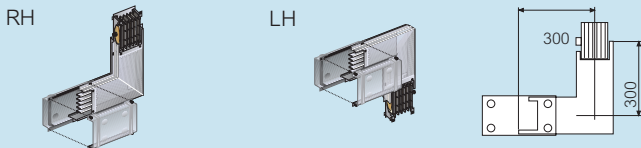
## Single elbows – standard dimensions (300 + 300 mm)

90° as standard. Other angles available on request. IP 55 quick connection

### Horizontal elbow



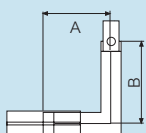
### Vertical elbow



### Bespoke dimensions

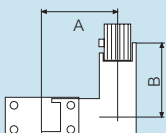
Measure from the long casing to the axis of the elbow (see measuring bespoke dimensions p. 49)

### Special horizontal elbow



Bespoke dimensions (mm)		
Min		Max
250 ≤	A	≤ 900
250 ≤	B	≤ 900

### Special vertical elbow



Bespoke dimensions (mm)		
Min		Max
300 ≤	A	≤ 900
300 ≤	B	≤ 900

All dimensions (mm) are nominal

## Double elbows

### Standard dimensions (300 + 300 + 300 mm)

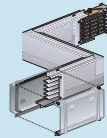
90° as standard. Other angles available on request. IP 55 quick connection

### Bespoke dimensions

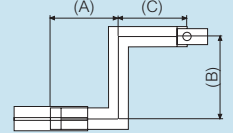
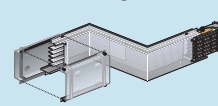
Measure from the long casing to the axis of the elbow

### Double horizontal elbow

Right + left



Left + right

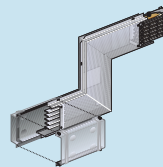


### Bespoke dimensions (mm)

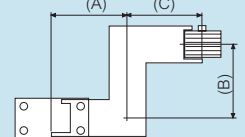
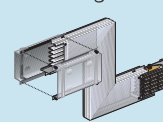
Min		Max
250 ≤	A, B, C	≤ 900

### Double vertical elbow

Right + left



Left + right

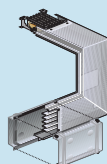


### Bespoke dimensions (mm)

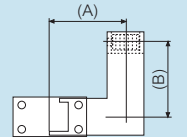
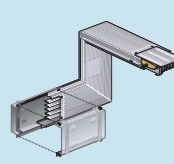
Min		Max
300 ≤	A, B, C	≤ 900

### Vertical + horizontal elbows

RH + RH



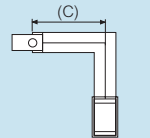
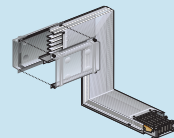
RH + LH



LH + RH



LH + LH

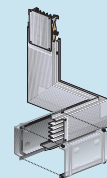


### Bespoke dimensions (mm)

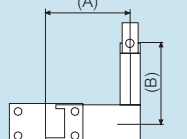
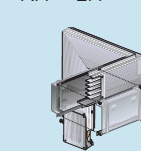
Min		Max
300 ≤	A, B, C	≤ 900

### Horizontal + vertical elbows

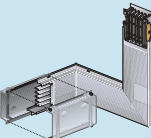
RH + RH



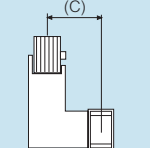
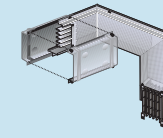
RH + LH



LH + RH



LH + LH



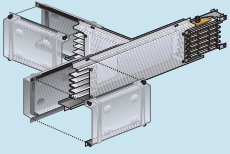
### Bespoke dimensions (mm)

Min		Max
300 ≤	A, B, C	≤ 900

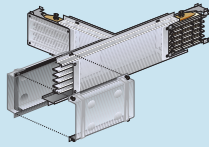
■ **Horizontal tee**

Standard dimensions (300 + 300 + 300 mm)

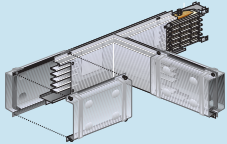
Right hand – female tee



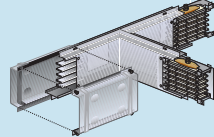
Right hand – male tee



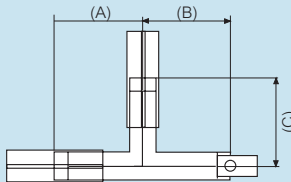
Left hand – female tee



Left hand – male tee

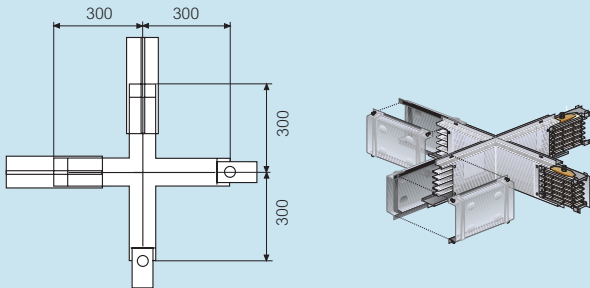


■ **Bespoke dimensions**



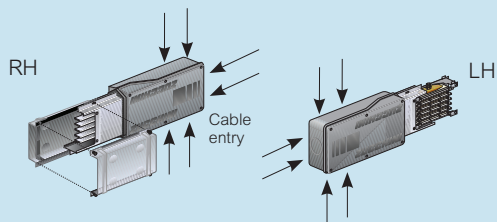
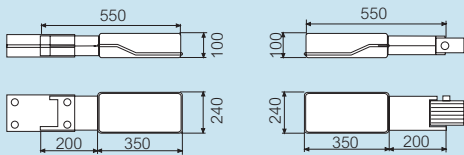
Bespoke dimensions (mm)		
Min		Max
250 ≤	A, B, C	≤ 900

■ **Crossover – standard dimensions (300 + 300 + 300 + 300 mm)**



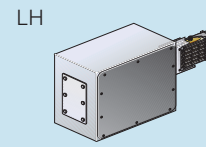
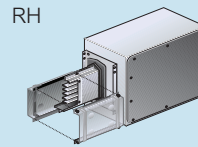
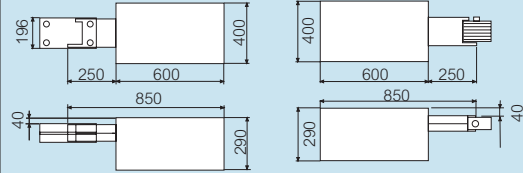
■ **End feed units**

Cable connection : max. sect. (3 x 120 mm<sup>2</sup> + 1 x 70 mm<sup>2</sup>) or 3 x 150 mm<sup>2</sup>, max PG 48

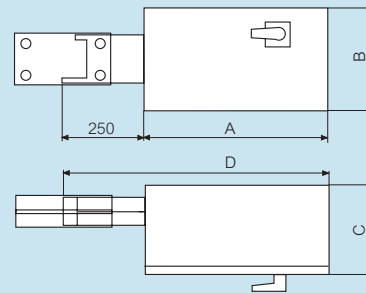


■ **Metal end feed units**

During shipment the stump is positioned in the box to reduce its bulk. Take it out and screw it in the position illustrated here. Opening on the base cable entry : 180 x 290 mm. For plates and holes dimensions, see p. 46 for the switchboard feed unit with the same rating

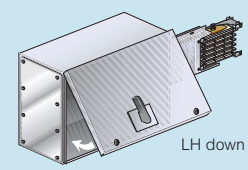
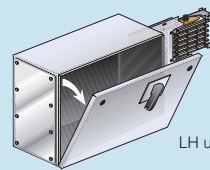
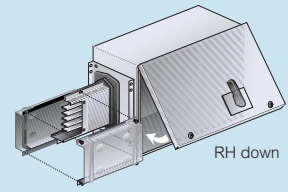
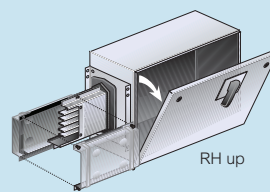


■ **End feed unit with AC23 switch disconnector**

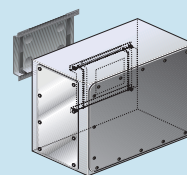
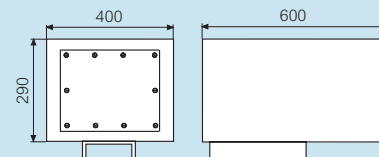


Dimensions (mm)		
	1	2
A	550	1050
B	350	450
C	280	300
D	800	1300

Cable entry dimensions (mm)		
	1	2
	180 x 270	210 x 380



■ **Centre feed units**



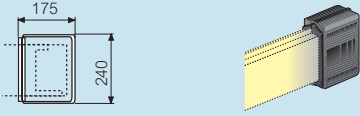
All dimensions (mm) are nominal

# MR medium rating busbar

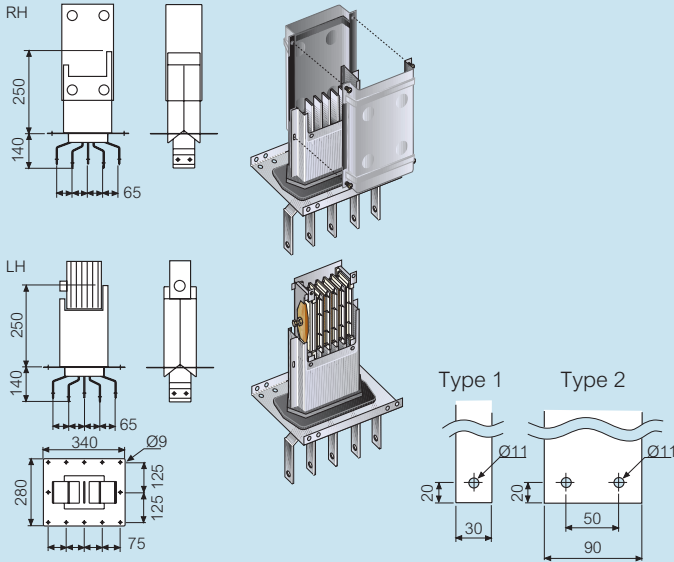
technical information (continued)

## ■ End stop

Ensures IP 55 protection at the end of the run (EN 60529)

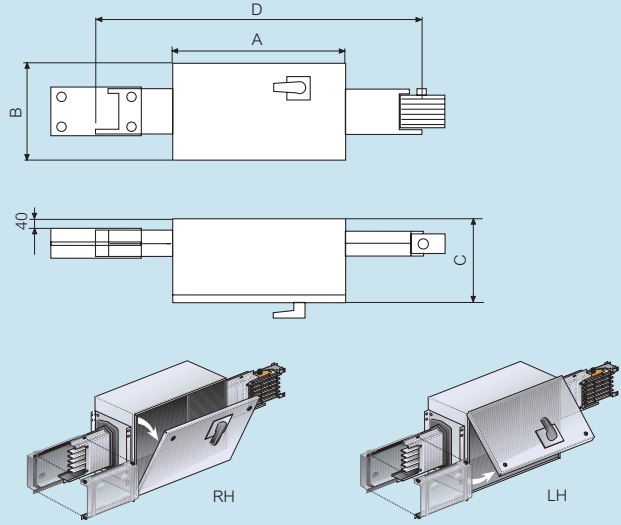


## ■ Switchboard-transformer feed units



Dimensions (mm)		
	Al	Cu
Type 1	160 A	250 A
	250 A	315 A
	315 A	400 A
Type 2	400 A	630 A
	500 A	800 A
	630 A	1 000 A
	800 A	–
	1 000 A	–

## ■ In-line bus switch



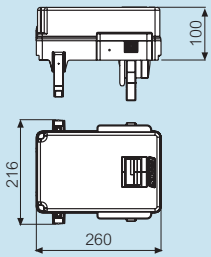
Dimensions (mm)		
Type 1		Type 2
550	A	1 050
350	B	450
280	C	300
1 050	D	1 550

All dimensions (mm) are nominal

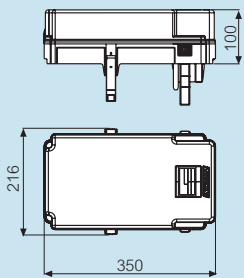


■ Tap-off boxes

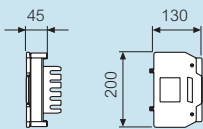
Type 1



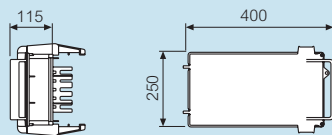
Type 2



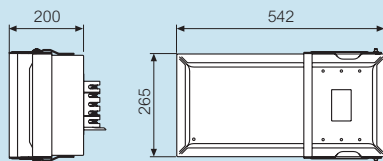
Type 3 32 A



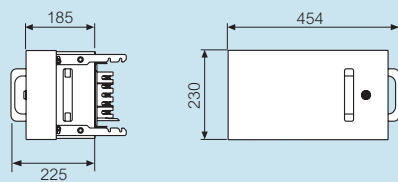
Type 4 63-160 A



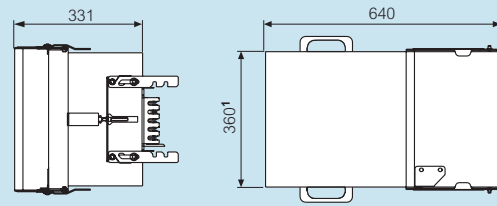
Type 5<sup>1</sup> 250-400 A



Type 6 63-160 A

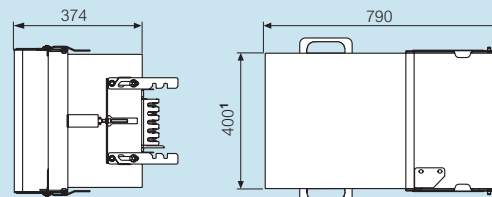


Type 7 250 A



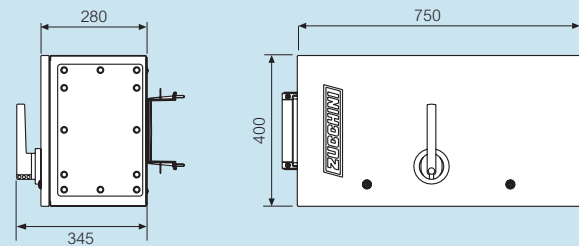
1 : 445 mm with handles

Type 8 400-630 A

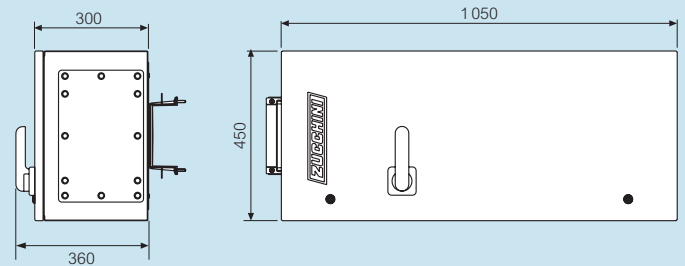


1 : 486 mm with handles

Type 9 630 A



Type 10 800-1000 A

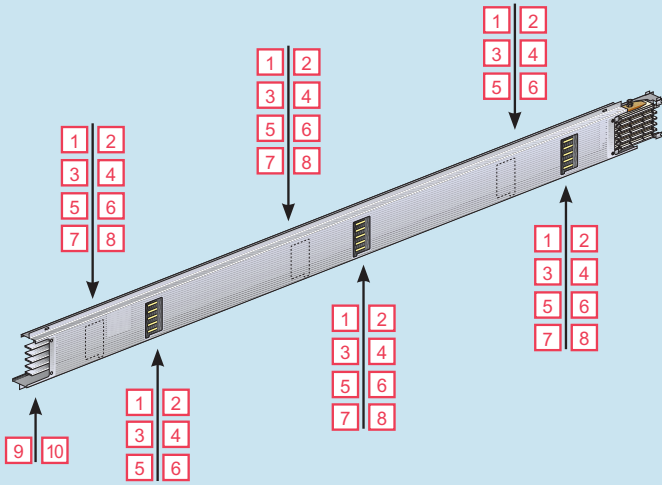


1 : Cat. Nos. 55055070 / 55055071 / 55655057 / 55655058 / 55655059 are not available on MR 1000 A aluminium

All dimensions (mm) are nominal

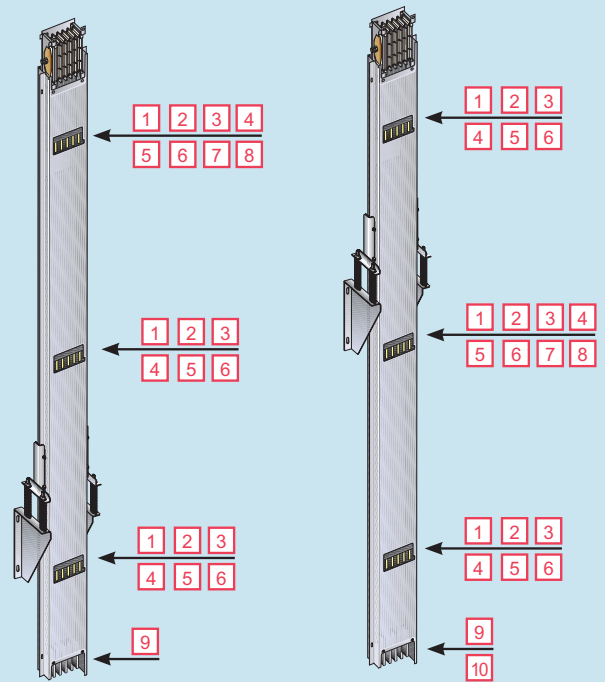
**MR medium rating busbar**  
mounting tap-offs

■ Trunking length with 3 outlets  
Edgeways

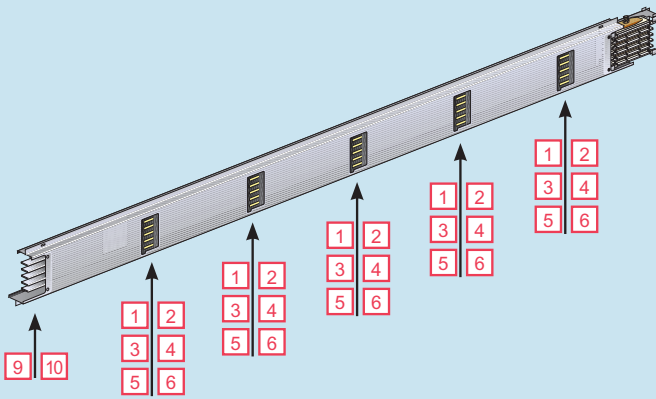


Numbers in squares refer to the tap-off box type

Rising main

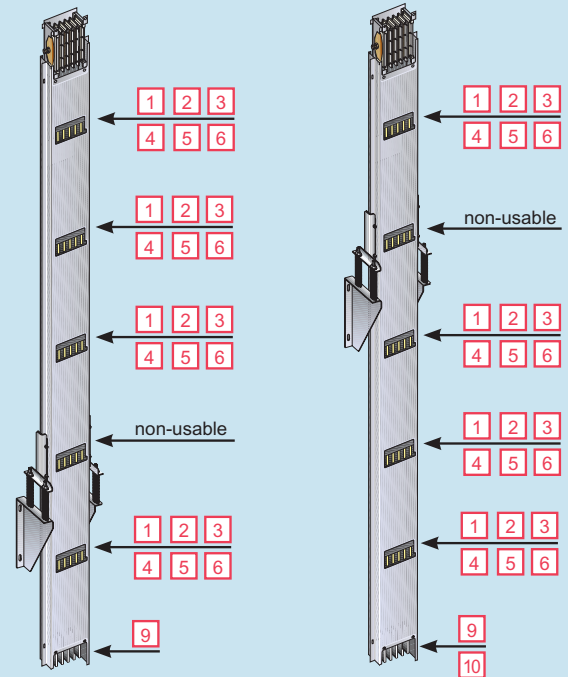


■ Trunking length with 5 outlets  
Edgeways



Numbers in squares refer to the tap-off box type

Rising main

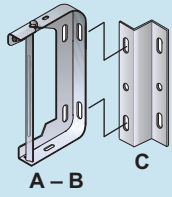
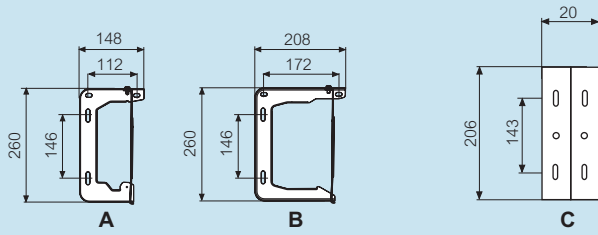


Note : in busbar with 5 outlets, Type 5 tap-off boxes (see p. 47) do not allow the possibility of installing other boxes in the next outlet

# MR medium rating busbar

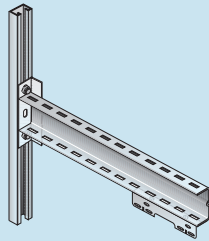
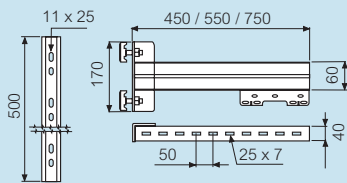
technical information

## ■ Suspension brackets



Cat. Nos.	
A	50632001
B	50632003
C	50632205

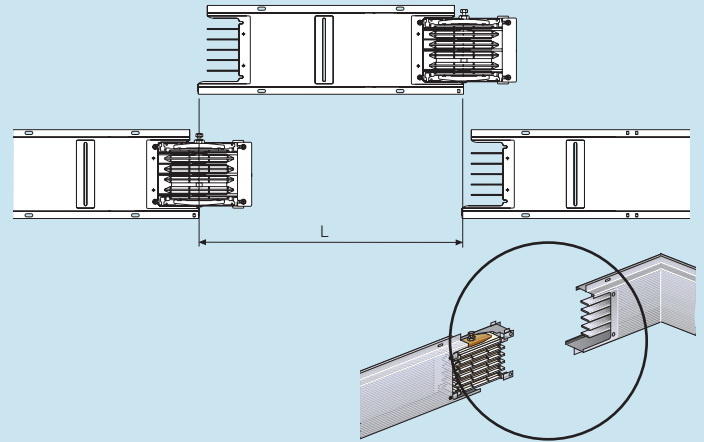
## ■ Wall fixing bracket



## ■ Measuring bespoke dimensions

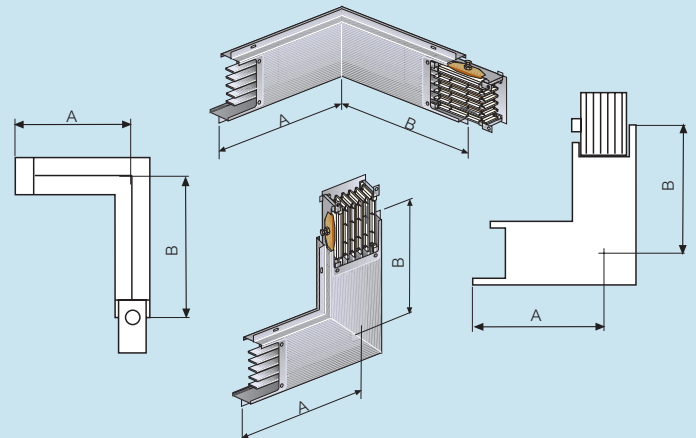
### Straight lengths

Always measure from the long side of the casing as illustrated



### Elbows

Measure from the long casing to the axis of the elbow



# MR medium rating busbar

## how to design the system

**1 Use end feed unit LH – left hand**

This gives the neutral bar positioning on the right of elements and the tap-off box with cable entry at the base

**2 Use the vertical hanger for rising main as a function of the run weight**

For vertical lengths less than 4 metres fit on the base of the busbar a vertical bracket (Cat. No. 50403711) for longer lengths use vertical suspension hanger (Cat. No. 50403712) every 300 kg of rising main

**3 Use standard suspension brackets with spacer 40 mm every 2 m of the rising main**

**4 Use straight lengths with plug outlets on one side**

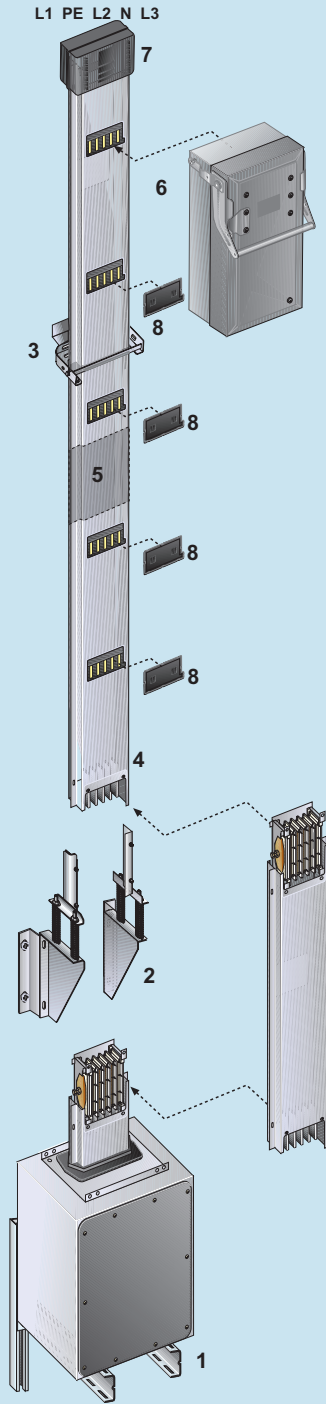
**5 Use the straight length with fire barrier to maintain the fire resistance of the floor**  
Please specify the position of the internal fire barrier before placing an order (see p. 44)

**6 The tap-off box can be installed on the joint between the elements or on the outlets**

**7 At the end of the rising main use the end cover IP 55**

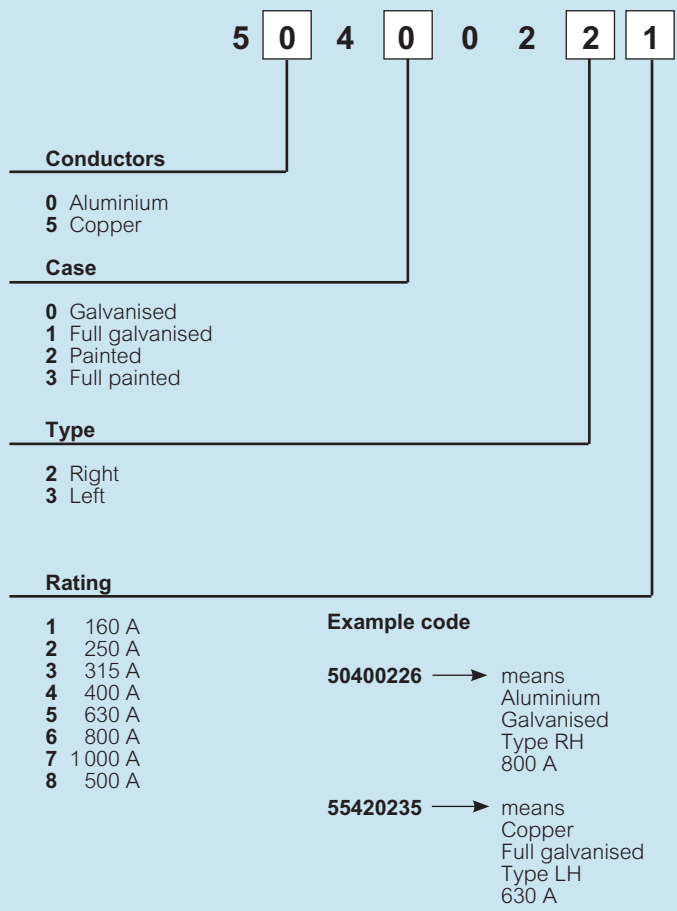
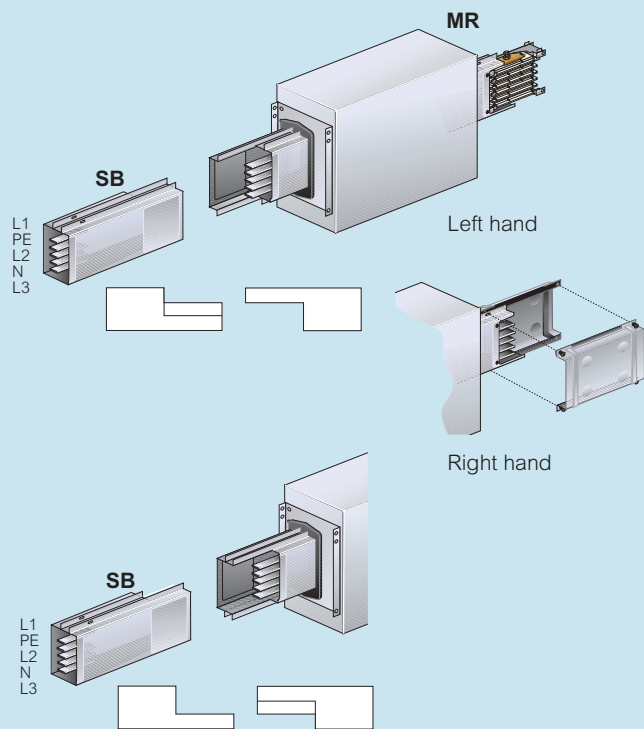
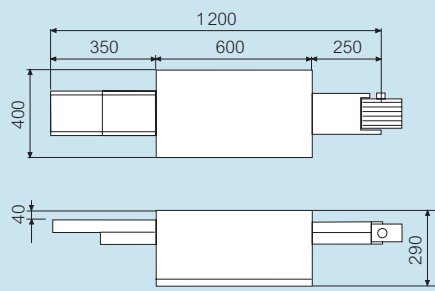
Before mounting the end cover remove the monobloc prefitted on the last element of rising main

**8 Maintain the plug outlet covers to guarantee the degree of protection IP 55 to the run**



# MR medium rating busbar

## how to create codes for SB/MR adaptors



**NOTE**  
SB is a previous range of Zucchini medium rating busbar

All dimensions (mm) are nominal

# MR medium rating busbar – 4 conductor (aluminium)

## technical data

Complies to :  
IEC 61439-6 (BS EN 61439-6)

Suitable for the following climates :  
Constant humid climate (IEC 60068 2 – 11)  
Cyclical humid climate (IEC 60068 2 – 30)

### 3L+N+PE (Aluminium)

		160	250	315	400	500	630	800	1000
Rated current	$I_n$ (A)	160	250	315	400	500	630	800	1000
Operational voltage	$U_e$ (V)	1000	1000	1000	1000	1000	1000	1000	690
Insulation voltage	$U_i$ (V)	1000	1000	1000	1000	1000	1000	1000	690
Frequency	$f$ (Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated shortcircuit current withstand for 3-phase fault (1 s)	$I_{cw}$ (kA) <sub>rms</sub>	15 <sup>1</sup>	25 <sup>1</sup>	25 <sup>1</sup>	25	30	36	36	30
Specific Energy withstand for 3-phase fault	$I^2t$ (M A <sup>2</sup> s)	23	63	63	625	900	1296	1296	900
Peak current	$I_{pk}$ (kA)	30	53	53	53	63	76	76	63
Rated short-time current for single-phase fault Ph-N(1 s)	$I_{cw}$ (kA) <sub>rms</sub>	9 <sup>1</sup>	15 <sup>1</sup>	15 <sup>1</sup>	15	18	22	22	18
Peak current for single-phase fault Ph-N	$I_{pk}$ (kA)	15	30	30	30	36	45	45	36
Rated short-time current single-phase fault Ph-PE (1 s)	$I_{cw}$ (kA) <sub>rms</sub>	9 <sup>1</sup>	15 <sup>1</sup>	15 <sup>1</sup>	15	18	22	22	18
Peak current single-phase fault Ph-PE	$I_{pk}$ (kA)	15	30	30	30	36	45	45	36
Phase resistance at 20°C	$R_{20}$ (mΩ/m)	0.492	0.328	0.197	0.120	0.077	0.060	0.052	0.037
Phase resistance at thermal conditions ( $I_n$ ; 40°C)	$R_t$ (mΩ/m)	0.665	0.443	0.266	0.163	0.104	0.081	0.070	0.073
Phase reactance (50 Hz)	$X$ (mΩ/m)	0.260	0.202	0.186	0.130	0.110	0.097	0.096	0.076
Neutral resistance at 20°C	$R_{n20}$ (mΩ/m)	0.492	0.328	0.197	0.120	0.077	0.060	0.052	0.037
Neutral reactance (50 Hz)	$X_n$ (mΩ/m)	0.260	0.202	0.186	0.130	0.110	0.097	0.096	0.076
Resistance of the protective bar	$R_{PE}$ (mΩ/m)	0.341	0.341	0.341	0.283	0.283	0.283	0.283	0.283
Reactance of the protective bar (50 Hz)	$X_{PE}$ (mΩ/m)	0.220	0.220	0.220	0.180	0.180	0.180	0.180	0.180
Resistance of the phase-Pe fault loop	$R_{Ph-Pe}$ fault loop (mΩ/m)	1.006	0.784	0.607	0.445	0.387	0.364	0.353	0.336
Reactance of the phase-Pe fault loop (50 Hz)	$X_{R_{Ph-Pe}}$ fault loop (mΩ/m)	0.480	0.414	0.396	0.333	0.333	0.283	0.275	0.273
Resistance of the phase-neutral fault loop	$R_{Ph-N}$ fault loop (mΩ/m)	1.157	0.771	0.463	0.283	0.181	0.141	0.121	0.093
Reactance of the phase-neutral fault loop (50 Hz)	$X_{R_{Ph-N}}$ fault loop (mΩ/m)	0.480	0.422	0.406	0.310	0.290	0.277	0.276	0.186
Voltage "k" drop coeff. with distributed load (k)	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 0.70$	564	394	276	179	131	109	102	90
	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 0.75$	581	404	279	180	130	108	100	88
	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 0.80$	596	412	281	180	129	107	98	85
	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 0.85$	608	418	281	179	127	104	95	82
	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 0.90$	616	422	277	176	122	100	91	77
	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 0.95$	617	419	269	169	115	93	83	69
	$\Delta v$ (V/m/A) $10^{-6} \cos\varphi = 1.00$	576	384	230	141	90	70	60	46
Losses for the Joule effect at nominal current	$P$ (W/m)	51	83	79	78	78	97	134	160
Fire load	(kWh/m)	1.3	1.3	1.3	1.8	1.8	1.8	1.8	1.8
Weight	(kg/m)	7.4	7.7	8.4	10.7	12.3	13.8	14.7	15.9
Overall dimensions of the busbar	$L \times H$ (mm)	75 x 196	75 x 196	75 x 196	135 x 196	135 x 196	135 x 196	135 x 196	135 x 196
Degree of protection (IEC 60529)	IP	52-55	52-55	52-55	52-55	52-55	52-55	52-55	52-55
IK code IEC 60068-2-62	IK	10	10	10	10	10	10	10	10

1 : Values for 0.1 s

### Temperature rating schedule

Mean room temperature (°C)	15	20	25	30	35	40	45	50	55	60
K1 factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

Multiplier coefficient of nominal rating for room temperature values different from 40°C

# MR medium rating busbar – 4 conductor (copper)

## technical data

Complies to :  
IEC 61439-6 (BS EN 61439-6)

Suitable for the following climates :  
Constant humid climate (IEC 60068 2 – 11)  
Cyclical humid climate (IEC 60068 2 – 30)

### 3L+N+PE (Copper)

	In (A)	250	315	400	630	800	1000
Rated current	In (A)	250	315	400	630	800	1000
Operational voltage	Ue (V)	1000	1000	1000	1000	1000	1000
Insulation voltage	Ui (V)	1000	1000	1000	1000	1000	1000
Frequency	f (Hz)	50/60	50/60	50/60	50/60	50/60	50/60
Rated shortcircuit current withstand for 3-phase fault (1 s)	I <sub>cs</sub> (kA) <sub>rms</sub>	25'	25'	30'	36	36	36
Specific Energy withstand for 3-phase fault	I <sup>2</sup> t (M A <sup>2</sup> s)	63	63	90	1296	1296	1296
Peak current	I <sub>pk</sub> (kA)	53	53	63	76	76	76
Rated short-time current for single-phase fault Ph-N(1 s)	I <sub>cs</sub> (kA) <sub>rms</sub>	15'	15'	18'	22	22	22
Peak current for single-phase fault Ph-N	I <sub>pk</sub> (kA)	30	30	36	45	45	45
Rated short-time current single-phase fault Ph-PE (1 s)	I <sub>cs</sub> (kA) <sub>rms</sub>	15'	15'	18'	22	22	22
Peak current single-phase fault Ph-PE	I <sub>pk</sub> (kA)	30	30	36	45	45	45
Phase resistance at 20°C	R <sub>20</sub> (mΩ/m)	0.237	0.180	0.096	0.061	0.040	0.032
Phase resistance at thermal conditions (I <sub>n</sub> ; 40°C)	R <sub>t</sub> (mΩ/m)	0.320	0.243	0.129	0.082	0.053	0.043
Phase reactance (50 Hz)	X (mΩ/m)	0.205	0.188	0.129	0.122	0.122	0.120
Neutral resistance at 20°C	R <sub>N20</sub> (mΩ/m)	0.237	0.180	0.096	0.061	0.040	0.032
Neutral reactance (50 Hz)	X <sub>n</sub> (mΩ/m)	0.205	0.188	0.129	0.122	0.122	0.120
Resistance of the protective bar	R <sub>PE</sub> (mΩ/m)	0.336	0.336	0.336	0.279	0.279	0.279
Reactance of the protective bar (50 Hz)	X <sub>PE</sub> (mΩ/m)	0.220	0.220	0.220	0.180	0.180	0.180
Resistance of the phase-Pe fault loop	R <sub>Ph-Pe fault loop</sub> (mΩ/m)	0.657	0.579	0.466	0.361	0.332	0.322
Reactance of the phase-Pe fault loop (50 Hz)	X <sub>RPh-Pe fault loop</sub> (mΩ/m)	0.425	0.408	0.349	0.302	0.302	0.300
Resistance of the phase-neutral fault loop	R <sub>Ph-N fault loop</sub> (mΩ/m)	0.558	0.423	0.225	0.143	0.093	0.074
Reactance of the phase-neutral fault loop (50 Hz)	X <sub>RPh-N fault loop</sub> (mΩ/m)	0.425	0.408	0.349	0.302	0.302	0.300
Voltage "k" drop coeff. with distributed load (k)	$\Delta v (V/m/A)10^{-6} \cos\varphi = 0.70$	321	263	158	125	108	100
	$\Delta v (V/m/A)10^{-6} \cos\varphi = 0.75$	326	265	158	123	105	96
	$\Delta v (V/m/A)10^{-6} \cos\varphi = 0.80$	329	266	157	120	100	92
	$\Delta v (V/m/A)10^{-6} \cos\varphi = 0.85$	329	264	154	116	95	86
	$\Delta v (V/m/A)10^{-6} \cos\varphi = 0.90$	327	260	149	110	88	79
	$\Delta v (V/m/A)10^{-6} \cos\varphi = 0.95$	319	251	141	101	77	68
	$\Delta v (V/m/A)10^{-6} \cos\varphi = 1.00$	277	210	112	71	46	37
Losses for the Joule effect at nominal current	P (W/m)	60	72	62	98	103	128
Fire load	(kWh/m)	1.3	1.3	1.3	1.8	1.8	1.8
Weight	(kg/m)	9.3	10.2	13.3	18.2	23.9	27.9
Overall dimensions of the busbar	L x H (mm)	75 x 196	75 x 196	135 x 196	135 x 196	135 x 196	135 x 196
Degree of protection (IEC 60529)	IP	52-55	52-55	52-55	52-55	52-55	52-55
IK code IEC 60068-2-62	IK	10	10	10	10	10	10

1 : Values for 0.1 s

### Temperature rating schedule

Mean room temperature (°C)	15	20	25	30	35	40	45	50	55	60
K1 factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

Multiplier coefficient of nominal rating for room temperature values different from 40°C

# MR medium rating busbar – five conductor (aluminium)

## technical data

Complies to :  
IEC 61439-6 (BS EN 61439-6)

Suitable for the following climates :  
Constant humid climate (IEC 60068 2 – 11)  
Cyclical humid climate (IEC 60068 2 – 30)

### 3L+N 100% +PE 100% (Aluminium)

		160	250	315	400	500	630	800	1000
Rated current	$I_n$ (A)	160	250	315	400	500	630	800	1000
Operational voltage	$U_e$ (V)	1000	1000	1000	1000	1000	1000	1000	690
Insulation voltage	$U_i$ (V)	1000	1000	1000	1000	1000	1000	1000	690
Frequency	$f$ (Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated shortcircuit current withstand for 3-phase fault (1 s)	$I_{cw}$ (kA) <sub>rms</sub>	15 <sup>1</sup>	25 <sup>1</sup>	25 <sup>1</sup>	25	30	36	36	30
Specific Energy withstand for 3-phase fault	$I^2t$ (M A <sup>2</sup> s)	23	63	63	625	900	1296	1296	900
Peak current	$I_{pk}$ (kA)	30	53	53	53	63	76	76	63
Rated short-time current for single-phase fault Ph-N(1 s)	$I_{cw}$ (kA) <sub>rms</sub>	9 <sup>1</sup>	15 <sup>1</sup>	15 <sup>1</sup>	15	18	22	22	18
Peak current for single-phase fault Ph-N	$I_{pk}$ (kA)	15	30	30	30	36	45	45	36
Rated short-time current single-phase fault Ph-PE (1 s)	$I_{cw}$ (kA) <sub>rms</sub>	9 <sup>1</sup>	15 <sup>1</sup>	15 <sup>1</sup>	15	18	22	22	22
Peak current single-phase fault Ph-PE	$I_{pk}$ (kA)	15	30	30	30	36	45	45	45
Phase resistance at 20°C	$R_{20}$ (mΩ/m)	0.492	0.328	0.197	0.120	0.077	0.060	0.052	0.039
Phase resistance at thermal conditions ( $I_n$ ; 40°C)	$R_t$ (mΩ/m)	0.665	0.443	0.266	0.163	0.104	0.081	0.070	0.053
Phase reactance (50 Hz)	$X$ (mΩ/m)	0.260	0.202	0.186	0.130	0.110	0.097	0.096	0.093
Neutral resistance at 20°C	$R_{n20}$ (mΩ/m)	0.492	0.328	0.197	0.120	0.077	0.060	0.052	0.039
Neutral reactance (50 Hz)	$X_n$ (mΩ/m)	0.260	0.202	0.186	0.130	0.110	0.097	0.096	0.093
Resistance of the protective bar	$R_{PE}$ (mΩ/m)	0.202	0.167	0.125	0.084	0.060	0.050	0.044	0.034
Reactance of the protective bar (50 Hz)	$X_{PE}$ (mΩ/m)	0.119	0.105	0.101	0.075	0.068	0.063	0.063	0.061
Resistance of the phase-Pe fault loop	$R_{Ph-Pe}$ fault loop (mΩ/m)	0.866	0.611	0.391	0.247	0.164	0.131	0.113	0.087
Reactance of the phase-Pe fault loop (50 Hz)	$X_{R_{Ph-Pe}}$ fault loop (mΩ/m)	0.379	0.307	0.287	0.205	0.178	0.160	0.159	0.154
Resistance of the phase-neutral fault loop	$R_{Ph-N}$ fault loop (mΩ/m)	1.157	0.771	0.463	0.283	0.181	0.141	0.121	0.093
Reactance of the phase-neutral fault loop (50 Hz)	$X_{R_{Ph-N}}$ fault loop (mΩ/m)	0.520	0.404	0.372	0.260	0.220	0.194	0.192	0.186
Voltage "k" drop coeff. with distributed load (k)	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 0.70$	564	394	276	179	131	109	102	90
	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 0.75$	581	404	279	180	130	108	100	88
	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 0.80$	596	412	281	180	129	107	98	85
	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 0.85$	608	418	281	179	127	104	95	82
	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 0.90$	616	422	277	176	122	100	91	77
	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 0.95$	617	419	269	169	115	93	83	69
	$\Delta v$ (V/m/A) $10^{-6} \cos\phi = 1.00$	576	384	230	141	90	70	60	46
Losses for the Joule effect at nominal current	$P$ (W/m)	51	83	79	78	78	97	134	160
Fire load	(kWh/m)	1.3	1.3	1.3	1.8	1.8	1.8	1.8	1.8
Weight	(kg/m)	7.6	8.0	8.9	11.4	13.5	15.2	16.4	17.9
Overall dimensions of the busbar	$L \times H$ (mm)	75 x 196	75 x 196	75 x 196	135 x 196	135 x 196	135 x 196	135 x 196	135 x 196
Degree of protection (IEC 60529)	IP	52-55	52-55	52-55	52-55	52-55	52-55	52-55	52-55
IK code IEC 60068-2-62	IK	10	10	10	10	10	10	10	10

1 : Values for 0.1 s

### Temperature rating schedule

Mean room temperature (°C)	15	20	25	30	35	40	45	50	55	60
K1 factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

Multiplier coefficient of nominal rating for room temperature values different from 40°C



# MR medium rating busbar – five conductor (copper)

## technical data

Complies to :  
IEC 61439-6 (BS EN 61439-6)

Suitable for the following climates :  
Constant humid climate (IEC 60068 2 – 11)  
Cyclical humid climate (IEC 60068 2 – 30)

3L+N 100% +PE 100% (Copper)							
Rated current	$I_n$ (A)	250	315	400	630	800	1000
Operational voltage	$U_e$ (V)	1000	1000	1000	1000	1000	1000
Insulation voltage	$U_i$ (V)	1000	1000	1000	1000	1000	1000
Frequency	$f$ (Hz)	50/60	50/60	50/60	50/60	50/60	50/60
Rated shortcircuit current withstand for 3-phase fault (1 s)	$I_{cw}$ (kA) <sub>rms</sub>	25'	25'	30'	36	36	36
Specific Energy withstand for 3-phase fault	$I^2t$ (M A <sup>2</sup> s)	63	63	90	1296	1296	1296
Peak current	$I_{pk}$ (kA)	53	53	63	76	76	76
Rated short-time current for single-phase fault Ph-N(1 s)	$I_{cw}$ (kA) <sub>rms</sub>	15'	15'	18'	22	22	22
Peak current for single-phase fault Ph-N	$I_{pk}$ (kA)	30	30	36	45	45	45
Rated short-time current single-phase fault Ph-PE (1 s)	$I_{cw}$ (kA) <sub>rms</sub>	15'	15'	18'	22	22	22
Peak current single-phase fault Ph-PE	$I_{pk}$ (kA)	30	30	36	45	45	45
Phase resistance at 20°C	$R_{20}$ (mΩ/m)	0.237	0.180	0.096	0.061	0.040	0.032
Phase resistance at thermal conditions ( $I_n$ ; 40°C)	$R_t$ (mΩ/m)	0.320	0.243	0.129	0.082	0.053	0.043
Phase reactance (50 Hz)	$X$ (mΩ/m)	0.205	0.188	0.129	0.122	0.122	0.120
Neutral resistance at 20°C	$R_{n20}$ (mΩ/m)	0.237	0.180	0.096	0.061	0.040	0.032
Neutral reactance (50 Hz)	$X_n$ (mΩ/m)	0.205	0.188	0.129	0.122	0.122	0.120
Resistance of the protective bar	$R_{PE}$ (mΩ/m)	0.139	0.117	0.075	0.050	0.035	0.028
Reactance of the protective bar (50 Hz)	$X_{PE}$ (mΩ/m)	0.106	0.101	0.081	0.073	0.073	0.072
Resistance of the phase-Pe fault loop	$R_{Ph-Pe}$ fault loop (mΩ/m)	0.460	0.360	0.204	0.132	0.088	0.071
Reactance of the phase-Pe fault loop (50 Hz)	$X_{R_{Ph-Pe}}$ fault loop (mΩ/m)	0.311	0.289	0.210	0.195	0.195	0.192
Resistance of the phase-neutral fault loop	$R_{Ph-N}$ fault loop (mΩ/m)	0.558	0.423	0.225	0.143	0.093	0.074
Reactance of the phase-neutral fault loop (50 Hz)	$X_{R_{Ph-N}}$ fault loop (mΩ/m)	0.311	0.289	0.210	0.195	0.195	0.192
Voltage "k" drop coeff. with distributed load (k)	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 0.70	321	263	158	125	108	100
	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 0.75	326	265	158	123	105	96
	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 0.80	329	266	157	120	100	92
	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 0.85	329	264	154	116	95	86
	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 0.90	327	260	149	110	88	79
	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 0.95	319	251	141	101	77	68
	$\Delta v$ (V/m/A)10 <sup>-6</sup> cosφ = 1.00	277	210	112	71	46	37
Losses for the Joule effect at nominal current	$P$ (W/m)	60	72	62	98	103	128
Fire load	(kWh/m)	1.3	1.3	1.3	1.8	1.8	1.8
Weight	(kg/m)	10.0	11.1	14.9	20.8	27.9	32.9
Overall dimensions of the busbar	$L \times H$ (mm)	75 x 196	75 x 196	135 x 196	135 x 196	135 x 196	135 x 196
Degree of protection (IEC 60529)	IP	52-55	52-55	52-55	52-55	52-55	52-55
IK code IEC 60068-2-62	IK	10	10	10	10	10	10

1 : Values for 0.1 s

Temperature rating schedule										
Mean room temperature (°C)	15	20	25	30	35	40	45	50	55	60
K1 factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

Multiplier coefficient of nominal rating for room temperature values different from 40°C

# MR medium rating busbar

## determining the operating current of a busbar

In order to determine the correct busbar rating, the current must be established using the following criteria :

- 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  $\cos\varphi$  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 (edgeways, flat or vertical)

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

$$I_b = \frac{P_{TOT} \cdot \alpha \cdot \beta \cdot d}{\sqrt{3} \cdot U_e \cdot \cos\varphi_{medium}} \quad (A)$$

Where :

- $I_b$  operating current (A)
- $\alpha$  load diversity factor (.)
- $\beta$  load use factor (.)
- $d$  feed factor (.)
- $P_{TOT}$  sum of the total active power of installed loads (W)
- $U_e$  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  $k_1$  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 :

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

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

### 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  $\cos\varphi = 0.7$  the v.d. may be calculated with the coefficients of the voltage drop specified in the technical data table

$$\Delta v\% = 2b \cdot \frac{k \cdot I_b \cdot L}{V_n} \cdot 100$$

#### Defined :

- $I_b$  = the current that supplies the busbar (A)
  - $V_n$  = 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  $\cos\varphi$  (V/m/A) (see technical data table, p. 52-55)
- The current distribution factor "b" depends on how the circuit is fed and on the distribution of the electric loads along the busbar :

<b>b = 1</b>	Supplies at one end and load at the end of the line	
<b>b = 1/2</b>	Supplies at one end and with load evenly distributed	
<b>b = 1/4</b>	Supplies at both ends and with load evenly distributed	
<b>b = 1/4</b>	Central supply with loads at both ends	
<b>b = 1/8</b>	Central supply with load distributed evenly	

**Example :** MR 400 A Al for riser mains feed

- $I_b$  = 315 A operating current
  - b = 1** = supply from one end
  - k = 179** = see technical data table, p. 52-55
  - Cos $\varphi$**  = 0.85
  - L** = 30 m line length
  - V $_n$**  = 400 V operating voltage
- $$\Delta v\% = 1 \times \frac{179 \cdot 10^{-6} \cdot 315 \cdot 30}{400} \times 100 = 0.42\%$$

### Short circuit current

The short circuit current value  $I_{cw}$  that can be supported by Zucchini 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 (circuit breaker) 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

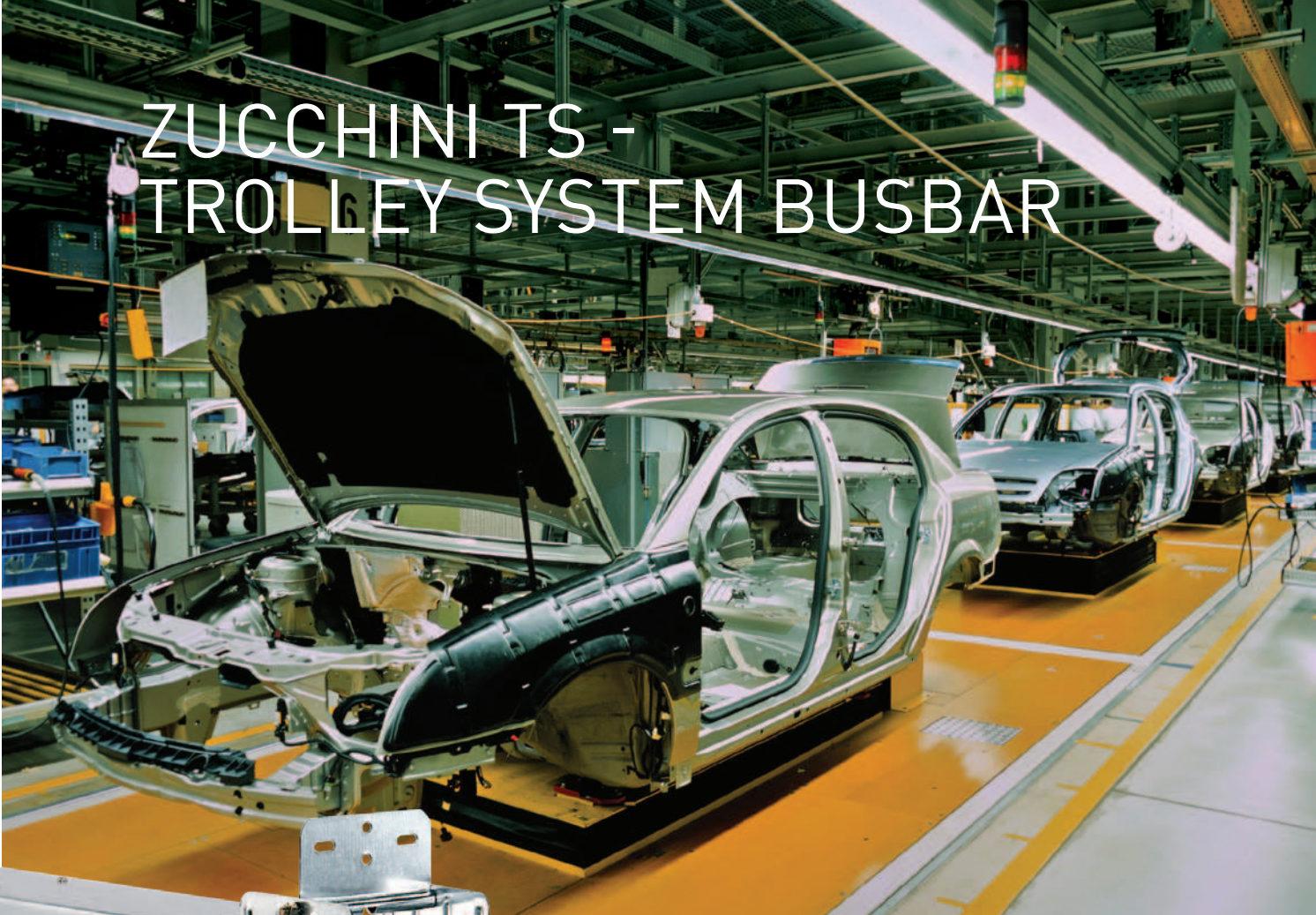
### Three phase rating

$$P = 3 \cdot R_t \cdot I_b^2 \cdot 10^{-3} (W/m)$$

### Single phase rating

$$P = 2 \cdot R_t \cdot I_b^2 \cdot 10^{-3} (W/m)$$

# ZUCCHINI TS - TROLLEY SYSTEM BUSBAR



The Zucchini TS busbar range is ideal for supplying 25 to 160 A three phase loads to moving devices such as overhead cranes, traversing motors, assembly lines, etc.

Suitable for straight and curved sections with horizontal route changes, TS busbar is quick and easy to install using an electrical terminal junction and a wide range of supporting accessories.

Versions include :

- 3L+N+PE (5 conductors)
- 3L+PE (4 conductors)



To find out more call our technical support team on  
**+44 (0) 370 608 9020**

# ZUCCHINI SCP

Offering maximum versatility in demanding commercial and industrial environments, SCP busbar is used to transport and distribute high power from 630 to 6300 A and is a popular choice for rising mains.

Compact design combined with powerful performance makes Zucchini SCP the intelligent choice for demanding installations

# super compact high power busbar

Zucchini SCP busbar trunking systems are ideal for the distribution of high power in industrial, commercial and service sector installations. Flexible and safe, SCP is continually developed to offer maximum versatility for all power applications, in any type of environment.

The high power, super compact Zucchini busbar range provides a complete solution whether connecting power supply stations or transformers to the main panel board, or transporting and distributing power around the building, including rising mains applications.



## SAFETY

Compact dimensions enhance SCP's resistance to short circuit stresses. Voltage drops can be controlled to reduce the impedance of the circuit and enable installation of high power electrical systems in confined spaces.

## MAINTENANCE

With the exception of the compulsory periodic inspections required by Standard BS 7671, the range is designed to be virtually maintenance free.

## FLEXIBILITY

Plug-in tap-off boxes provide connection and power supply of three phase loads from 63 to 1250 A. Thanks to the galvanised metal sheet construction, the boxes are suitable for heavy loads and for shielding the electromagnetic fields generated by the passage of current.



# ZUCCHINI SCP

fast, simple installation saves time and money on site

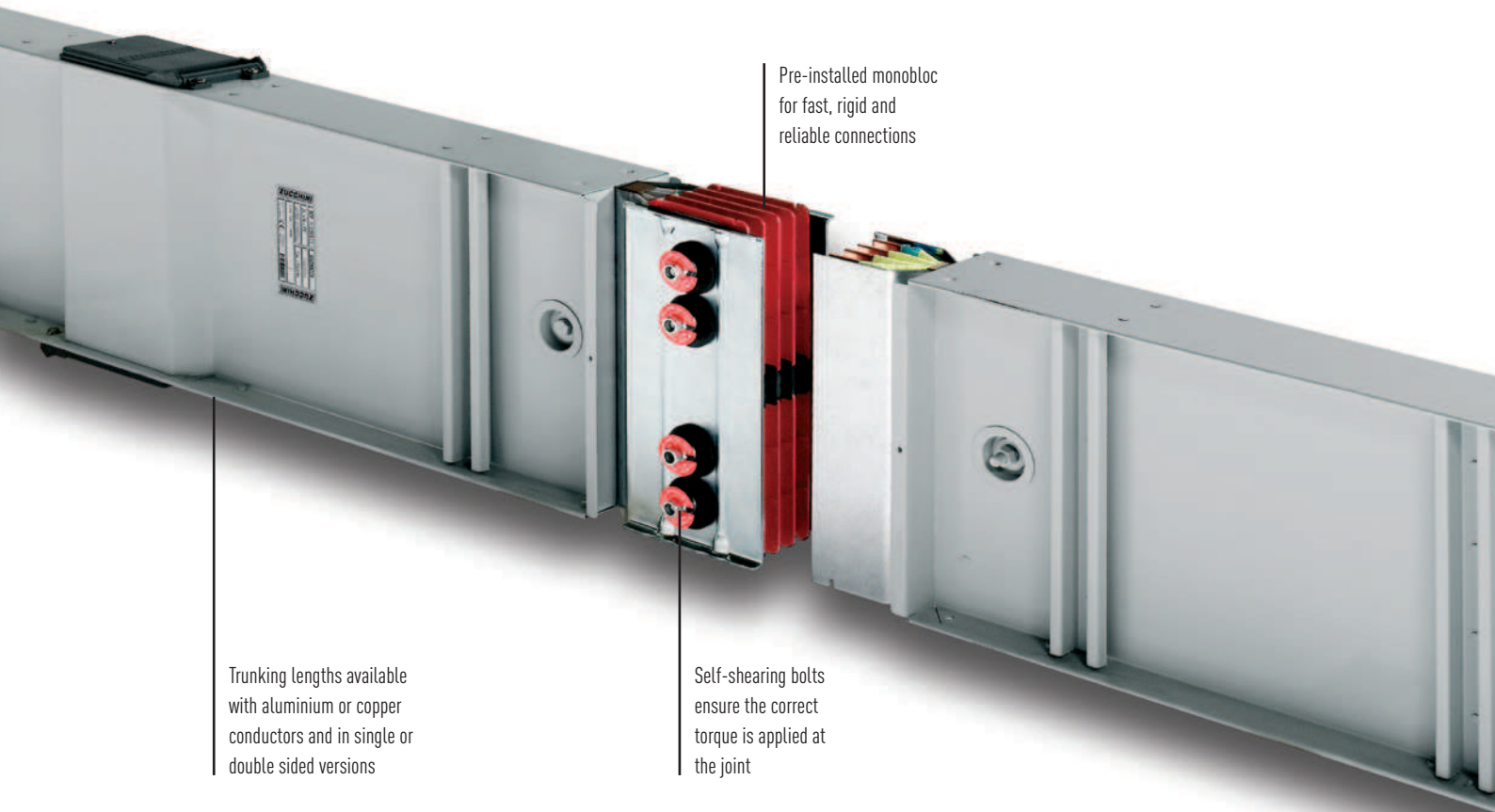


## INSTALLATION SIMPLICITY

Designed to work perfectly in conjunction with Legrand cast resin transformers, the SCP busbar range offers quick, reliable assembly with a vast combination of accessories for maximum flexibility. Conductors are available in a choice of copper or aluminium.

## PLANNING SIMPLICITY

A comprehensive range of standard products is further enhanced by Legrand's technical expertise and ability to create bespoke solutions tailored to any requirement. The SCP range can be manufactured in standard, clean earth or 200% neutral versions.



SWITCHBOARD -  
TRANSFORMER FEED UNIT



HORIZONTAL ELBOW



VERTICAL ELBOW



JOINT

## TRUSTED BY LEADING DEVELOPERS

Zucchini SCP high power busbar meets the quality and specification requirements of leading property developers and is installed in prestigious projects across the world.



# SCP super compact busbar

aluminium conductors

## TRUNKING LENGTHS

Rating (A)	Feeder lengths				
	Standard 3 m	Bespoke dimensions 1 to 1.5 m	Bespoke dimensions 1.5 to 2 m	Bespoke dimensions 2 to 2.5 m	Bespoke dimensions 2.5 to 3 m
630	60280100P	60280170P	60280120P	60280180P	60280150P
800	60280101P	60280171P	60280121P	60280181P	60280151P
1000	60280102P	60280172P	60280122P	60280182P	60280152P
1250	60280104P	60280174P	60280124P	60280184P	60280154P
1600	60280106P	60280176P	60280126P	60280186P	60280156P
2000	60280107P	60280177P	60280127P	60280187P	60280157P
2500	60390104P	60390174P	60390124P	60390184P	60390154P
3200	60390106P	60390176P	60390126P	60390186P	60390156P
4000	60390107P	60390177P	60390127P	60390187P	60390157P

## ELBOWS AND TEES

Rating (A)	Horizontal elbows				Vertical elbows				Double horizontal elbows	
	Standard dimensions		Bespoke dimensions		Standard dimensions		Bespoke dimensions		Bespoke dimensions	
	Right hand	Left hand	Right hand	Left hand	Right hand	Left hand	Right hand	Left hand	Left + right hand	Right + left hand
630	60280300P	60280310P	60280320P	60280330P	60280400P	60280410P	60280420P	60280430P	60280350P	60280340P
800	60280301P	60280311P	60280321P	60280331P	60280401P	60280411P	60280421P	60280431P	60280351P	60280341P
1000	60280302P	60280312P	60280322P	60280332P	60280402P	60280412P	60280422P	60280432P	60280352P	60280342P
1250	60280304P	60280314P	60280324P	60280334P	60280404P	60280414P	60280424P	60280434P	60280354P	60280344P
1600	60280306P	60280316P	60280326P	60280336P	60280406P	60280416P	60280426P	60280436P	60280356P	60280346P
2000	60280307P	60280317P	60280327P	60280337P	60280407P	60280417P	60280427P	60280437P	60280357P	60280347P
2500	60390304P	60390314P	60390324P	60390334P	60390404P	60390414P	60390424P	60390434P	60390354P	60390344P
3200	60390306P	60390316P	60390326P	60390336P	60390406P	60390416P	60390426P	60390436P	60390356P	60390346P
4000	60390307P	60390317P	60390327P	60390337P	60390407P	60390417P	60390427P	60390437P	60390357P	60390347P

## CONNECTION INTERFACES

Rating (A)	Connection interfaces				Connection interfaces + horizontal elbows			
	Standard dimensions		Bespoke dimensions		Bespoke dimensions			
	Type 1 male	Type 2 female	Type 1 male	Type 2 female	Type 1 female	Type 2 female	Type 3 male	Type 4 male
630	60281010P	60281000P	60281030P	60281020P	60281300P	60281310P	60281320P	60281330P
800	60281011P	60281001P	60281031P	60281021P	60281301P	60281311P	60281321P	60281331P
1000	60281012P	60281002P	60281032P	60281022P	60281302P	60281312P	60281322P	60281332P
1250	60281014P	60281004P	60281034P	60281024P	60281304P	60281314P	60281324P	60281334P
1600	60281016P	60281006P	60281036P	60281026P	60281306P	60281316P	60281326P	60281336P
2000	60281017P	60281007P	60281037P	60281027P	60281307P	60281317P	60281327P	60281337P
2500	60391014P	60391004P	60391034P	60391024P	60391304P	60391314P	60391324P	60391334P
3200	60391016P	60391006P	60391036P	60391026P	60391306P	60391316P	60391326P	60391336P
4000	60391017P	60391007P	60391037P	60391027P	60391307P	60391317P	60391327P	60391337P



Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting  
 the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown opposite

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

### TRUNKING LENGTHS

Distribution lengths			Expansion lengths	Transposition lengths		Fire barriers	
3 m – 3 + 3 outlets	2 m – 2 + 2 outlets	1 m – 1 + 1 outlets		Phase transposition	Neutral rotation	Internal	External
60280130P	60280260P	60280280P	60280290P	60287100P	60287140P	653IFB01	652EFB01
60280131P	60280261P	60280281P	60280291P	60287101P	60287141P	–	652EFB01
60280132P	60280262P	60280282P	60280292P	60287102P	60287142P	–	652EFB01
60280134P	60280264P	60280284P	60280294P	60287104P	60287144P	–	652EFB01
60280136P	60280266P	60280286P	60280296P	60287106P	60287146P	–	652EFB02
60280137P	60280267P	60280287P	60280297P	60287107P	60287147P	–	652EFB04
60390134P	60390264P	60390284P	60390294P	60397104P	60397144P	653IFB01	653EFB02
60390136P	60390266P	60390286P	60390296P	60397106P	60397146P	653IFB01	653EFB03
60390137P	60390267P	60390287P	60390297P	60397107P	60397147P	653IFB01	653EFB04

### ELBOWS AND TEES

Double vertical elbows		Vertical tees				Horizontal tees			
Bespoke dimensions		Bespoke dimensions				Bespoke dimensions			
Left + right hand	Right + left hand	Right hand female 300 to 1 499 mm	Right hand male 300 to 1 499 mm	Left hand male 300 to 1 499 mm	Left hand female 300 to 1 499 mm	Right hand female 550 to 1 049 mm	Right hand male 550 to 1 049 mm	Left hand male 550 to 1 049 mm	Left hand female 550 to 1 049 mm
60280450P	60280440P	60280800P	60280810P	60280820P	60280830P	60280700P	60280710P	60280720P	60280730P
60280451P	60280441P	60280801P	60280811P	60280821P	60280831P	60280701P	60280711P	60280721P	60280731P
60280452P	60280442P	60280802P	60280812P	60280822P	60280832P	60280702P	60280712P	60280722P	60280732P
60280454P	60280444P	60280804P	60280814P	60280824P	60280834P	60280704P	60280714P	60280724P	60280734P
60280456P	60280446P	60280806P	60280816P	60280826P	60280836P	60280706P	60280716P	60280726P	60280736P
60280457P	60280447P	60280807P	60280817P	60280827P	60280837P	60280707P	60280717P	60280727P	60280737P
60390454P	60390444P	60390804P	60390814P	60390824P	60390834P	60390704P	60390714P	60390724P	60390734P
60390456P	60390446P	60390806P	60390816P	60390826P	60390836P	60390706P	60390716P	60390726P	60390736P
60390457P	60390447P	60390807P	60390817P	60390827P	60390837P	60390707P	60390717P	60390727P	60390737P

### CONNECTION INTERFACES

### FEED UNITS AND END STOPS

Connection interfaces + vertical elbows				End feed units		End stops
Bespoke dimensions						
Type 1 female	Type 2 female	Type 3 male	Type 4 male	Type 1 male	Type 2 female	
60281400P	60281410P	60281420P	60281430P	60281110P	60281100P	65283101P
60281401P	60281411P	60281421P	60281431P	60281111P	60281101P	65283101P
60281402P	60281412P	60281422P	60281432P	60281112P	60281102P	65283101P
60281404P	60281414P	60281424P	60281434P	60281114P	60281104P	65283101P
60281406P	60281416P	60281426P	60281436P	60281116P	60281106P	65283102P
60281407P	60281417P	60281427P	60281437P	60281117P	60281107P	65283104P
60391404P	60391414P	60391424P	60391434P	60391114P	60391104P	65393102P
60391406P	60391416P	60391426P	60391436P	60391116P	60391106P	65393103P
60391407P	60391417P	60391427P	60391437P	60391117P	60391107P	65393104P

# SCP super compact busbar

copper conductors

## TRUNKING LENGTHS

Rating (A)	Feeder lengths				
	Standard 3 m	Bespoke dimensions 1 to 1.5 m	Bespoke dimensions 1.5 to 2 m	Bespoke dimensions 2 to 2.5 m	Bespoke dimensions 2.5 to 3 m
800	65280100P	65280170P	65280120P	65280180P	65280150P
1000	65280101P	65280171P	65280121P	65280181P	65280151P
1250	65280103P	65280173P	65280123P	65280183P	65280153P
1600	65280105P	65280175P	65280125P	65280185P	65280155P
2000	65280106P	65280176P	65280126P	65280186P	65280156P
2500	65280108P	65280178P	65280128P	65280188P	65280158P
3200	65390105P	65390175P	65390125P	65390185P	65390155P
4000	65390106P	65390176P	65390126P	65390186P	65390156P
5000	65390108P	65390178P	65390128P	65390188P	65390158P

## ELBOWS AND TEES

Rating (A)	Horizontal elbows				Vertical elbows				Double horizontal elbows	
	Standard dimensions		Bespoke dimensions		Standard dimensions		Bespoke dimensions		Bespoke dimensions	
	Right hand	Left hand	Right hand	Left hand	Right hand	Left hand	Right hand	Left hand	Left + right hand	Right + left hand
800	65280300P	65280310P	65280320P	65280330P	65280400P	65280410P	65280420P	65280430P	65280350P	65280340P
1000	65280301P	65280311P	65280321P	65280331P	65280401P	65280411P	65280421P	65280431P	65280351P	65280341P
1250	65280303P	65280313P	65280323P	65280333P	65280403P	65280413P	65280423P	65280433P	65280353P	65280343P
1600	65280305P	65280315P	65280325P	65280335P	65280405P	65280415P	65280425P	65280435P	65280355P	65280345P
2000	65280306P	65280316P	65280326P	65280336P	65280406P	65280416P	65280426P	65280436P	65280356P	65280346P
2500	65280308P	65280318P	65280328P	65280338P	65280408P	65280418P	65280428P	65280438P	65280358P	65280348P
3200	65390305P	65390315P	65390325P	65390335P	65390405P	65390415P	65390425P	65390435P	65390355P	65390345P
4000	65390306P	65390316P	65390326P	65390336P	65390406P	65390416P	65390426P	65390436P	65390356P	65390346P
5000	65390308P	65390318P	65390328P	65390338P	65390408P	65390418P	65390428P	65390438P	65390358P	65390348P

## CONNECTION INTERFACES

Rating (A)	Connection interfaces				Connection interfaces + horizontal elbows			
	Standard dimensions		Bespoke dimensions		Bespoke dimensions			
	Type 1 male	Type 2 female	Type 1 male	Type 2 female	Type 1 female	Type 2 female	Type 3 male	Type 4 male
800	65281010P	65281000P	65281030P	65281020P	65281300P	65281310P	65281320P	65281330P
1000	65281011P	65281001P	65281031P	65281021P	65281301P	65281311P	65281321P	65281331P
1250	65281013P	65281003P	65281033P	65281023P	65281303P	65281313P	65281323P	65281333P
1600	65281015P	65281005P	65281035P	65281025P	65281305P	65281315P	65281325P	65281335P
2000	65281016P	65281006P	65281036P	65281026P	65281306P	65281316P	65281326P	65281336P
2500	65281018P	65281008P	65281038P	65281028P	65281308P	65281318P	65281328P	65281338P
3200	65391015P	65391005P	65391035P	65391025P	65391305P	65391315P	65391325P	65391335P
4000	65391016P	65391006P	65391036P	65391026P	65391306P	65391316P	65391326P	65391336P
5000	65391018P	65391008P	65391038P	65391028P	65391308P	65391318P	65391328P	65391338P

Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting  
 the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown opposite

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

### TRUNKING LENGTHS

Distribution lengths			Expansion lengths	Transposition lengths		Fire barriers	
3 m – 3 + 3 outlets	2 m – 2 + 2 outlets	1 m – 1 + 1 outlets		Phase transposition	Neutral rotation	Internal	External
65280130P	65280260P	65280280P	65280290P	65287100P	65287140P	653IFB01	652EFB51
65280131P	65280261P	65280281P	65280291P	65287101P	65287141P	–	652EFB51
65280133P	65280263P	65280283P	65280293P	65287103P	65287143P	–	652EFB51
65280135P	65280265P	65280285P	65280295P	65287105P	65287145P	–	652EFB52
65280136P	65280266P	65280286P	65280296P	65287106P	65287146P	–	652EFB52
65280138P	65280268P	65280288P	65280298P	65287108P	65287148P	–	652EFB54
65390135P	65390265P	65390285P	65390295P	65397105P	65397145P	653IFB01	653EFB52
65390136P	65390266P	65390286P	65390296P	65397106P	65397146P	653IFB01	653EFB53
65390138P	65390268P	65390288P	65390298P	65397108P	65397148P	653IFB01	653EFB54

### ELBOWS AND TEES

Double vertical elbows		Vertical tees				Horizontal tees			
Bespoke dimensions		Bespoke dimensions				Bespoke dimensions			
Left + right hand	Right + left hand	Right hand female 300 to 1 499 mm	Right hand male 300 to 1 499 mm	Left hand male 300 to 1 499 mm	Left hand female 300 to 1 499 mm	Right hand female 550 to 1 049 mm	Right hand male 550 to 1 049 mm	Left hand male 550 to 1 049 mm	Left hand female 550 to 1 049 mm
65280450P	65280440P	65280800P	65280810P	65280820P	65280830P	65280700P	65280710P	65280720P	65280730P
65280451P	65280441P	65280801P	65280811P	65280821P	65280831P	65280701P	65280711P	65280721P	65280731P
65280453P	65280443P	65280803P	65280813P	65280823P	65280833P	65280703P	65280713P	65280723P	65280733P
65280455P	65280445P	65280805P	65280815P	65280825P	65280835P	65280705P	65280715P	65280725P	65280735P
65280456P	65280446P	65280806P	65280816P	65280826P	65280836P	65280706P	65280716P	65280726P	65280736P
65280458P	65280448P	65280808P	65280818P	65280828P	65280838P	65280708P	65280718P	65280728P	65280738P
65390455P	65390445P	65390805P	65390815P	65390825P	65390835P	65390705P	65390715P	65390725P	65390735P
65390456P	65390446P	65390806P	65390816P	65390826P	65390836P	65390706P	65390716P	65390726P	65390736P
65390458P	65390448P	65390808P	65390818P	65390828P	65390838P	65390708P	65390718P	65390728P	65390738P

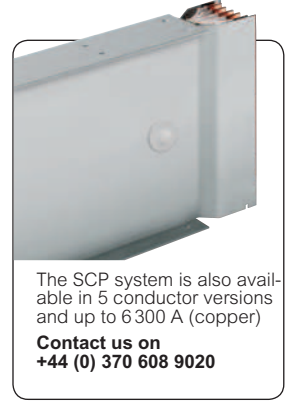
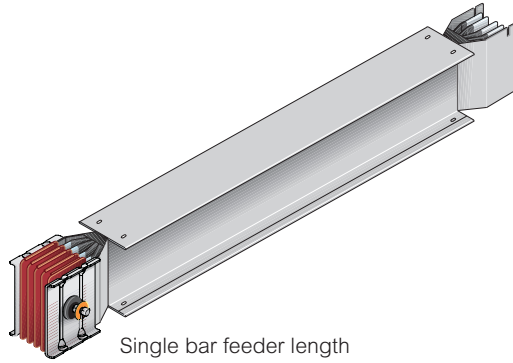
### CONNECTION INTERFACES

### FEED UNITS AND END STOPS

Connection interfaces + vertical elbows				End feed units		End stops
Bespoke dimensions						
Type 1 female	Type 2 female	Type 3 male	Type 4 male	Type 1 male	Type 2 female	
65281400P	65281410P	65281420P	65281430P	65281110P	65281100P	65283101P
65281401P	65281411P	65281421P	65281431P	65281111P	65281101P	65283101P
65281403P	65281413P	65281423P	65281433P	65281113P	65281103P	65283101P
65281405P	65281415P	65281425P	65281435P	65281115P	65281105P	65283102P
65281406P	65281416P	65281426P	65281436P	65281116P	65281106P	65283102P
65281408P	65281418P	65281428P	65281438P	65281118P	65281108P	65283104P
65391405P	65391415P	65391425P	65391435P	65391115P	65391105P	65393102P
65391406P	65391416P	65391426P	65391436P	65391116P	65391106P	65393103P
65391408P	65391418P	65391428P	65391438P	65391118P	65391108P	65393104P

# SCP super compact busbar

## feeder lengths



Selection charts **p. 62-65**  
Dimensions and technical information **p. 95**  
Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
SCP complies with IEC 61439-6 (BS EN 61439-6)  
Supplied with electrical junction monobloc system pre-installed

Pack	Cat. Nos.		Feeder lengths – standard 3 m
	Aluminium	Copper	For runs exceeding 40 m an expansion length should be included (see p. 68)
			<b>3000 mm single bar</b>
			Rating (A)
1	60280100P		630
1	60280101P	65280100P	800
1	60280102P	65280101P	1000
1	60280104P	65280103P	1250
1	60280106P	65280105P	1600
1	60280107P	65280106P	2000
1		65280108P	2500
			<b>3000 mm double bar</b>
			Rating (A)
1	60390104P		2500
1	60390106P	65390105P	3200
1	60390107P	65390106P	4000
1		65390108P	5000

Pack	Cat. Nos.		Feeder lengths – bespoke dimensions
	Aluminium	Copper	Please specify required length when ordering
			<b>1 000 - 1 500 mm single bar</b>
			Rating (A)
1	60280170P		630
1	60280171P	65280170P	800
1	60280172P	65280171P	1000
1	60280174P	65280173P	1250
1	60280176P	65280175P	1600
1	60280177P	65280176P	2000
1		65280178P	2500
			<b>1 000 - 1 500 mm double bar</b>
			Rating (A)
1	60390174P		2500
1	60390176P	65390175P	3200
1	60390177P	65390176P	4000
1		65390178P	5000
			<b>1501 - 2000 mm single bar</b>
			Rating (A)
1	60280120P		630
1	60280121P	65280120P	800
1	60280122P	65280121P	1000
1	60280124P	65280123P	1250
1	60280126P	65280125P	1600
1	60280127P	65280126P	2000
1		65280128P	2500

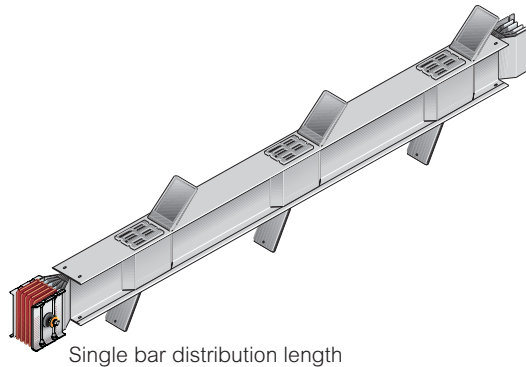
Pack	Cat. Nos.		Feeder lengths – bespoke dimensions (continued)
	Aluminium	Copper	Please specify required length when ordering
			<b>1501 - 2000 mm double bar</b>
			Rating (A)
1	60390124P		2500
1	60390126P	65390125P	3200
1	60390127P	65390126P	4000
1		65390128P	5000
			<b>2001 - 2500 mm single bar</b>
			Rating (A)
1	60280180P		630
1	60280181P	65280180P	800
1	60280182P	65280181P	1000
1	60280184P	65280183P	1250
1	60280186P	65280185P	1600
1	60280187P	65280186P	2000
1		65280188P	2500
			<b>2001 - 2500 mm double bar</b>
			Rating (A)
1	60390184P		2500
1	60390186P	65390185P	3200
1	60390187P	65390186P	4000
1		65390188P	5000
			<b>2501 - 2999 mm single bar</b>
			Rating (A)
1	60280150P		630
1	60280151P	65280150P	800
1	60280152P	65280151P	1000
1	60280154P	65280153P	1250
1	60280156P	65280155P	1600
1	60280157P	65280156P	2000
1		65280158P	2500
			<b>2501 - 2999 mm double bar</b>
			Rating (A)
1	60390154P		2500
1	60390156P	65390155P	3200
1	60390157P	65390156P	4000
1		65390158P	5000

Key : How to select the correct configuration of bar  
The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
All examples on this page show 4 conductor versions, ie. 8 or 9;  
5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

## distribution lengths



Single bar distribution length



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 95**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 Supplied with electrical junction monobloc system pre-installed

Pack	Cat. Nos.		Distribution lengths
			<b>For plug-in type tap-off boxes</b>
			For runs exceeding 40 m an expansion length should be included Tap-off outlets are spaced at 850 mm intervals on both sides and are provided with hinged safety covers to ensure maximum safety and maintain IP 55 protection
			<b>3 000 m single bar – 3 + 3 outlets<sup>2</sup></b>
	Aluminium	Copper	Rating (A)
1	60280130P <sup>1</sup>		630
1	60280131P	65280130P <sup>1</sup>	800
1	60280132P	65280131P	1000
1	60280134P	65280133P	1250
1	60280136P	65280135P	1600
1	60280137P	65280136P	2000
1		65280138P	2500
			<b>3 000 m double bar – 3 + 3 outlets<sup>2</sup></b>
			Rating (A)
1	60390134P		2500
1	60390136P	65390135P	3200
1	60390137P	65390136P	4000
1		65390138P	5000
			<b>2501 - 2999 mm single bar – 3 + 3 outlets<sup>2</sup></b>
			Rating (A)
1	60280950P <sup>1</sup>		630
1	60280951P	65280950P <sup>1</sup>	800
1	60280952P	65280951P	1000
1	60280954P	65280953P	1250
1	60280956P	65280955P	1600
1	60280957P	65280956P	2000
1		65280958P	2500
			<b>2501 - 2999 mm double bar – 3 + 3 outlets<sup>2</sup></b>
			Rating (A)
1	60390954P		2500
1	60390956P	65390955P	3200
1	60390957P	65390956P	4000
1		65390958P	5000
			<b>2001 - 2500 mm single bar – 2 + 2 outlets<sup>2</sup></b>
			Rating (A)
1	60280980P <sup>1</sup>		630
1	60280981P	65280980P <sup>1</sup>	800
1	60280982P	65280981P	1000
1	60280984P	65280983P	1250
1	60280986P	65280985P	1600
1	60280987P	65280986P	2000
1		65280988P	2500

1 : Lengths with tap-off outlets on top side only (3, 2 or 1 + 0)  
 2 : For other combination of outlets please contact us +44 (0) 370 608 9020

Pack	Cat. Nos.		Distribution lengths (continued)
			<b>2001 - 2500 mm double bar – 2 + 2 outlets<sup>2</sup></b>
			Rating (A)
1	Aluminium	Copper	2500
1	60390984P		3200
1	60390986P	65390985P	4000
1	60390987P	65390986P	5000
1		65390988P	
			<b>1501 - 2000 mm single bar – 2 + 2 outlets<sup>2</sup></b>
			Rating (A)
1	60280920P <sup>1</sup>		630
1	60280921P	65280920P <sup>1</sup>	800
1	60280922P	65280921P	1000
1	60280924P	65280923P	1250
1	60280926P	65280925P	1600
1	60280927P	65280926P	2000
1		65280928P	2500
			<b>1501 - 2000 mm double bar – 2 + 2 outlets<sup>2</sup></b>
			Rating (A)
1	60390924P		2500
1	60390926P	65390925P	3200
1	60390927P	65390926P	4000
1		65390928P	5000
			<b>1001 - 1500 mm single bar – 1 + 1 outlets</b>
			Rating (A)
1	60280970P <sup>1</sup>		630
1	60280971P	65280970P <sup>1</sup>	800
1	60280972P	65280971P	1000
1	60280974P	65280973P	1250
1	60280976P	65280975P	1600
1	60280977P	65280976P	2000
1		65280978P	2500
			<b>1001 - 1500 mm double bar – 1 + 1 outlets</b>
			Rating (A)
1	60390974P		2500
1	60390976P	65390975P	3200
1	60390977P	65390976P	4000
1		65390978P	5000

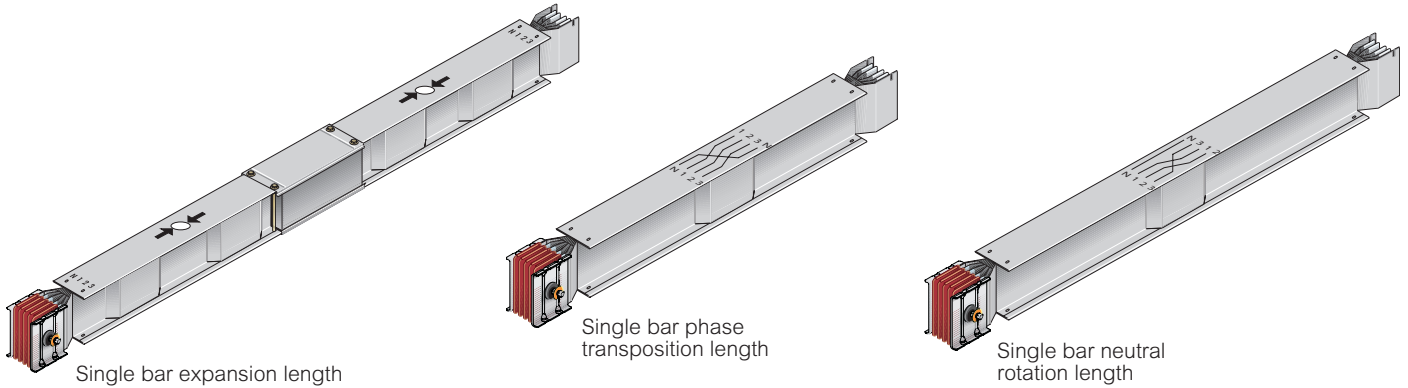
**For feed units and tap-off boxes** p. 77, 78-79

**Key : How to select the correct configuration of bar**  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

## expansion and transposition lengths



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 95**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 Supplied with electrical junction monobloc system pre-installed

Pack	Cat. Nos.		Expansion lengths
			<b>Standard – 3 m</b>
			Absorb the thermal expansion during normal use that, on long runs, would otherwise cumulate and put abnormal force on the connection points Expansion length is to be placed in straight runs of more than 40 m and repeated every 40 m
			<b>Single bar</b>
	Aluminium	Copper	Rating (A)
1	60280290P		630
1	60280291P	65280290P	800
1	60280292P	65280291P	1000
1	60280294P	65280293P	1250
1	60280296P	65280295P	1600
1	60280297P	65280296P	2000
1		65280298P	2500
			<b>Double bar</b>
			Rating (A)
1	60390294P		2500
1	60390296P	65390295P	3200
1	60390297P	65390296P	4000
1		65390298P	5000

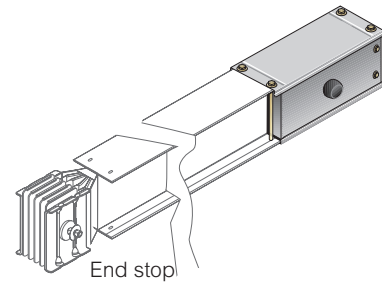
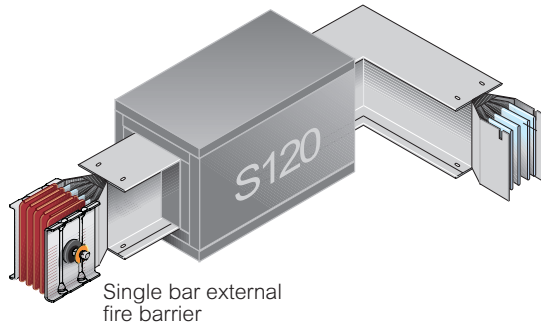
Pack	Cat. Nos.		Transposition lengths
			<b>Phase transposition – 1·2 m</b>
			In runs exceeding 100 m it is recommended to include two transposition lengths to balance mutual phase reactance and electric impedance (one at 1/3 and one at 2/3 distance of the run)
			<b>Single bar</b>
	Aluminium	Copper	Rating (A)
1	60287100P		630
1	60287101P	65287100P	800
1	60287102P	65287101P	1000
1	60287104P	65287103P	1250
1	60287106P	65287105P	1600
1	60287107P	65287106P	2000
1		65287108P	2500
			<b>Double bar</b>
			Rating (A)
1	60397104P		2500
1	60397106P	65397105P	3200
1	60397107P	65397106P	4000
1		65397108P	5000
			<b>Neutral rotation – 1·0 m</b>
			When the sequence of the distribution board phases is different to that of the transformer
			<b>Single bar</b>
			Rating (A)
1	60287140P		630
1	60287141P	65287140P	800
1	60287142P	65287141P	1000
1	60287144P	65287143P	1250
1	60287146P	65287145P	1600
1	60287147P	65287146P	2000
1		65287148P	2500
			<b>Double bar</b>
			Rating (A)
1	60397144P		2500
1	60397146P	65397145P	3200
1	60397147P	65397146P	4000
1		65397148P	5000

Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

## fire barriers and end stops



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 96**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 Supplied with electrical junction monobloc system pre-installed

Pack	Cat. Nos.	Internal fire barrier
1	653IFB01	Meets class S120 (EN 1366-3, DIN 4102-09) Internal fire barriers are not required for 800 to 2000 A aluminium systems, or 1000 to 2500 A copper systems but can be supplied with all other trunking components <b>Internal fire barrier</b>

		External fire barriers
		Meets class S120 (EN 1366-3, DIN 4102-09) External fire barriers can be used on any trunking component in compliance with the operating instructions (see p. 96) Please specify the required position of the fire barrier when ordering (see p. 96)
		External single bar
		Rating (A)
1	Aluminium	630, 800, 1000, 1250
1	652EFB01	1600
1	652EFB02	2000
1	652EFB04	800, 1000, 1250
1	Copper	652EFB51
1	652EFB52	1600, 2000
1	652EFB54	2500
		External double bar
		Rating (A)
1	653EFB02	2500
1	653EFB03	3200
1	653EFB04	4000
1	653EFB52	3200
1	653EFB53	4000
1	653EFB54	5000

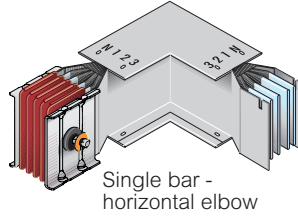
Pack	Cat. Nos.		End stops
			Maintain IP 55 protection at the end of the run
			Single bar
			Rating (A)
1	Aluminium	Copper	630 to 1250
1	65283101P	65283101P	800 to 1250
1	65283102P	65283102P	1600
1	65283104P	65283102P	1600 to 2000
1	65283104P	65283104P	2000
1			2500
			Double bar
			Rating (A)
1	65393102P	65393102P	2500
1	65393103P	65393103P	3200
1	65393103P	65393103P	3200
1	65393104P	65393103P	4000
1	65393104P	65393104P	4000
1			5000

Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

## horizontal elbows



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 96**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 Elbows are supplied with pre-installed monobloc and are able to change direction with standard or bespoke dimensions

Pack	Cat. Nos.		Horizontal elbows – standard 300 x 300 mm
	Aluminium	Copper	
1	60280300P		Rating (A) 630
1	60280301P	65280300P	800
1	60280302P	65280301P	1000
1	60280304P	65280303P	1250
1	60280306P	65280305P	1600
1	60280307P	65280306P	2000
1		65280308P	2500
			<b>Right hand – double bar</b>
			Rating (A)
1	60390304P		2500
1	60390306P	65390305P	3200
1	60390307P	65390306P	4000
1		65390308P	5000
			<b>Left hand – single bar</b>
			Rating (A)
1	60280310P		630
1	60280311P	65280310P	800
1	60280312P	65280311P	1000
1	60280314P	65280313P	1250
1	60280316P	65280315P	1600
1	60280317P	65280316P	2000
1		65280318P	2500
			<b>Left hand – double bar</b>
			Rating (A)
1	60390314P		2500
1	60390316P	65390315P	3200
1	60390317P	65390316P	4000
1		65390318P	5000

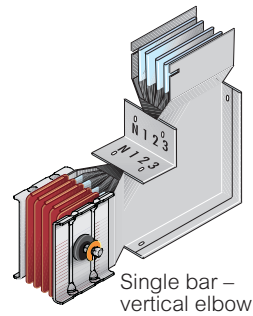
Pack	Cat. Nos.		Horizontal elbows – bespoke dimensions
	Aluminium	Copper	
			Please specify required length when ordering (see p. 96 for configuration)
			<b>Right hand – single bar 250 to 1299 mm</b>
			Rating (A)
1	60280320P		630
1	60280321P	65280320P	800
1	60280322P	65280321P	1000
1	60280324P	65280323P	1250
1	60280326P	65280325P	1600
1	60280327P	65280326P	2000
1		65280328P	2500
			<b>Right hand – double bar 250 to 1449 mm</b>
			Rating (A)
1	60390324P		2500
1	60390326P	65390325P	3200
1	60390327P	65390326P	4000
1		65390328P	5000
			<b>Left hand – single bar 250 to 1299 mm</b>
			Rating (A)
1	60280330P		630
1	60280331P	65280330P	800
1	60280332P	65280331P	1000
1	60280334P	65280333P	1250
1	60280336P	65280335P	1600
1	60280337P	65280336P	2000
1		65280338P	2500
			<b>Left hand – double bar 250 to 1449 mm</b>
			Rating (A)
1	60390334P		2500
1	60390336P	65390335P	3200
1	60390337P	65390336P	4000
1		65390338P	5000

**Key : How to select the correct configuration of bar**  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7



# SCP super compact busbar vertical elbows



Selection charts p. 62-65  
Dimensions and technical information p. 96  
Technical data p. 112-117

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
SCP complies with IEC 61439-6 (BS EN 61439-6)  
Elbows are supplied with pre-installed monobloc and are able to change direction with standard or bespoke dimensions

Pack	Cat. Nos.		Vertical elbows – standard
	Aluminium	Copper	
1	60280410P		<b>Left hand – single bar 300 x 300 mm</b>
1	60280411P	65280410P	Rating (A)
1	60280412P	65280411P	630
1	60280414P	65280413P	800
1	60280416P	65280415P	1000
1	60280417P	65280416P	1250
1		65280418P	1600
1			2000
1			2500
			<b>Left hand – double bar 450 x 450 mm</b>
			Rating (A)
1	60390414P		2500
1	60390416P	65390415P	3200
1	60390417P	65390416P	4000
1		65390418P	5000
			<b>Right hand – single bar 300 x 300 mm</b>
			Rating (A)
1	60280400P		630
1	60280401P	65280400P	800
1	60280402P	65280401P	1000
1	60280404P	65280403P	1250
1	60280406P	65280405P	1600
1	60280407P	65280406P	2000
1		65280408P	2500
			<b>Right hand – double bar 450 x 450 mm</b>
			Rating (A)
1	60390404P		2500
1	60390406P	65390405P	3200
1	60390407P	65390406P	4000
1		65390408P	5000

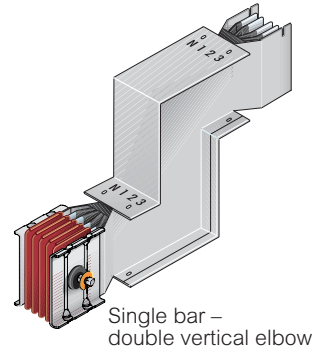
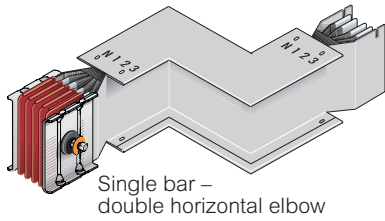
Pack	Cat. Nos.		Vertical elbows – bespoke dimensions
	Aluminium	Copper	
			Please specify required length when ordering (see p. 96 for configuration)
			<b>Left hand – single bar 300 to 1299 mm</b>
			Rating (A)
1	60280430P		630
1	60280431P	65280430P	800
1	60280432P	65280431P	1000
1	60280434P	65280433P	1250
1	60280436P	65280435P	1600
1	60280437P	65280436P	2000
1		65280438P	2500
			<b>Left hand – double bar 450 to 1449 mm</b>
			Rating (A)
1	60390434P		2500
1	60390436P	65390435P	3200
1	60390437P	65390436P	4000
1		65390438P	5000
			<b>Right hand – single bar 300 to 1299 mm</b>
			Rating (A)
1	60280420P		630
1	60280421P	65280420P	800
1	60280422P	65280421P	1000
1	60280424P	65280423P	1250
1	60280426P	65280425P	1600
1	60280427P	65280426P	2000
1		65280428P	2500
			<b>Right hand – double bar 450 to 1449 mm</b>
			Rating (A)
1	60390424P		2500
1	60390426P	65390425P	3200
1	60390427P	65390426P	4000
1		65390428P	5000

**Key : How to select the correct configuration of bar**  
The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
All examples on this page show 4 conductor versions, ie. 8 or 9;  
5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

## double elbows



Selection charts p. 62-65  
Dimensions and technical information p. 96-97  
Technical data p. 112-117

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
SCP complies with IEC 61439-6 (BS EN 61439-6)  
Elbows are supplied with pre-installed monobloc and are able to change direction with standard or bespoke dimensions

Pack	Cat. Nos.		Double horizontal elbows – bespoke dimensions <sup>1</sup>	
	Aluminium	Copper	Rating (A)	
1	60280350P		630	
1	60280351P	65280350P	800	
1	60280352P	65280351P	1000	
1	60280354P	65280353P	1250	
1	60280356P	65280355P	1600	
1	60280357P	65280356P	2000	
1		65280358P	2500	
			Rating (A)	
1	60390354P		2500	
1	60390356P	65390355P	3200	
1	60390357P	65390356P	4000	
1		65390358P	5000	
			Rating (A)	
1	60280340P		630	
1	60280341P	65280340P	800	
1	60280342P	65280341P	1000	
1	60280344P	65280343P	1250	
1	60280346P	65280345P	1600	
1	60280347P	65280346P	2000	
1		65280348P	2500	
			Rating (A)	
1	60390344P		2500	
1	60390346P	65390345P	3200	
1	60390347P	65390346P	4000	
1		65390348P	5000	

Pack	Cat. Nos.		Double vertical elbows – bespoke dimensions <sup>2</sup>	
	Aluminium	Copper	Rating (A)	
1	60280450P		630	
1	60280451P	65280450P	800	
1	60280452P	65280451P	1000	
1	60280454P	65280453P	1250	
1	60280456P	65280455P	1600	
1	60280457P	65280456P	2000	
1		65280458P	2500	
			Rating (A)	
1	60390454P		2500	
1	60390456P	65390455P	3200	
1	60390457P	65390456P	4000	
1		65390458P	5000	
			Rating (A)	
1	60280440P		630	
1	60280441P	65280440P	800	
1	60280442P	65280441P	1000	
1	60280444P	65280443P	1250	
1	60280446P	65280445P	1600	
1	60280447P	65280446P	2000	
1		65280448P	2500	
			Rating (A)	
1	60390444P		2500	
1	60390446P	65390445P	3200	
1	60390447P	65390446P	4000	
1		65390448P	5000	

2 : Standard dimensions 300 + 300 + 300 mm single bar and 450 + 450 + 450 mm double bar

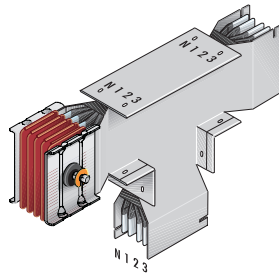
1 : Standard dimensions 300 + 300 + 300 mm

Key : How to select the correct configuration of bar  
The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
All examples on this page show 4 conductor versions, ie. 8 or 9;  
5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

## vertical tees



Single bar - vertical tee



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 97**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 Tees are supplied with pre-installed monobloc and are able to change direction with standard or bespoke dimensions

Pack	Cat. Nos.		Vertical tees – bespoke dimensions <sup>1</sup>
	Aluminium	Copper	Please specify required length when ordering (see p. 97 for configuration)
			<b>Right hand female – single bar 300 to 1 299 mm</b>
			Rating (A)
1	60280800P		630
1	60280801P	65280800P	800
1	60280802P	65280801P	1000
1	60280804P	65280803P	1250
1	60280806P	65280805P	1600
1	60280807P	65280806P	2000
1		65280808P	2500
			<b>Right hand female – double bar 450 to 1 449 mm</b>
			Rating (A)
1	60390804P		2500
1	60390806P	65390805P	3200
1	60390807P	65390806P	4000
1		65390808P	5000
			<b>Right hand male – single bar 300 to 1 299 mm</b>
			Rating (A)
1	60280810P		630
1	60280811P	65280810P	800
1	60280812P	65280811P	1000
1	60280814P	65280813P	1250
1	60280816P	65280815P	1600
1	60280817P	65280816P	2000
1		65280818P	2500
			<b>Right hand male – double bar 450 to 1 449 mm</b>
			Rating (A)
1	60390814P		2500
1	60390816P	65390815P	3200
1	60390817P	65390816P	4000
1		65390818P	5000

Pack	Cat. Nos.		Vertical tees – bespoke dimensions (continued) <sup>1</sup>
	Aluminium	Copper	Please specify required length when ordering (see p. 97 for configuration)
			<b>Left hand male – single bar 300 to 1 299 mm</b>
			Rating (A)
1	60280820P		630
1	60280821P	65280820P	800
1	60280822P	65280821P	1000
1	60280824P	65280823P	1250
1	60280826P	65280825P	1600
1	60280827P	65280826P	2000
1		65280828P	2500
			<b>Left hand male – double bar 450 to 1 449 mm</b>
			Rating (A)
1	60390824P		2500
1	60390826P	65390825P	3200
1	60390827P	65390826P	4000
1		65390828P	5000
			<b>Left hand female – single bar 300 to 1 299 mm</b>
			Rating (A)
1	60280830P		630
1	60280831P	65280830P	800
1	60280832P	65280831P	1000
1	60280834P	65280833P	1250
1	60280836P	65280835P	1600
1	60280837P	65280836P	2000
1		65280838P	2500
			<b>Left hand female – double bar 450 to 1 449 mm</b>
			Rating (A)
1	60390834P		2500
1	60390836P	65390835P	3200
1	60390837P	65390836P	4000
1		65390838P	5000

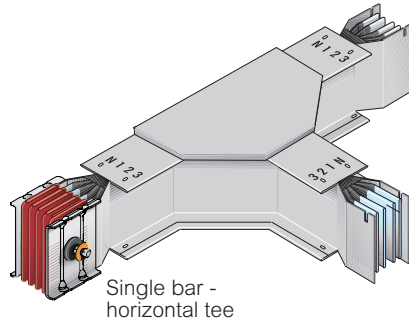
Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

<sup>1</sup> : Standard dimensions 300 + 300 + 300 mm single bar and 600 + 600 + 600 mm double bar

# SCP super compact busbar

## horizontal tees



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 98**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 Tees are supplied with pre-installed monobloc and are able to change direction with standard or bespoke dimensions

Pack	Cat. Nos.		Horizontal tees – bespoke dimensions <sup>1</sup>	
	Aluminium	Copper	Please specify required length when ordering (see p. 98 for configuration)	
			<b>Right hand female – single bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60280700P		630	
1	60280701P	65280700P	800	
1	60280702P	65280701P	1000	
1	60280704P	65280703P	1250	
1	60280706P	65280705P	1600	
1	60280706P	65280706P	2000	
1	60280707P	65280708P	2500	
			<b>Right hand female – double bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60390704P		2500	
1	60390706P	65390705P	3200	
1	60390707P	65390706P	4000	
1		65390708P	5000	
			<b>Right hand male – single bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60280710P		630	
1	60280711P	65280710P	800	
1	60280712P	65280711P	1000	
1	60280714P	65280713P	1250	
1	60280716P	65280715P	1600	
1	60280717P	65280716P	2000	
1		65280718P	2500	
			<b>Right hand male – double bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60390714P		2500	
1	60390716P	65390715P	3200	
1	60390717P	65390716P	4000	
1		65390718P	5000	

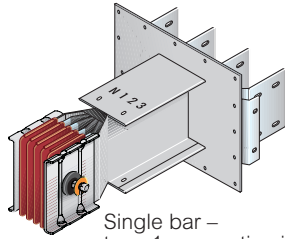
Pack	Cat. Nos.		Horizontal tees – bespoke dimensions (continued) <sup>1</sup>	
	Aluminium	Copper	Please specify required length when ordering (see p. 98 for configuration)	
			<b>Left hand male – single bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60280720P		630	
1	60280721P	65280720P	800	
1	60280722P	65280721P	1000	
1	60280724P	65280723P	1250	
1	60280726P	65280725P	1600	
1	60280727P	65280726P	2000	
1		65280728P	2500	
			<b>Left hand male – double bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60390724P		2500	
1	60390726P	65390725P	3200	
1	60390727P	65390726P	4000	
1		65390728P	5000	
			<b>Left hand female – single bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60280730P		630	
1	60280731P	65280730P	800	
1	60280732P	65280731P	1000	
1	60280734P	65280733P	1250	
1	60280736P	65280735P	1600	
1	60280737P	65280736P	2000	
1		65280738P	2500	
			<b>Left hand female – double bar 550 to 1 049 mm</b>	
			Rating (A)	
1	60390734P		2500	
1	60390736P	65390735P	3200	
1	60390737P	65390736P	4000	
1		65390738P	5000	

Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

<sup>1</sup> : Standard dimensions 600 + 600 + 600 mm

# SCP super compact busbar connection interfaces



Single bar – type 1 connection interface



For Legrand cast resin transformers compatibility table **p. 101**



Selection charts **p. 62-65**  
 Dimensions and technical information **p. 98-99**  
 Coverplate and bar drilling details **p. 100**  
 Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
 SCP complies with IEC 61439-6 (BS EN 61439-6)  
 For connecting the busbar to the cabinet or transformer

Pack	Cat. Nos.		Rating (A)	Diagram
	Aluminium	Copper		
1	60281010P		630	
1	60281011P	65281010P	800	
1	60281012P	65281011P	1000	
1	60281014P	65281013P	1250	
1	60281016P	65281015P	1600	
1	60281017P	65281016P	2000	
1		65281018P	2500	
1	60391014P		2500	
1	60391016P	65391015P	3200	
1	60391017P	65391016P	4000	
1		65391018P	5000	
1	60281000P		630	
1	60281001P	65281000P	800	
1	60281002P	65281001P	1000	
1	60281004P	65281003P	1250	
1	60281006P	65281005P	1600	
1	60281007P	65281006P	2000	
1		65281008P	2500	
1	60391004P		2500	
1	60391006P	65391005P	3200	
1	60391007P	65391006P	4000	
1		65391008P	5000	

### Connection interfaces – in-line standard dimensions 300 mm

#### Type 1 male – single bar

Rating (A)

#### Type 1 male – double bar

Rating (A)

#### Type 2 female – single bar

Rating (A)

#### Type 2 female – double bar

Rating (A)

Pack	Cat. Nos.		Rating (A)	Diagram
	Aluminium	Copper		
1	60281030P		630	
1	60281031P	65281030P	800	
1	60281032P	65281031P	1000	
1	60281034P	65281033P	1250	
1	60281036P	65281035P	1600	
1	60281037P	65281036P	2000	
1		65281038P	2500	
1	60391034P		2500	
1	60391036P	65391035P	3200	
1	60391037P	65391036P	4000	
1		65391038P	5000	
1	60281020P		630	
1	60281021P	65281020P	800	
1	60281022P	65281021P	1000	
1	60281024P	65281023P	1250	
1	60281026P	65281025P	1600	
1	60281027P	65281026P	2000	
1		65281028P	2500	
1	60391024P		2500	
1	60391026P	65391025P	3200	
1	60391027P	65391026P	4000	
1		65391028P	5000	

### Connection interfaces – in-line bespoke dimensions

Please specify required length when ordering (see p.98 for configuration)

#### Type 1 male - single bar

Rating (A)

#### Type 1 male - double bar

Rating (A)

#### Type 2 female - single bar

Rating (A)

#### Type 2 female - double bar

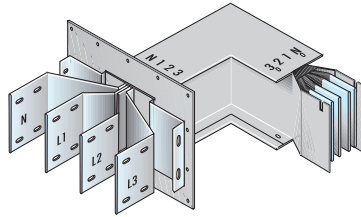
Rating (A)

Key : How to select the correct configuration of bar  
 The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
 All examples on this page show 4 conductor versions, ie. 8 or 9;  
 5 conductor and 200% neutral versions are available by substituting the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

# SCP super compact busbar

connection interfaces + horizontal elbows



Single bar – type 1  
connection interface +  
horizontal elbow



For Legrand cast resin  
transformers compatibility  
table p. 101



Selection charts p. 62-65  
Dimensions and technical information p. 98  
Coverplate and bar drilling details p. 100  
Technical data p. 112-117

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
SCP complies with IEC 61439-6 (BS EN 61439-6)  
For connecting the busbar to the cabinet or transformer

Pack	Cat. Nos.		Rating (A)	Diagram
	Aluminium	Copper		
<b>Connection interfaces + horizontal elbows – bespoke dimensions<sup>1</sup></b>				
Please specify required length when ordering (see p. 98 for configuration)				
<b>Type 1 female – single bar</b>				
1	60281300P		630	
1	60281301P	65281300P	800	
1	60281302P	65281301P	1000	
1	60281304P	65281303P	1250	
1	60281306P	65281305P	1600	
1	60281307P	65281306P	2000	
1		65281308P	2500	
<b>Type 1 female – double bar</b>				
1	60391304P		2500	
1	60391306P	65391305P	3200	
1	60391307P	65391306P	4000	
1		65391308P	5000	
<b>Type 2 female – single bar</b>				
1	60281310P		630	
1	60281311P	65281310P	800	
1	60281312P	65281311P	1000	
1	60281314P	65281313P	1250	
1	60281316P	65281315P	1600	
1	60281317P	65281316P	2000	
1		65281318P	2500	
<b>Type 2 female – double bar</b>				
1	60391314P		2500	
1	60391316P	65391315P	3200	
1	60391317P	65391316P	4000	
1		65391318P	5000	

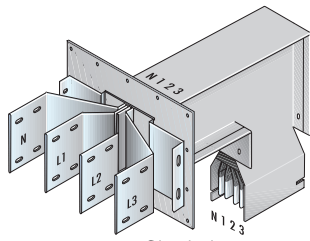
Pack	Cat. Nos.		Rating (A)	Diagram
	Aluminium	Copper		
<b>Connection interfaces + horizontal elbows – bespoke dimensions (continued)<sup>1</sup></b>				
Please specify required length when ordering (see p. 98 for configuration)				
<b>Type 3 male – single bar</b>				
1	60281320P		630	
1	60281321P	65281320P	800	
1	60281322P	65281321P	1000	
1	60281324P	65281323P	1250	
1	60281326P	65281325P	1600	
1	60281327P	65281326P	2000	
1		65281328P	2500	
<b>Type 3 male – double bar</b>				
1	60391324P		2500	
1	60391326P	65391325P	3200	
1	60391327P	65391326P	4000	
1		65391328P	5000	
<b>Type 4 male – single bar</b>				
1	60281330P		630	
1	60281331P	65281330P	800	
1	60281332P	65281331P	1000	
1	60281334P	65281333P	1250	
1	60281336P	65281335P	1600	
1	60281337P	65281336P	2000	
1		65281338P	2500	
<b>Type 4 male – double bar</b>				
1	60391334P		2500	
1	60391336P	65391335P	3200	
1	60391337P	65391336P	4000	
1		65391338P	5000	

Key : How to select the correct configuration of bar  
The 4<sup>th</sup> digit of an SCP Cat. No. determines the busbar configuration  
All examples on this page show 4 conductor versions, ie. 8 or 9;  
5 conductor and 200% neutral versions are available by substituting  
the 4<sup>th</sup> digit with 4, 5, 6 or 7, as shown below

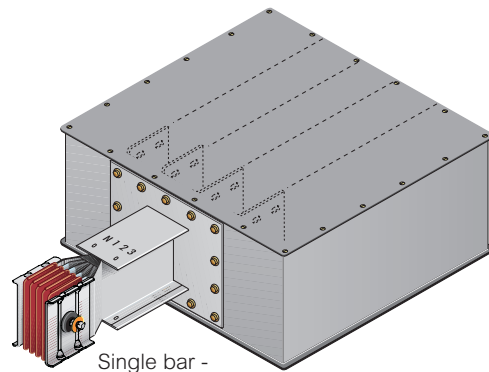
	3L + N + PE	3L + N + FE+ PE	3L + 2N + PE
Single bar	8	4	5
Double bar	9	6	7

1 : Standard dimensions 300 + 300 mm

**SCP super compact busbar**  
connection interfaces + vertical elbows and feed units



Single bar – type 1 connection interface + vertical elbow

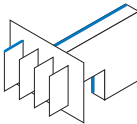
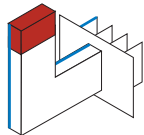
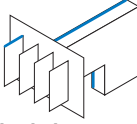
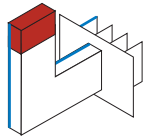
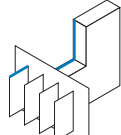
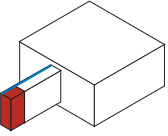
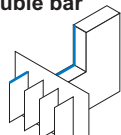
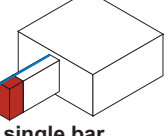
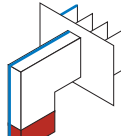
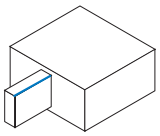
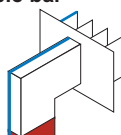
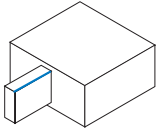


Single bar - type 1 end feed unit



Selection charts **p. 62-65**  
Dimensions and technical information **p. 99**  
Coverplate and bar drilling details **p. 100**  
Technical data **p. 112-117**

High power busbar from 630 A to 4000 A with aluminium alloy conductors and from 800 A to 5000 A with copper conductors  
SCP complies with IEC 61439-6 (BS EN 61439-6)  
For connecting the busbar to the cabinet or transformer  
End feed units have rear cable input and aluminium gland plate(s) for cable entry – 170 x 410 mm. Single bar 1 plate, double bar 2 plates

Pack	Cat. Nos.		Connection interfaces + vertical elbows – bespoke dimensions <sup>1</sup>		Pack	Cat. Nos.		Connection interfaces + vertical elbows – bespoke dimensions (continued) <sup>1</sup>	
	Aluminium	Copper	Rating (A)			Aluminium	Copper	Rating (A)	
1	60281400P		630		1	60281430P		630	
1	60281401P	65281400P	800		1	60281431P	65281430P	800	
1	60281402P	65281401P	1000		1	60281432P	65281431P	1000	
1	60281404P	65281403P	1250		1	60281434P	65281433P	1250	
1	60281406P	65281405P	1600		1	60281436P	65281435P	1600	
1	60281407P	65281406P	2000		1	60281437P	65281436P	2000	
		65281408P	2500			65281438P	2500		
			Rating (A)					Rating (A)	
1	60391404P		2500		1	60391434P		2500	
1	60391406P	65391405P	3200		1	60391436P	65391435P	3200	
1	60391407P	65391406P	4000		1	60391437P	65391436P	4000	
1		65391408P	5000		1		65391438P	5000	
			Rating (A)					Rating (A)	
1	60281410P		630		1	60281110P		630	
1	60281411P	65281410P	800		1	60281111P	65281110P	800	
1	60281412P	65281411P	1000		1	60281112P	65281111P	1000	
1	60281414P	65281413P	1250		1	60281114P	65281113P	1250	
1	60281416P	65281415P	1600		1	60281116P	65281115P	1600	
1	60281417P	65281416P	2000		1	60281117P	65281116P	2000	
		65281418P	2500			65281118P	2500		
			Rating (A)					Rating (A)	
1	60391414P		2500		1	60391114P		2500	
1	60391416P	65391415P	3200		1	60391116P	65391115P	3200	
1	60391417P	65391416P	4000		1	60391117P	65391116P	4000	
1		65391418P	5000		1		65391118P	5000	
			Rating (A)					Rating (A)	
1	60281420P		630		1	60281100P		630	
1	60281421P	65281420P	800		1	60281101P	65281100P	800	
1	60281422P	65281421P	1000		1	60281102P	65281101P	1000	
1	60281424P	65281423P	1250		1	60281104P	65281103P	1250	
1	60281426P	65281425P	1600		1	60281106P	65281105P	1600	
1	60281427P	65281426P	2000		1	60281107P	65281106P	2000	
		65281428P	2500			65281108P	2500		
			Rating (A)					Rating (A)	
1	60391424P		2500		1	60391104P		2500	
1	60391426P	65391425P	3200		1	60391106P	65391105P	3200	
1	60391427P	65391426P	4000		1	60391107P	65391106P	4000	
1		65391428P	5000		1		65391108P	5000	

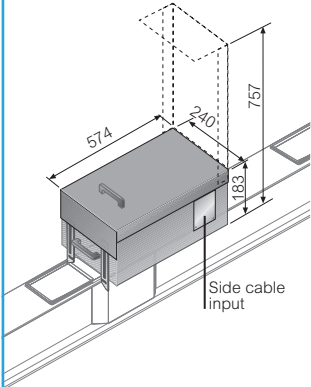
1 : Standard dimensions 300 + 300 mm single bar and 450 + 450 mm double bar

# SCP tap-off boxes – plug-in type 63-630 A

with AC21A disconnection on the door

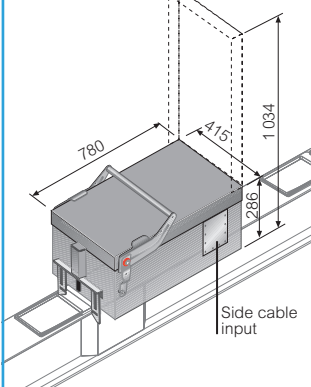
Plug-in boxes can be fitted on any length with tap-off outlets irrespective of rating and conductor material

Cover with AC21A disconnection



From 63 to 160 A

Cover with AC21A disconnection



From 250 to 630 A

### With fuse carrier (fuses not included)

Tap-off rating	Fuse carrier	3L + N + PE	3L + N + FE + PE	3L + 2N + PE
63 A	CH22	65285031P	65245021P	65255031P
125 A	NH00	65285032P	65245022P	65255032P
160 A	NH00	65285033P	65245023P	65255033P
250 A	NH2	65285034P	65245024P	65255034P
630 A	NH3	65285036P	65245026P	65255036P

### With switch disconnecter (AC23) and fuse carrier (fuses not included)

Tap-off rating	Fuse carrier	3L + N + PE	3L + N + FE + PE	3L + 2N + PE
63 A	NH000	65285051P	65245041P	65255051P
125 A	NH00	65285052P	65245042P	65255052P
160 A	NH00	65285053P	65245043P	65255053P
250 A	NH1	65285054P	65245044P	65255054P
400 A	NH2	65285055P	65245045P	65255055P
630 A	NH3	65285076P	65245066P	65255076P

### Empty version

Tap-off rating	3L + N + PE	3L + N + FE + PE	3L + 2N + PE
63 A	65285011P	65245001P	65255011P
125 A	65285012P	65245002P	65255012P
160 A	65285013P	65245003P	65255013P
250 A	65285014P	65245004P	65255014P
630 A	65285016P	65245006P	65255016P

### Fully fitted tap-offs c/w 4P Legrand MCCB with rotary handle<sup>1</sup>

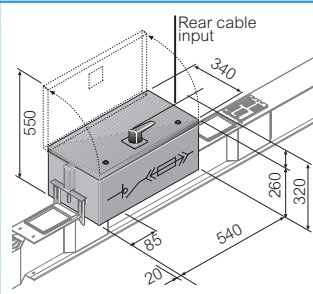
Tap-off rating	Breaker rating	3L + N + PE	3L + N + FE + PE	3L + 2N + PE
63 A	40 A	65285013PM4RB	65245003PM4RB	65255013PM4RB
	63 A	65285013PM4RC	65245003PM4RC	65255013PM4RC
125 A	100 A	65285013PM4RD	65245003PM4RD	65255013PM4RD
	125 A	65285013PM4RE	65245003PM4RE	65255013PM4RE
160 A	160 A	65285013PM4RF	65245003PM4RF	65255013PM4RF
250 A	200 A	65285014PM4RG	65245004PM4RG	65255014PM4RG
	250 A	65285014PM4RH	65245004PM4RH	65255014PM4RH
630 A	400 A	65285016PM4RI	65245006PM4RI	65255016PM4RI
	630 A	65285016PM4RJ	65245006PM4RJ	65255016PM4RJ

<sup>1</sup> : For MCCB technical data, see p. 118-125



## SCP tap-off boxes – plug-in type 125-400 A – bolt-on type 125-1 250 A

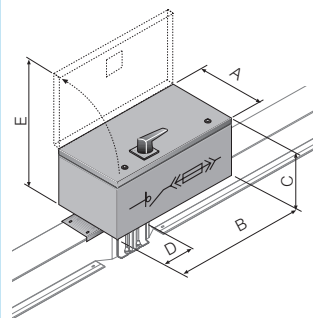
### Plug-in tap-offs 125-1250 A (remain live with door open)



#### With switch disconnecter (AC23) and fuse carrier (fuses not included)

Tap-off rating	Fuse carrier	3L + N + PE	3L + N + FE + PE	3L + 2N + PE
125 A	NH00	65282001P	N/A	N/A
250 A	NH1	65282002P	N/A	N/A
400 A	NH2	65282003P	N/A	N/A

### Bolt-on tap-offs – with switch disconnecter (AC23) and fuse carrier 125 A to 1250 A (fuses not included)



The boxes cannot be installed simultaneously on both sides of the same junction  
The bolted boxes are to be installed directly on the junction when the busbar is disconnected and not energised  
Dimensions and technical information **p. 103**. Technical data **p. 112-117**

#### Busbar system – aluminium

Tap-off rating/ fuse carrier	Single bar			Double bar		
	630 A 800 A 1000 A 1250 A	1600 A	2000 A	2500 A	3200 A	4000 A
125 A NH00	65281811P	65281812P	65281814P	65391812P	65391813P	65391814P
250 A NH1	65281821P	65281822P	65281824P	65391822P	65391823P	65291824P
400 A NH2	65281831P	65281832P	65281834P	65391832P	65391833P	65291834P
630 A NH3	65286041P	65286042P	65286044P	65396042P	65396043P	65396044P
800 A NH4	65281851P	65281852P	65281854P	65391852P	65391853P	65291854P
1000 A NH4	65281861P	65281862P	65281864P	65391862P	65391863P	65291864P
1250 A NH4	65281871P	65281872P	65281874P	65391872P	65391873P	65291874P

#### Busbar system – copper

Tap-off rating/ fuse carrier	Single bar			Double bar		
	800 A 1000 A 1250 A	1600 A 2000 A	2500 A	3200 A	4000 A	5000 A
125 A NH00	65281811P	65281812P	65281814P	65391812P	65391813P	65391814P
250 A NH1	65281821P	65281822P	65281824P	65391822P	65391823P	65391824P
400 A NH2	65281831P	65281832P	65281834P	65391832P	65391833P	65391834P
630 A NH3	65286041P	65286042P	65286044P	65396042P	65396043P	65396044P
800 A NH4	65281851P	65281852P	65281854P	65391852P	65391853P	65391854P
1000 A NH4	65281861P	65281862P	65281864P	65391862P	65391863P	65391864P
1250 A NH4	65281871P	65281872P	65281874P	65391872P	65391873P	65391874P

#### Dimensions of the box

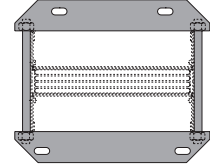
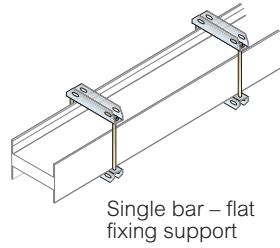
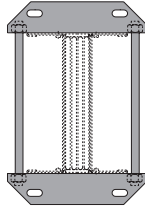
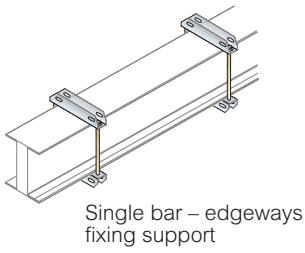
Box rating	125-400 A	630 A	800-1250 A
(A) mm	365	400	450
(B) mm	630	750	1050
(C) mm	270	280	300
(D) mm	95	115	115
(E) mm	635	680	750

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

IEC 60947-3

# SCP super compact busbar

fixing supports for horizontal installation



Dimensions and technical information p. 104

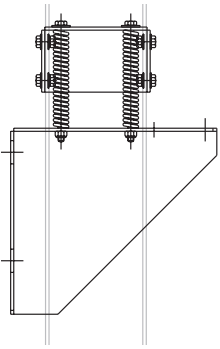
Fixing supports for fixing the busbar to the structure of the building

Pack	Cat. Nos.		<b>Suspension brackets for edgeways installation</b>
	Aluminium busbar	Copper busbar	
1	65202001	65202001	<b>Single bar</b> Height : 210 mm Rating (A) 630 to 1250 800 to 1250
1	65202002	65202002	Height : 250 mm Rating (A) 1 600 1 600 to 2 000
1	65202004	65202004	Height : 300 mm Rating (A) 2 000 2 500
1	65222002	65222002	<b>Double bar</b> Height : 460 mm Rating (A) 2 500 3 200
1	65222003	65222003	Height : 520 mm Rating (A) 3 200 4 000
1	65222004	65222004	Height : 560 mm Rating (A) 4 000 5 000

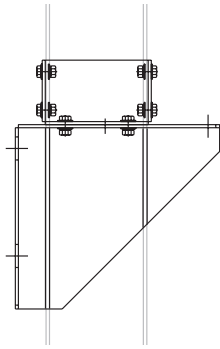
Pack	Cat. Nos.		<b>Suspension brackets for flat installation</b>
	Aluminium busbar	Copper busbar	
1	65202001	65202001	<b>Single bar</b> Height : 190 mm Rating (A) 630 to 1250 800 to 1250
1	65202013	65202013	Height : 315 mm Rating (A) 1 600 to 2 000 1 600 to 2 500
1	65202112	65202112	<b>Double bar</b> Height : 430 mm Rating (A) 2 500 3 200
1	65202113	65202113	Height : 490 mm Rating (A) 3 200 4 000
1	65202114	65202114	Height : 530 mm Rating (A) 4 000 5 000

# SCP super compact busbar

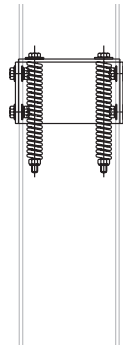
fixing supports for vertical installation



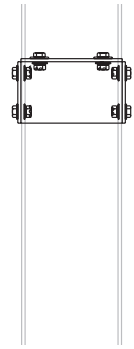
Fixing support with bracket and springs



Fixing support with bracket



Fixing support with springs



Fixing support – bracket only

 **Dimensions and technical information p. 105-106**

Fixing supports for fixing the busbar to the structure of the building  
For vertical installations and special applications

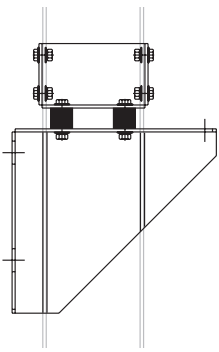
Pack	Cat. Nos.		Rating (A)
	Aluminium	Copper	
<b>Fixing supports with bracket and springs</b>			
<b>Single bar</b>			
1	65213711		630 to 1250
1	65213712		1600
1		65213711	800 to 1250
1		65213712	1 600 to 2 000
1	65213714		2 000
1		65213714	2 500
<b>Double bar</b>			
1	65213742		2 500
1		65213742	3 200
1	65213743		3 200
1		65213743	4 000
1	65213744		4 000
1		65213744	5 000

Pack	Cat. Nos.		Rating (A)
	Aluminium	Copper	
<b>Fixing supports with springs</b>			
<b>Single bar</b>			
1	65213701		630 to 1250
1		65213701	800 to 1250
1	65213702		1 600
1		65213702	1 600 to 2 000
1	65213704		2 000
1		65213704	2 500
<b>Double bar</b>			
1	65213732		2 500
1		65213732	3 200
1	65213733		3 200
1		65213733	4 000
1	65213734		4 000
1		65213734	5 000

Pack	Cat. Nos.		Rating (A)
	Aluminium	Copper	
<b>Fixing supports with bracket</b>			
<b>Single bar – anti-seismic rated</b>			
1	65213721		630 to 1250
1		65213721	800 to 1250
1	65213722		1 600
1		65213722	1 600 to 2 000
1	65213724		2 000
1		65213724	2 500
<b>Double bar – not anti-seismic rated</b>			
1	65213752		2 500
1		65213752	3 200
1	65213753		3 200
1		65213753	4 000
1	65213754		4 000
1		65213754	5 000
<b>Double bar – anti-seismic rated</b>			
1	65213792		2 500
1		65213792	3 200
1	65213793		3 200
1		65213793	4 000
1	65213794		4 000
1		65213794	5 000

Pack	Cat. Nos.		Rating (A)
	Aluminium	Copper	
<b>Fixing supports – bracket only</b>			
<b>Single bar</b>			
1	65213761		630 to 1250
1		65213761	800 to 1250
1	65213762		1 600
1		65213762	1 600 to 2 000
1	65213764		2 000
1		65213764	2 500
<b>Double bar</b>			
1	65213772		2 500
1		65213772	3 200
1	65213773		3 200
1		65213773	4 000
1	65213774		4 000
1		65213774	5 000

## SCP super compact busbar fixing supports for vertical installation (continued)



Fixing support for Naval applications

Dimensions and technical information p. 105-106

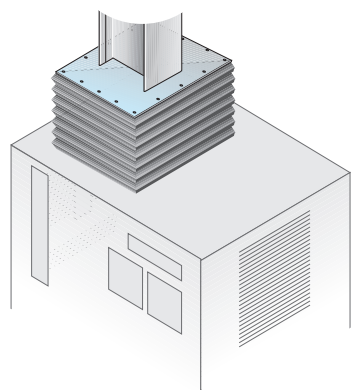
Fixing supports for fixing the busbar to the structure of the building

Pack	Cat. Nos.		Rating (A)
	Aluminium	Copper	
1	65213782		2 500
1		65213782	3 200
1	65213783		3 200
1		65213783	4 000
1	65213784		4 000
1		65213784	5 000

### Fixing supports for naval applications

#### Double bar

## SCP super compact busbar protective bellows



Protective bellows – single bar



Protective covers for outdoor applications available on request

**Contact us on  
+44 (0) 370 608 9020**

Dimensions and technical information p. 107

High power busbar from 630 A to 4 000 A with aluminium alloy conductors and from 800 A to 5 000 A with copper conductors SCP complies with IEC 61439-6

Pack	Cat. Nos.		Rating (A)
	Aluminium	Copper	
1	SF766040		630 to 2 000
1		SF766040	800 to 2 500
1	SF927140		2 500 to 4 000
1		SF927140	3 200 to 5 000

### Protective bellows

Recommended for protection of the interface connection on panel boards, dry-type transformer with enclosure and oil-type transformers For Legrand cast resin transformers, custom-made connections are available upon request (see p. 83)

#### Single bar

Rating (A)  
630 to 2 000  
800 to 2 500

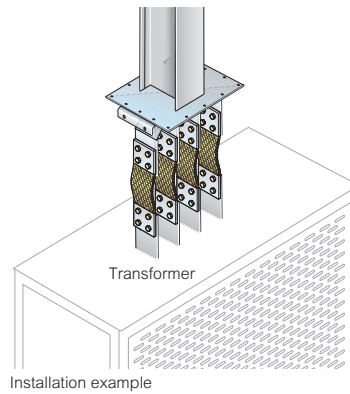
#### Double bar

Rating (A)  
2 500 to 4 000  
3 200 to 5 000

# SCP super compact busbar transformer connections



Flexible braid connection



Installation example

 **Dimensions and technical information p. 108**

High power busbar from 630 A to 4 000 A with aluminium alloy conductors and from 800 A to 5 000 A with copper conductors  
SCP complies with IEC 61439-6 (BS EN 61439-6)

Pack	Cat. Nos.		Flexible braid connections	
	Aluminium	Copper	Rating (A)	No. of braids per phase
	<b>Length : 300 - 450 mm</b>			
1	FC100010		630	1
1	FC100010	FC100010	800	1
1	FC200010	FC200010	1000	1
1	FC300010	FC300010	1250	1
1	FC500010	FC500010	1600	1
1	FC600010	FC600010	2000	1
1	FC400010	FC400010	2500	2
1	FC500010	FC500010	3200	2
1	FC600010	FC600010	4000	2
1		FC700010	5000	2
	<b>Length : 451 - 600 mm</b>			
	When ordering, please specify hole dimensions on transformer side (A, B, Ø D) and length L (see p. 108)			
1	FC100020		630	1
1	FC100020	FC100020	800	1
1	FC200020	FC200020	1000	1
1	FC300020	FC300020	1250	1
1	FC500020	FC500020	1600	1
1	FC600020	FC600020	2000	1
1	FC400020	FC400020	2500	2
1	FC500020	FC500020	3200	2
1	FC600020	FC600020	4000	2
1		FC700020	5000	2

Pack	Cat. Nos.		Flexible braid connections (continued)	
	Aluminium	Copper	Rating (A)	No. of braids per phase
	<b>Length : 601 - 750 mm</b>			
1	FC100030		630	1
1	FC100030	FC100030	800	1
1	FC200030	FC200030	1000	1
1	FC300030	FC300030	1250	1
1	FC500030	FC500030	1600	1
1	FC600030	FC600030	2000	1
1	FC400030	FC400030	2500	2
1	FC500030	FC500030	3200	2
1	FC600030	FC600030	4000	2
1		FC700030	5000	2
	<b>Length : over 750 mm</b>			
1	FC100099		630	1
1	FC100099	FC100099	800	1
1	FC200099	FC200099	1000	1
1	FC300099	FC300099	1250	1
1	FC500099	FC500099	1600	1
1	FC600099	FC600099	2000	1
1	FC400099	FC400099	2500	2
1	FC500099	FC500099	3200	2
1	FC600099	FC600099	4000	2
1		FC700099	5000	2

# SCP super compact busbar

## technical information

### ■ General features

SCP complies with IEC 61439-6 (BS EN 61439-6)

The outer casing of the SCP range consists of four C-ribbed section bars, bordered and riveted (thickness 1.5 mm), with excellent mechanical, electric and heat loss efficiency

The sheet metal is manufactured from galvanised steel, treated according to UNI EN 10327 and painted with RAL 7035 resins with a high resistance to chemical agents

The standard degree of protection is IP 55 and with certain accessories (see p. 82), it can be installed outdoors. IP 65 (only for transport of energy) is available on request, contact us on +44 (0) 370 608 9020

The busbar conductors have a rectangular cross-section with rounded corners. There are two versions :

- Electrolytic copper ETP 99.9 UNI EN 13601
- 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 (130° C), Class F (155° C) thermal resistance available on request – contact us on +44 (0) 370 608 9020

All plastic components have a V1 self-extinguishing degree (as per UL94), are fire retardant and comply with the glow-wire test according to standards. The SCP range is halogen free

In order to facilitate storage and reduce installation time, the straight lengths and system components of the SCP range are supplied with a pre-installed monobloc for fast, easy and secure connection of the system. The junction contact is ensured by tin-plated aluminium for SCP Al and copper for SCP Cu for each phase, insulated with red Class F thermoset 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, giving you the certainty that the connection has been made properly to guarantee safety and maximum performance over time

Finally, in order to completely verify the insulation level, every component with a monobloc undergoes an insulation test (phase-phase, phase-PE) at the factory with a test voltage of 3 500 V for 1.5 seconds

### ■ Certificates

SCP has been given Type-Approval Certifications by the most prestigious Electro-technical agencies :

- Certificate of Compliance with Standards IEC 61439-6 (BS EN 61439-6) (ACAE - LOVAG)
- ABS Type-Approval (American Bureau of Standard)
- EAC Type-Approval (Russia)
- S120 fire resistance measurements
- Noise measurements (CESI)
- Fire resistance measurements with Fire Barrier
- Electromagnetic emissions measurements
- Mechanical vibration resistance measurements (Dynamic Test - ENEL HYDRO)



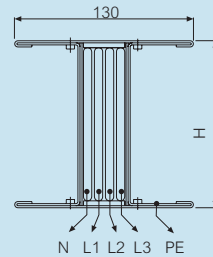
### ■ Standard versions

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

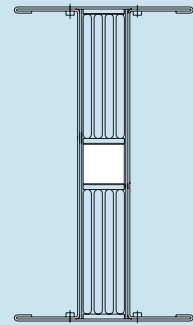
Note : for dimension H, see technical data section p. 112-117

PE : Protection earth

FE : Functional earth (clean earth)



single bar



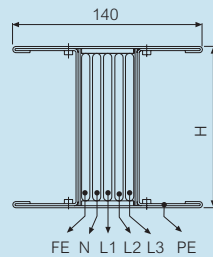
double bar

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

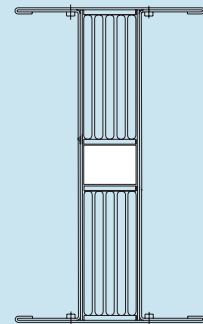
Note : For dimension H, see technical data section p. 112-117

PE : Protection earth

FE : Functional earth (clean earth)



single bar



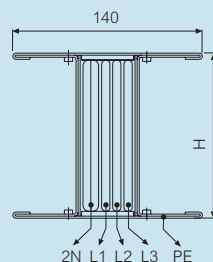
double bar

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

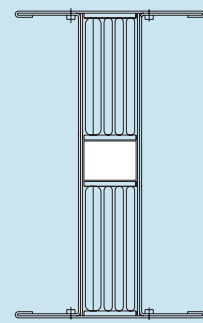
Note : For dimension H, see technical data section p. 112-117

PE : Protection earth

FE : Functional earth (clean earth)



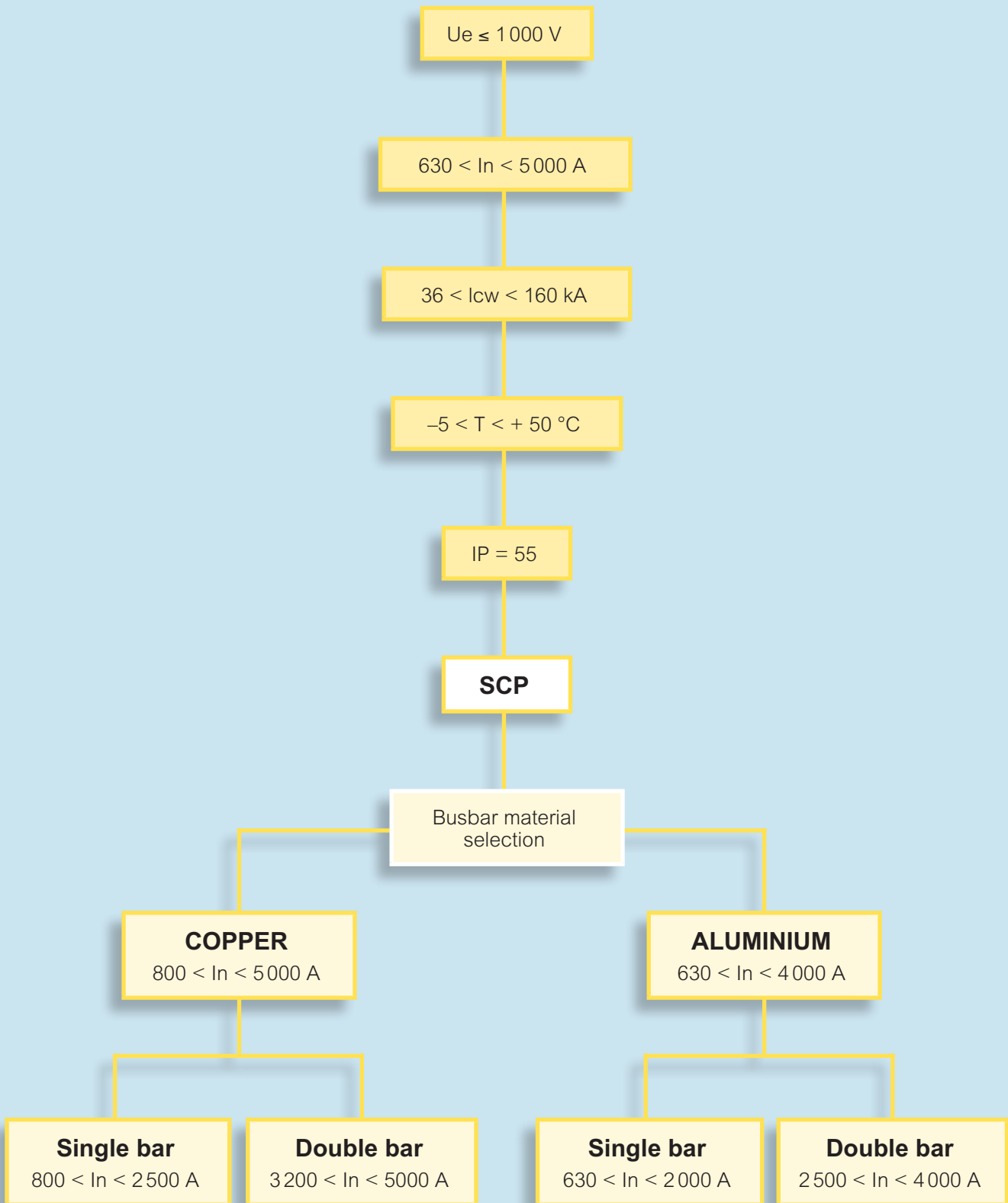
single bar



double bar

Special versions are available on request, contact us on +44 (0) 370 608 9020

■ Electric design criteria



# SCP super compact busbar

## technical information

### ■ Joule effect losses in busbars

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 of the environment  
 The calculation of power loss is useful data for correct sizing of the building air conditioning system

Three-phase regime losses are :

$$P_j = \frac{3 \cdot R_t \cdot I_b^2 \cdot L}{1000}$$

In single-phase regime :

$$P_j = \frac{2 \cdot R_t \cdot I_b^2 \cdot L}{1000}$$

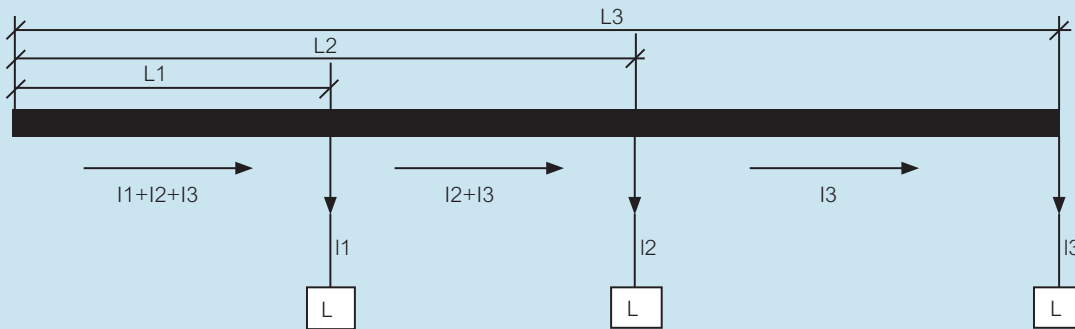
Where :

- $I_b$  = utilisation current (A)
- $R_t$  = phase resistance for unit of length of the busbar trunking system, measured at thermal regime (mΩ/m)
- $L$  = busbar length (m)

For accurate calculation, losses must be assessed trunk by trunk, taking into account the transiting currents ; for example, in the case of the distribution of the loads represented in the table below

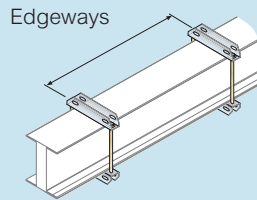
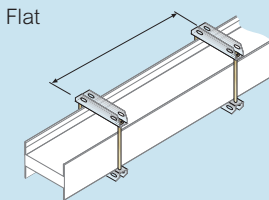
	Length	Transiting current	Losses
1st trunk	L1	$I_1+I_2+I_3$	$P_1 = 3R_t L_1 (I_1+I_2+I_3)^2$
2nd trunk	$L_2-L_1$	$I_2+I_3$	$P_2 = 3R_t (L_2-L_1) (I_2+I_3)^2$
3rd trunk	$L_3-L_2$	$I_3$	$P_3 = 3R_t (L_3-L_2) (I_3)^2$

**Total losses in the busbar trunking system  $P_t = P_1 + P_2 + P_3$**



### ■ Losses based on the installation method

Thermal dispersion, rating and IP protection degree are independent from the type of installation (edgeways, flat, vertical)  
 This means that it is possible to install the SCP busbar trunking system as preferred, without having to consider a possible system downgrade





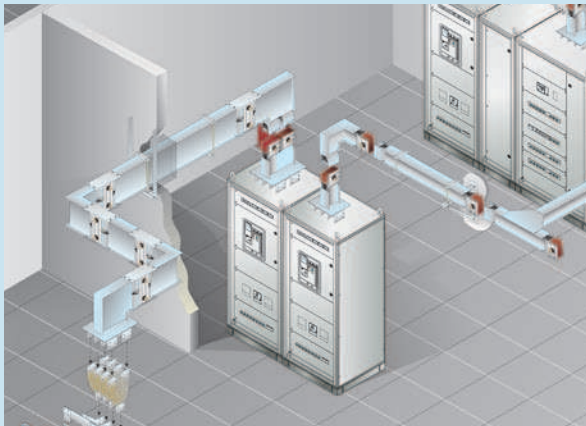
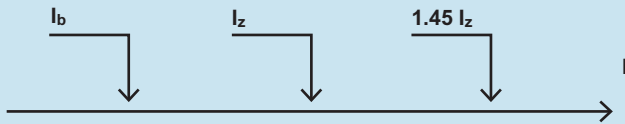
### ■ Overload protection

Busbar overload protection is ensured following the same criteria used for cables. It will be necessary to check the relationship :

$$I_b \leq I_n \leq I_z$$

Where :

- $I_b$  = circuit utilisation current
- $I_n$  = switch rated current
- $I_z$  = rating at permanent cable regime



The  $I_b$  utilisation current in a 3 phase system is calculated based on the following formula :

$$I_b = \frac{P_t \cdot \alpha \cdot \beta \cdot d}{\sqrt{3} \cdot U_e \cdot \cos\varphi_{\text{medium}}} \quad (\text{A})$$

Where :

- $P_t$  = sum of the active powers of the loads installed (W)
- $d$  = power supply factor equal to 1 if the trunking is :
  - only powered from one side
  - powered from the centre or from both ends at the same time
- $U_e$  = operating voltage in (V)
- $\cos\varphi_m$  = average power factor of the loads
- $I_b$  = utilisation current (A)
- $\alpha$  = diversity coefficient of the loads (.)
- $\beta$  = coefficient of utilisation of the loads (.)

The ambient temperature where the busbar trunking system is installed impacts on its rating

During the design stages, it is necessary to multiply the rating value at the reference temperature by a correction coefficient referred to the final operating temperature

All Zucchini products have been sized and tested for an average ambient temperature of 40 °C. For installation in environments with average daily temperatures lower than 40 °C, the rated current of the busbar must be multiplied by a  $K_t$  factor, which is higher than the unit for temperatures lower than 40 °C, and lower than the unit if the ambient temperature is higher than 40 °C

$$I_z = I_{z0} \cdot K_t$$

Where :

- $I_{z0}$  is the current that the busbar trunking system can carry for an indefinite time at its reference temperature (40 °C)
- $K_t$  is the correction coefficient for ambient temperature values other than the reference temperature, as shown in the following table

#### **$K_t$ correction coefficient for ambient temperature other than 40°C**

Ambient temperature (°C)	15	20	25	30	35	40	45	50	55	60
$k_t$ thermal correction factor	1.15	1.12	1.08	1.05	1.025	1	0.975	0.95	0.93	0.89

# SCP super compact busbar

## technical information

### Selection of the busbar trunking system based on voltage drop

If the line is particularly long (> 100 m), it will be necessary to check the value of the voltage drop. For systems with power factor (cosφm) not lower than 0.8 the voltage loss can be calculated using the following formulas :

#### Three phase system

$$\Delta v = \frac{b \cdot \sqrt{3} \cdot I_b \cdot L \cdot (R_t \cdot \cos\varphi_m + x \cdot \sin\varphi_m)}{1000}$$

#### Single phase system

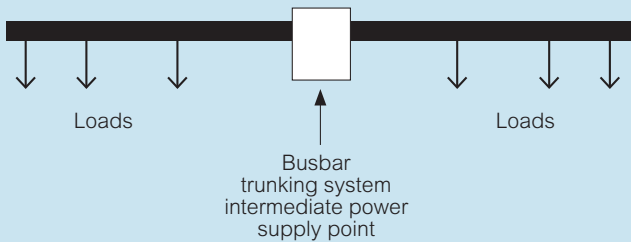
$$\Delta v = \frac{b \cdot 2 \cdot I_b \cdot L \cdot (R_t \cdot \cos\varphi_m + x \cdot \sin\varphi_m)}{1000}$$

The percentage voltage drop can be obtained from :

$$\Delta v\% = \frac{\Delta v}{V_r} \cdot 100$$

Where Vr is the system rated voltage

In order to limit the voltage drop in very long busbar trunking systems, it is possible to allow for a power supply at an intermediate position, rather than at the terminal point



### Calculation of the voltage drop with loads not evenly distributed

If the load cannot be considered evenly distributed, the voltage drop may be determined more accurately using the relationships shown below

For the distribution of three phase loads, the voltage drop is calculated using the following formula, on the assumption (generally verified) that the section of busbar trunking is consistent :

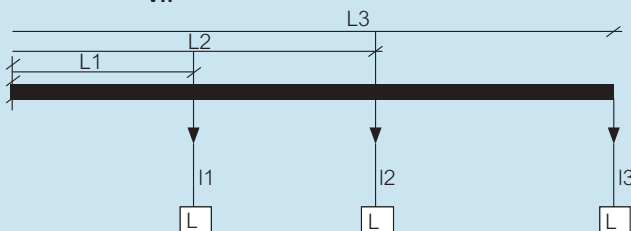
$$\Delta v = \sqrt{3} [R_t (I_1 L_1 \cos\varphi_1 + I_2 L_2 \cos\varphi_2 + I_3 L_3 \cos\varphi_3) + x (I_1 L_1 \sin\varphi_1 + I_2 L_2 \sin\varphi_2 + I_3 L_3 \sin\varphi_3)]$$

In general terms this becomes :

$$\Delta v = \frac{\sqrt{3} (R_t \cdot \sum I_i \cdot L_i \cdot \cos\varphi_{mi} + x \cdot \sum I_i \cdot L_i \cdot \sin\varphi_{mi})}{1000}$$

If the three phase system and the power factor are not lower than cosφ = 0.7, the voltage loss may be calculated using the voltage drop coefficient shown in the table opposite

$$\Delta v\% = 2b \cdot \frac{k \cdot I_b \cdot L}{V_n} \cdot 100$$



### Calculation of the voltage drop with loads not evenly distributed (continued)

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

The distribution factor of the current 'b'	
<b>b = 1</b>	Supplies at one end and load at the end of the line
<b>b = 1/2</b>	Supplies at one end and with load evenly distributed
<b>b = 1/4</b>	Supplies at both ends and with load evenly distributed
<b>b = 1/4</b>	Central supply with loads at both ends
<b>b = 1/6</b>	Central supply with load evenly distributed

<b>Example :</b>	SCP 2000 A AI for rising main feed
<b>I<sub>b</sub></b>	= 1600 A operating current
<b>b</b>	= 1/2 load evenly distributed
<b>k</b>	= 27.3, see technical data table, p. 112-117 (SCP 2000 A AI cosφ = 0.85)
<b>cosφ</b>	= 0.85
<b>L</b>	= 100 m line length
<b>V<sub>n</sub></b>	= 400 V operating voltage
	$\Delta v\% = 1 \cdot \frac{27.3 \cdot 10^{-6} \cdot 1600 \cdot 100}{400} \cdot 100 = 1.09\%$

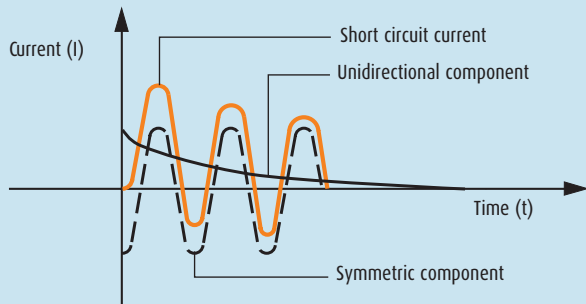
<b>Legend:</b>	
<b>I<sub>b</sub></b>	= the current that supplies the busbar (A)
<b>V<sub>n</sub></b>	= the voltage power supply of the busbar (V)
<b>L</b>	= the length of the busbar (m)
<b>Δv%</b>	= the voltage drop percentage
<b>b</b>	= the distribution factor of the current
<b>k</b>	= corresponding voltage drop factor a cosφ (V/m/A) (see technical data table, p. 112-117)
<b>cosφ m</b>	= average power factor of the loads
<b>x</b>	= phase reactance by unit of length of the busbar (mΩ/m)
<b>R<sub>t</sub></b>	= phase resistance by unit of length of the busbar (mΩ/m)
<b>cosφ mi</b>	= i-th load average power factor
<b>I<sub>i</sub></b>	= i-th load current (A)
<b>L<sub>i</sub></b>	= distance of the i-th load from the origin of the busbar trunking system

### Short circuit withstand

The IEC 64-8 standard indicates that, for the protection of the circuits of the system, it is necessary to allow for devices aimed at interrupting short circuit currents before these become dangerous due to the thermal and mechanical effects generated in the conductors and the connections. In order to size the electric system and the protection devices correctly, it is necessary to know the value of the estimated short circuit current at the point where this is to be created. This value enables selection of the correct protection devices based on their own tripping and closing powers, and to check the resistance to electro-dynamic stress of the busbar supports installed in control panels, and/or of the busbar trunking systems

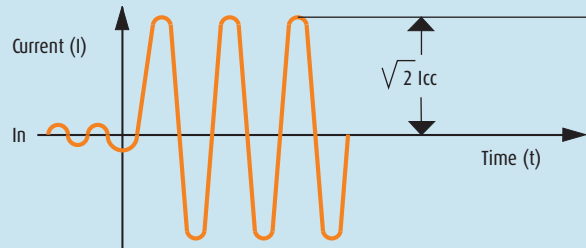
### Characterisation of short circuit current

The estimated short circuit current at a point of the user system is the current that would occur if at the considered point a connection of negligible resistance was created between conductors under voltage. The magnitude of this current is an estimated value that represents the worst possible condition (null fault impedance, tripping time long enough to enable the current to reach the maximum theoretical values). In reality, the short circuit always occurs with significantly lower effective current values



The intensity of the estimated short circuit current essentially depends on the following factors :

- power of the cabin TRANSFORMER, meaning that the higher the power, the higher the current
- length of the line upstream the fault, in the sense that the longer the line, the lower the current



In three phase circuits with neutral it is possible to have three different types of short circuit :

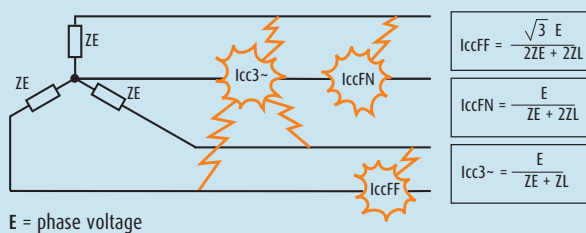
- phase-phase
- phase-neutral
- balanced three phase (most demanding condition)

The formula for the calculation of the symmetric component is :

$$I_{cc} = \frac{E}{Z_E + Z_L}$$

Where :

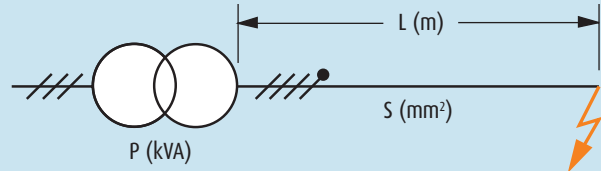
- E = the phase voltage
- Z<sub>E</sub> = the secondary equivalent impedance of the TRANSFORMER measured between the phase and the neutral
- Z<sub>L</sub> = the impedance of the phase conductor only



### Short circuit withstand (continued)

#### Analytical determination of short circuit currents

In order to calculate the value of the estimated short circuit current at any point of the circuit, it is sufficient to apply the formulas shown below, knowing the impedance calculated at the origin of the system up to the point being assessed. In the formulas shown below, the value of the short circuit power is considered infinite and the short circuit impedance is equal to 0. This makes it possible to define short circuit current values higher than the actual ones, but generally acceptable



Line resistance $RL = r \cdot L$	<b>RL</b> = resistance of the line upstream (m) <b>r</b> = specific line resistance (m/m) <b>L</b> = upstream line length (m)
Line reactance $XL = x \cdot L$	<b>XL</b> = upstream line reactance (m) <b>x</b> = specific line reactance (m/m)
TRANSFORMER resistance $RE = \frac{1000 P_{cu}}{3 I_n^2}$	<b>RE</b> = transformer secondary equivalent resistance (m) <b>P<sub>cu</sub></b> = transformer COPPER losses (W) <b>I<sub>n</sub></b> = transformer rated current (A)
TRANSFORMER impedance $ZE = \frac{V_{cc}\% V^2c}{100 P}$	<b>ZE</b> = transformer secondary equivalent impedance (m) <b>V<sub>c</sub></b> = phase voltage (V) <b>V<sub>cc</sub>%</b> = percentage short circuit voltage <b>P</b> = transformer power (kVA)
TRANSFORMER reactance $XE = \sqrt{ZE^2 - RE^2}$	<b>XE</b> = transformer secondary equivalent reactance (m)
Short circuit impedance $Z_{cc} = \sqrt{(RL + RE)^2 + (XL + XE)^2}$	<b>Z<sub>cc</sub></b> = total short circuit impedance (m)
Estimated short circuit current $I_{cc} = \frac{V_c}{\sqrt{3} Z_{cc}}$	<b>I<sub>cc</sub></b> = symmetric component of the short circuit current (kA)

Aluminium				
Rating (A)	kA 3 phase I <sub>ccw</sub> <sup>1</sup>	kA 3 phase I <sub>pk</sub>	kA 1 phase I <sub>ccw</sub> <sup>1</sup>	kA 1 phase I <sub>pk</sub>
630	36	76	22	48
800	42	88	25	55
1000	50	110	30	66
1250	75	165	45	99
1600	80	176	48	106
2000	80	176	48	106
2500	150	330	90	198
3200	160	352	96	211
4000	160	352	96	211

Copper				
Rating (A)	kA 3 phase I <sub>ccw</sub> <sup>1</sup>	kA 3 phase I <sub>pk</sub>	kA 1 phase I <sub>ccw</sub> <sup>1</sup>	kA 1 phase I <sub>pk</sub>
800	45	95	27	57
1000	50	110	30	66
1250	60	132	36	79
1600	85	187	51	112
2000	88	194	53	116
2500	88	194	53	116
3200	170	374	102	224
4000	176	387	106	232
5000	176	387	106	232

1 : I<sub>ccw</sub> for 1 second

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## technical information

### ■ Harmonics

In a distribution system, currents and voltages should have a perfectly sinusoidal shape. However, in practice the equipment contains electric devices such as changeover devices or dimmers that make the load not linear

The currents absorbed, although at regular intervals and with frequencies equal to that of the rated voltage, sometimes have a non-sinusoidal wave form, which has the following negative effects :

- worsening of the power factor
- heating of the neutral
- additional losses in electric machinery (transformers and motors)
- instable operation of the protection elements (thermal magnetic and earth leakage circuit breakers)

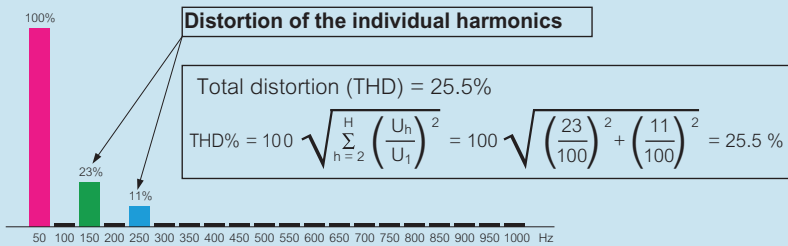
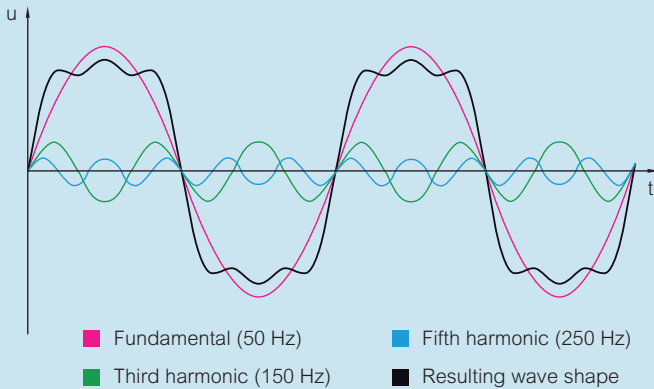
In industrial plants these conditions have been occurring for a long time. However, they are now occurring more and more in service sector distribution systems, where, from backbone distribution (which uses 3 phase lines), single phase loads are often distributed, which contributes to increasing the unbalance of the electric system

Each type of non-sinusoidal periodical wave may be split into a more or less large number of sinusoids (called harmonic components)

A deformed current at a frequency of 50 Hz, like the example represented by the magenta line on the figure, consists of many sinusoidal currents with frequency of 50 Hz (fundamental), 100 Hz (second harmonic component), 150 Hz (third harmonic), and so on

The presence of current harmonics represents an important problem, causing overload conditions both on phase conductors, and on any neutral conductor, and results in the reduction of the conductor's permitted load

### Measurement of harmonic distortion carried out with a network analyser



### Choice of rating when in the presence of harmonics

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

Rated current (A)	630 A	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A
<b>SCP busbar to be used</b>										
<b>THD ≤ 15%</b>	630	800	1000	1250	1600	2000	2500	3200	4000	5000
<b>15% &lt; THD ≤ 33%</b>	800	1000	1250	1600	2000	2500	3200	4000	5000	–
<b>THD &gt; 33%</b>	1000	1250	1600	2000	2500	3200	4000	5000	–	–

**Note**  
200% neutral versions are available for systems with harmonics present on the neutral

### ■ Measurement of magnetic induction

Since 1994, with a study carried out by Chalmers University of Technology of Goteborg, Legrand has taken an interest in the issues linked with the electromagnetic emissions in their Zucchini products, keeping at the forefront of the latest legislative directive, which has only recently imposed the quality standards that were already widely met by Zucchini busbar trunking systems

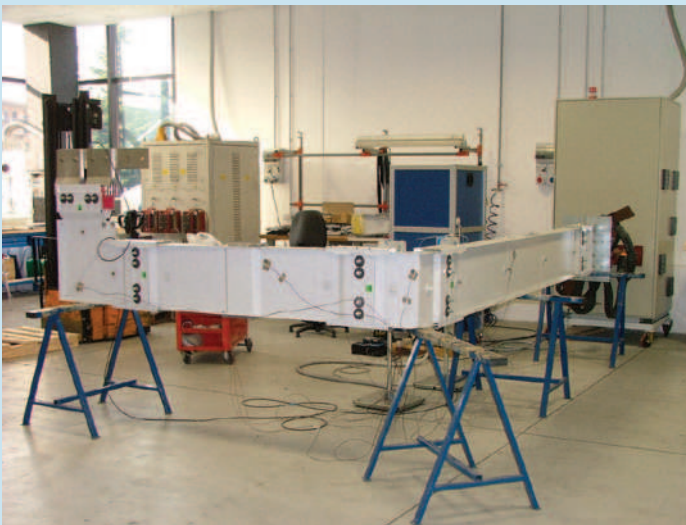
The ACAE (Association for the Certification of Electric and Electronic Equipment) certified internal laboratory is capable of carrying out the measurement of the electromagnetic emissions of busbar trunking systems. This measurement is nowadays one of the tests to which the products are subjected before they reach the market

The busbar trunking system in itself already minimises electromagnetic emissions, which are much lower when compared with those generated by cables with the same current intensity

It is a well-known fact that the electromagnetic field is the result of the superimposition of two fields : the electric and the magnetic field. The first is totally shielded by the equipotential metal casing of the busbar trunking system, while the second is very low due to the intrinsic characteristic of the busbar trunking system. More precisely, due to the fact that busbar conductors are extremely close inside the busbar package, the three busbar conductors, crossed by three balanced currents displaced by 120°, induce fields that tend to overlap, cancelling one another, therefore resulting in an extremely low external impact

However, also in conditions of imperfect current balance, the metal casing of the busbar trunking system is capable of reducing most of the magnetic field, which otherwise would spread through the surrounding environment

### Testing at Legrand's laboratory in Italy for the approval certification of Zucchini SCP busbar trunking systems



The laboratory tests carried out show how the magnetic induction emitted by SCP busbar trunking systems, measured at a distance of approximately one metre, is well below the critical value of 3  $\mu\text{T}$ . With Legislative Decree DPCM dated 8/7/2003, Italian law set the first exposure limit at 100  $\mu\text{T}$ . In addition, in locations where attendance is expected for no less than four hours a day, an attention value of 10  $\mu\text{T}$  has been set, to avoid possible long term effects on health. In the decree, the 3  $\mu\text{T}$  threshold is indicated as the 'quality objective'. However, as the product is intended for the European and world market, low magnetic emission is a fundamental point that cannot be disregarded, to ensure a presence in foreign countries : one example of this is Germany, where for over 10 years the regulation has set a cautionary limit of 3  $\mu\text{T}$  as the maximum permitted threshold in certain structures, for example hospitals, so much so that in these types of environments the busbar trunking system has become a mandatory choice, as well as a high quality one

### ■ Measurement of magnetic induction (continued)

The high quality standard guaranteed by busbar trunking systems can be further appreciated by comparing the emission values measured against those of other commonly used equipment, as taken from table 7.1 of IEC 211-6 standard

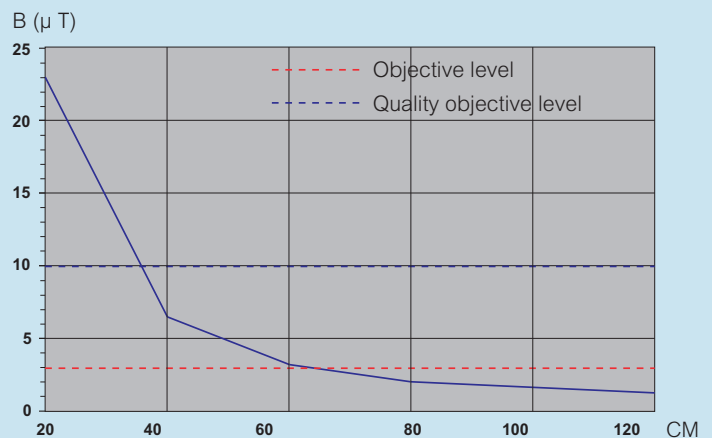
The measurements obtained on aluminium SCP busbar trunking systems with ratings of 2500 A – carried out in compliance with the requirements of the technical product standard IEC 61439-6 (BS EN 61439-6) – show that the magnetic induction generated by the busbar is in the range of 1.5 - 2  $\mu\text{T}$  at a distance of one metre from the busbar itself

These values also apply near the junction, which is considered the critical point due to the wider distance between the busbar conductors in this position

Levels of exposure to industrial frequency magnetic field sources (table 7.1 from IEC 211-6 standard)

Source	Magnetic induction ( $\mu\text{T}$ )	Distance
Electric shaver	150-240	on the face
Hairdryer	1-13	10-20 cm
Blender	0.9	40 cm
12 V, 20 W halogen lamp	0.5	30 cm
Aerosol therapy equipment	20-50	20-30 cm
Electric blanket	2	on contact
21 inch television set	0.3	50 cm
Washing machine	3.4	50 cm
Dishwasher	0.05	50 cm
Electric oven	0.4	20 cm
600 W drill	2	on the chest
100 W welding machine	14.5	on the chest
225 W grinder	0.8	40 cm
1 100 W compressor	8.2	40 cm
2 150 W arc welding machine	23.2	40 cm
75 MW, 55-65 kA, 150 t arc oven	100-270	in proximity
Electric scalpel	2.9	in proximity
Battery charger	22.9	in proximity
Echograph	0.8	operator position
Projector	2.3	20 cm

### One-dimensional trend of the magnetic induction near the junction. The blue dash shows the 'objective' level and the red dash shows the 'quality objective' required by law



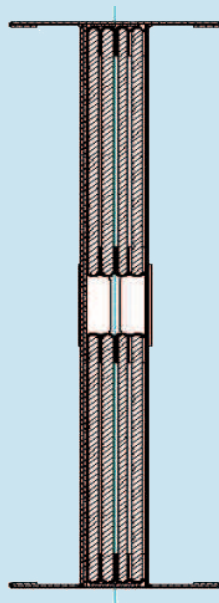
All dimensions (mm) are nominal

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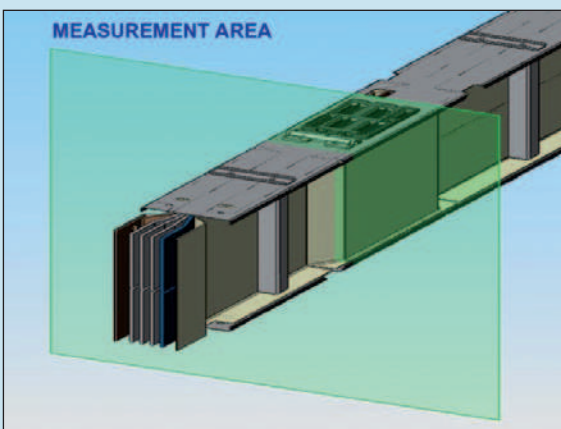
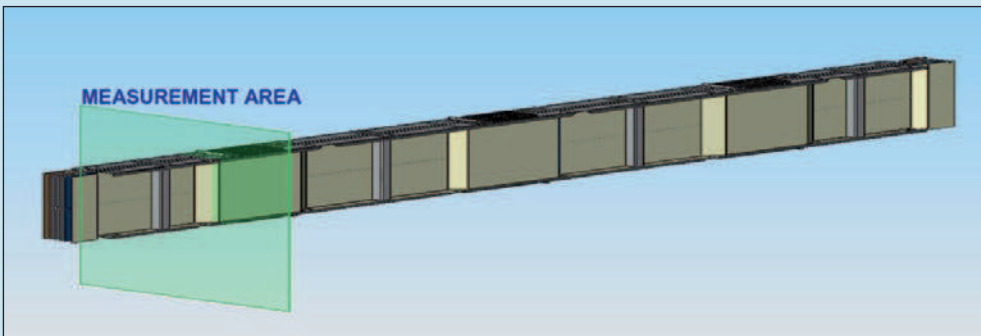
## ■ Example of measurement of the level of the magnetic field on the busbar

Transversal section (parallel to the measurement plane) of the SCP busbar on which the test is carried out



Graphic representation of an SCP double busbar 3 m straight length

Shown in green is the orthogonal plane of the element on which the magnetic inductions referred to in the following graphs are measured



Detailed view

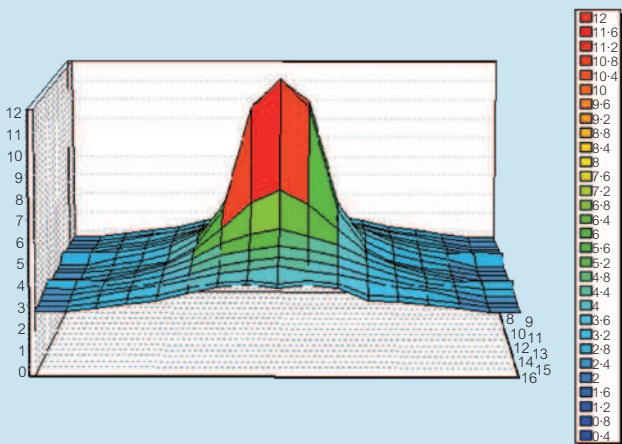
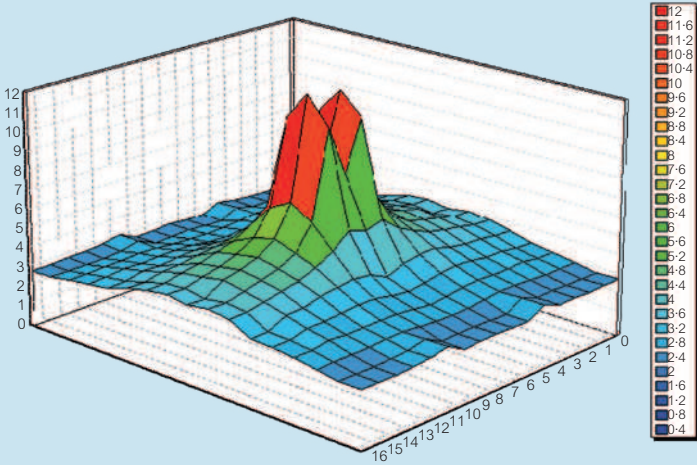
**■ Magnetic induction graphs at 60 cm from the busbar**

The graphs shown refer to the measurements carried out on the aluminium SCP prefabricated electric busbar with rated load of 2500 A, crossed by a 2500 A current

The measurements carried out at 60 cm from the junction are to be considered as higher due to the magnetic induction generated by the busbar power supply :  
due to the intrinsic geometry of the measurement laboratory structure, it must be assumed that the measurement area is also affected by a magnetic induction of no less than 1.5 µT generated by the line power supply

In view of this observation, in case of actual operating line the quality objective indicated by Legislative Decree DPCM dated 8/7/2003 is widely met at less than one metre from the axis of the busbar

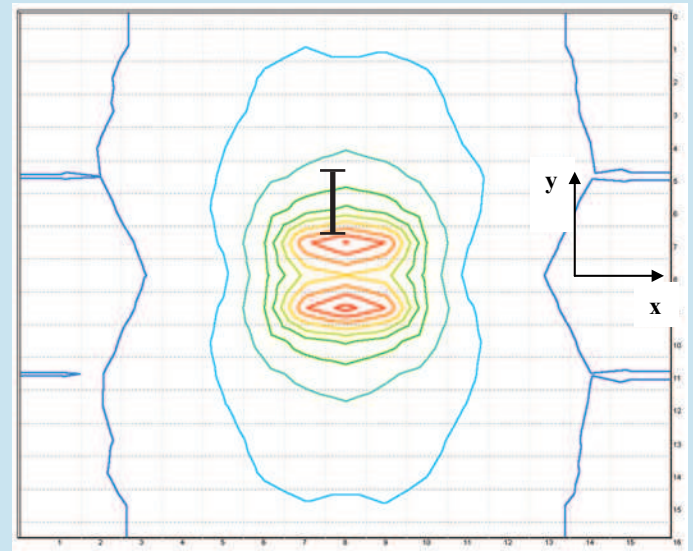
**3 dimensional development of magnetic induction around the busbar at 60 cm from the junction**



**■ Magnetic induction graphs at 60 cm from the busbar (continued)**

As it can be seen on the graph below, up to a distance of approximately 40 cm from the axis of the busbar, the field appears generated by two separate sources. This is due to the fact that the busbar being analysed consists of two series of busbar conductors set in parallel at a distance of approximately 5 cm from each other

The cells making up the measurement grid are 20 cm squares



**2 dimensional map of the magnetic induction around the busbar at 60 cm from the junction**  
At the centre of the graphic is a schematic representation of the busbar

All dimensions (mm) are nominal

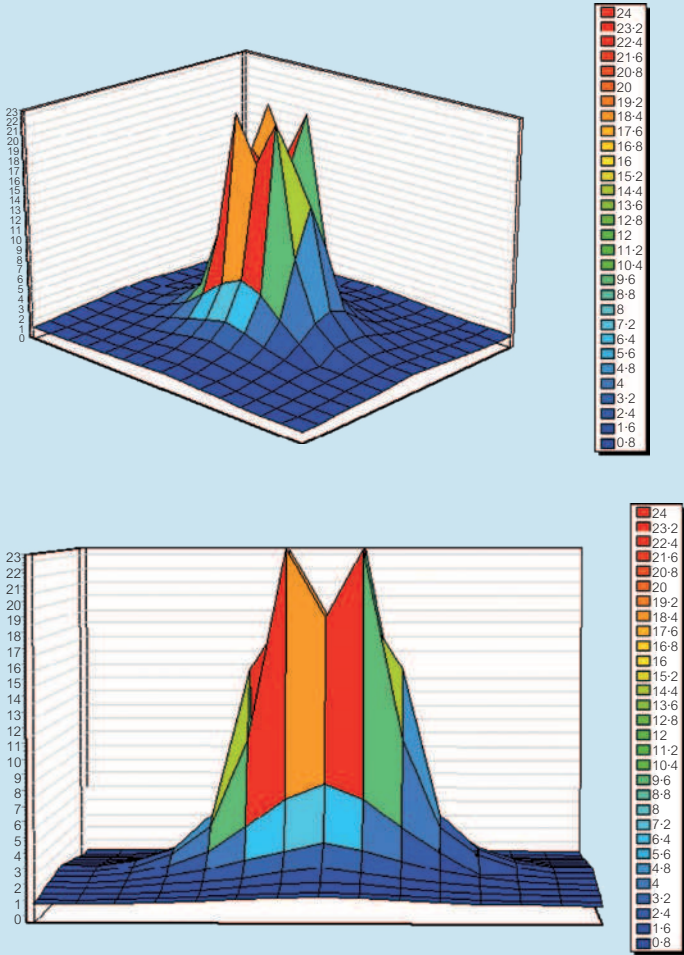
# SCP super compact busbar

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### ■ Graphs showing magnetic induction near the junction

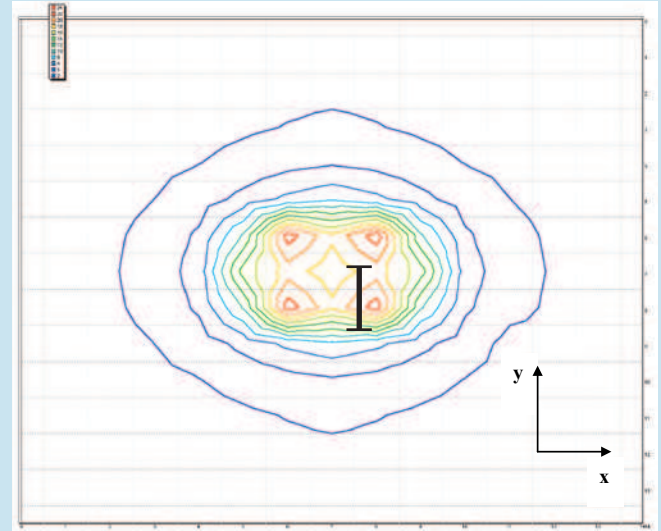
It is considered important to show, side by side with the results relating to straight lengths, the results of the measurement carried nearby the electro-mechanic junction of the busbar length. This location may in fact be considered critical, as here magnetic induction is higher due to the higher distance between the busbar conductors corresponding to the various phases of the line

#### Tridimensional development of magnetic induction near the joint



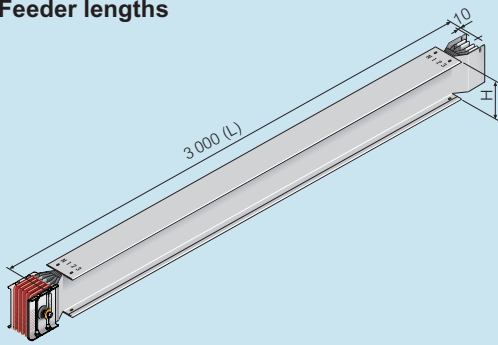
### ■ Graphs showing magnetic induction near the junction (continued)

**2 dimensional map of magnetic induction near the junction**  
 At the centre of the graphic is a schematic representation of the busbar





### ■ Feeder lengths

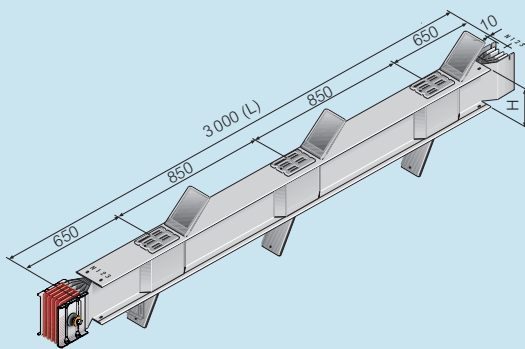


Dimension H changes with the rating, and is specified on p. 112-117

#### Minimum and maximum dimensions of single and double bars

Aluminium	630 A to 4 000 A
Copper	800 A to 5 000 A
(L) min./max. (mm)	1 000 / 3 000

### ■ Distribution lengths



Dimension H changes with the rating, and is specified on p. 112-117

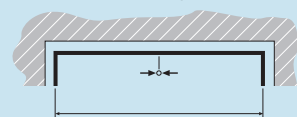
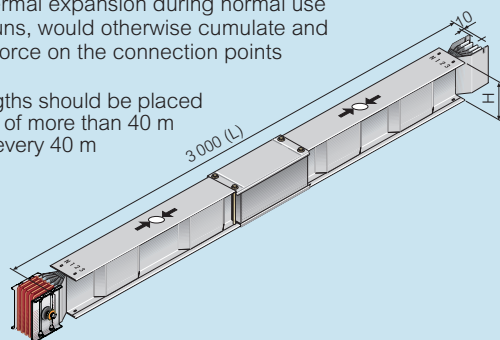
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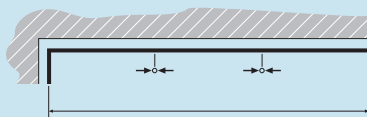
### ■ Expansion lengths

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

Expansion lengths should be placed in straight runs of more than 40 m and repeated every 40 m



e.g. 70 m straight section should contain 1 expansion length in the middle



e.g. 120 m straight section should contain 2 expansion lengths, spaced every 40 m

All dimensions (mm) are nominal

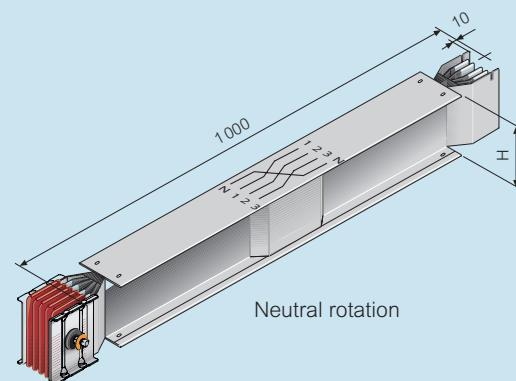
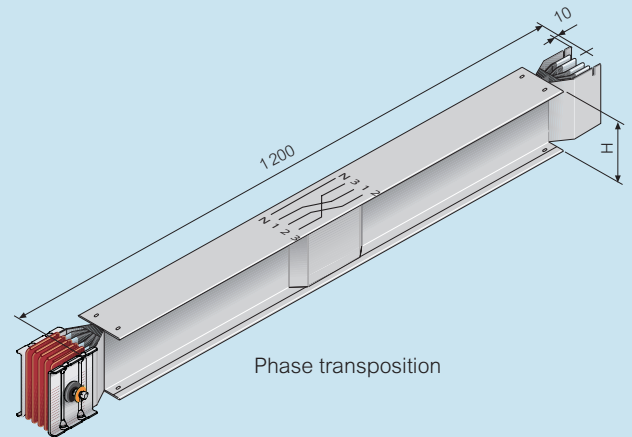
### ■ Transposition lengths

In runs exceeding 100 m it is recommended to include two transposition lengths to balance mutual phase reactance and electric impedance (one at 1/3 and one at 2/3 distance of the run)

Dimension H changes with the rating and is specified on p. 112-117

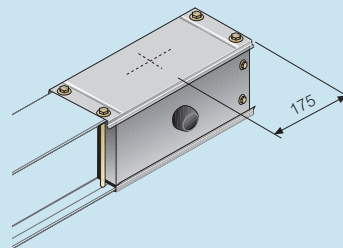
Neutral rotation can be used when the sequence of the distribution board phases is different to that of the transformer

For more information please contact us on +44 (0) 370 608 9020



### ■ End stops

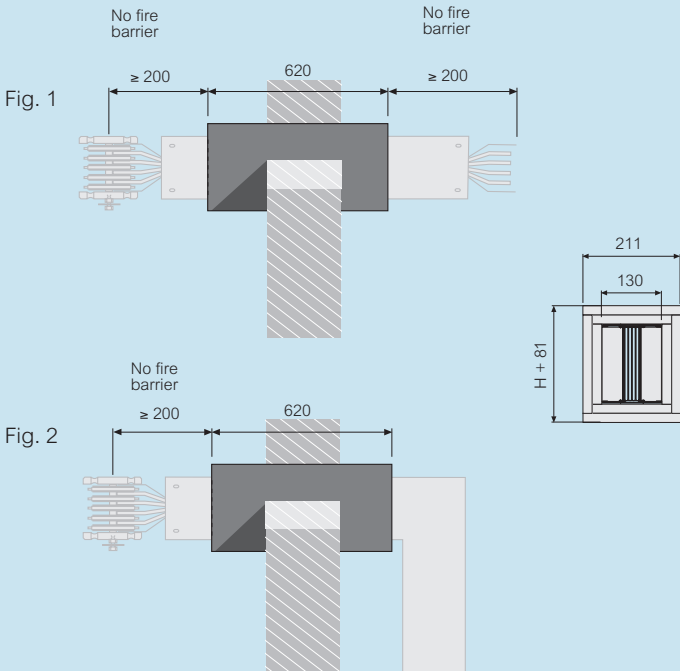
Maintain IP 55 protection at the end of a run



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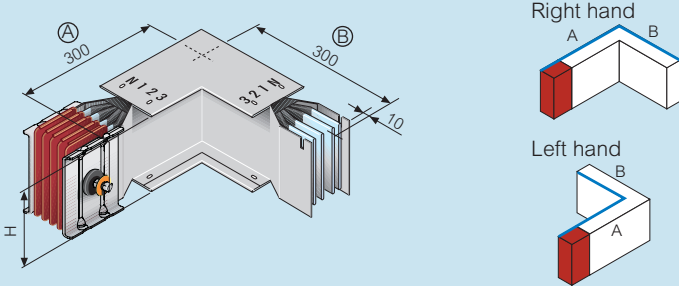
### ■ Fire barriers



When ordering, please specify the length that will be equipped with an internal fire barrier  
 Due to the geometry of the models 800 A to 2000 A in aluminium and 1000 A to 2500 A 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  
 Dimension H changes with the rating and is specified on p. 112-117

### ■ Direction changes

#### Horizontal elbow – standard dimensions



Dimension H changes with the rating and is specified on p. 112-117  
 The dimensions refer to standard elbows

#### Horizontal elbow – bespoke dimensions

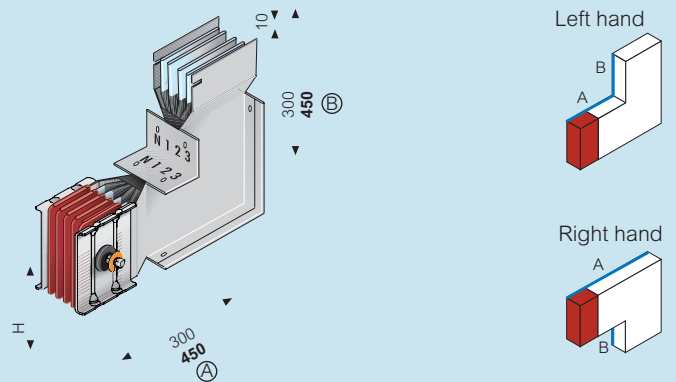
Please specify required dimensions when ordering

#### Minimum and maximum dimensions of single and double bars

Aluminium	630 A to 4 000 A
Copper	800 A to 5 000 A
(A) min./max. (mm)	250 / 1 299
(B) min./max. (mm)	250 / 1 299

### ■ Direction changes

#### Vertical elbow – standard dimensions



Dimension H changes with the rating, and is specified on p. 112-117  
 The dimensions refer to standard elbows (bold = double bar)

#### Vertical elbow – bespoke dimensions

Please specify required dimensions when ordering

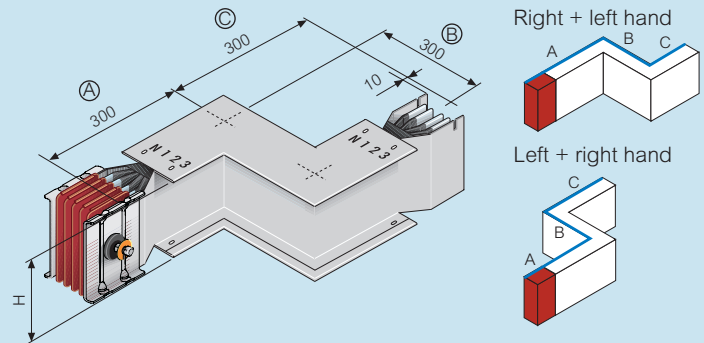
#### Minimum and maximum dimensions of single bar

Aluminium	630 A to 2 000 A
Copper	800 A to 2 500 A
(A) min./max. (mm)	300 / 1 299
(B) min./max. (mm)	300 / 1 299

#### Minimum and maximum dimensions of double bar

Aluminium	2 500 A to 4 000 A
Copper	3 200 A to 5 000 A
(A) min./max. (mm)	450 / 1 449
(B) min./max. (mm)	450 / 1 449

#### Double horizontal elbow – standard dimensions



Dimension H changes with the rating, and is specified on p. 112-117  
 The dimensions refer to standard elbows

#### Double horizontal elbow – bespoke dimensions

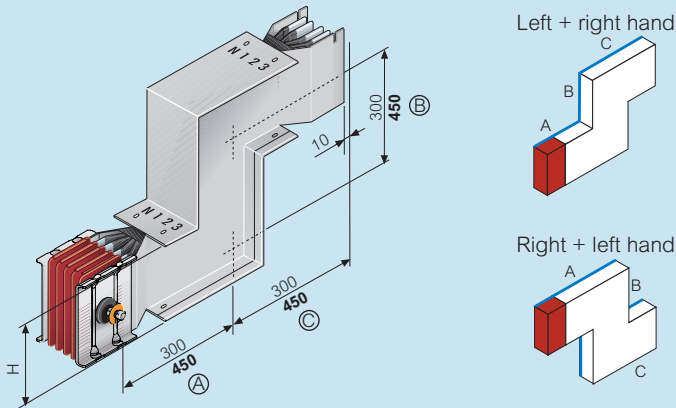
Please specify required dimensions when ordering

#### Minimum and maximum dimensions of single and double bars

Aluminium	630 A to 4 000 A
Copper	800 A to 5 000 A
(A) min./max. (mm)	250 / 1 299
(B) min./max. (mm)	50 / 599
(C) min./max. (mm)	250 / 1 299

All dimensions (mm) are nominal

**Double vertical elbow – standard dimensions**



Dimension H changes with the rating, and is specified on p. 112-117  
The dimensions refer to standard elbows (bold = double bar)

**Double vertical elbow – bespoke dimensions**

Please specify required dimensions when ordering

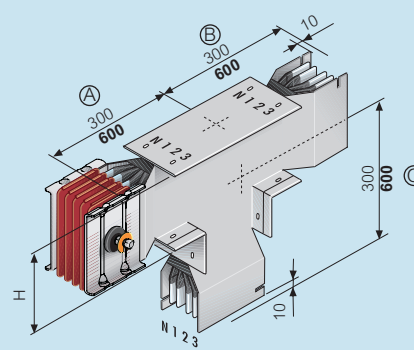
**Minimum and maximum dimensions of single bar**

Aluminium	630 A to 2 000 A
Copper	800 A to 2 500 A
(A) min./max. (mm)	300 / 1 299
(B) min./max. (mm)	50 / 599
(C) min./max. (mm)	300 / 1 299

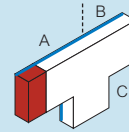
**Minimum and maximum dimensions of double bar**

Aluminium	2 500 A to 4 000 A
Copper	3 200 A to 5 000 A
(A) min./max. (mm)	450 / 1 449
(B) min./max. (mm)	50 / 899
(C) min./max. (mm)	450 / 1 449

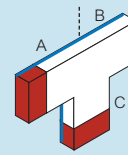
**Vertical tees – standard dimensions**



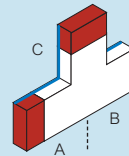
Right hand - female



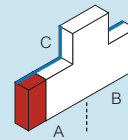
Right hand - male



Left hand - male



Left hand - female



Dimension H changes with the rating, and is specified on p. 112-117  
The dimensions refer to standard tees (bold = double bar)

**Vertical tees – bespoke dimensions**

Please specify required dimensions when ordering

**Minimum and maximum dimensions of single bar**

Aluminium	630 A to 2 000 A
Copper	800 A to 2 500 A
(A) min./max. (mm)	250 / 1 299
(B) min./max. (mm)	200 / 599
(C) min./max. (mm)	300 / 1 299

**Minimum and maximum dimensions of double bar**

Aluminium	2 500 A to 4 000 A
Copper	3 200 A to 5 000 A
(A) min./max. (mm)	250 / 1 449
(B) min./max. (mm)	330 / 749
(C) min./max. (mm)	450 / 1 449

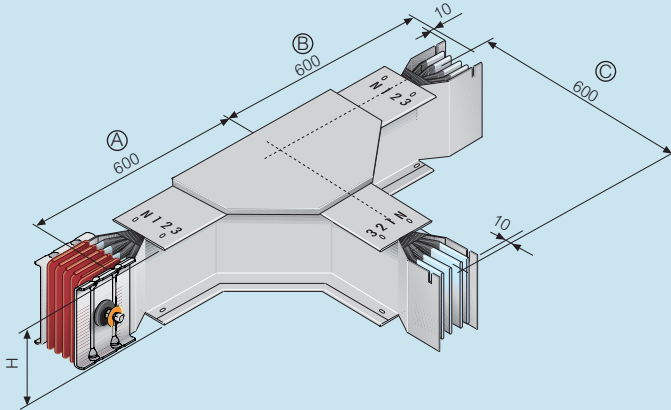
All dimensions (mm) are nominal

# SCP super compact busbar

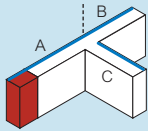
technical information

## Direction changes (continued)

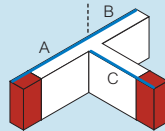
### Horizontal tees – standard dimensions



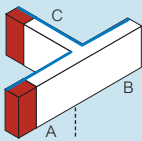
Right hand – female



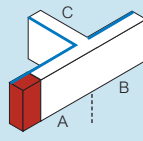
Right hand – male



Left hand – male



Left hand – female



Dimension H changes with the rating, and is specified on p. 112-117  
The dimensions refer to standard tees (bold = double bar)

### Horizontal tees – bespoke dimensions

Please specify required dimensions when ordering

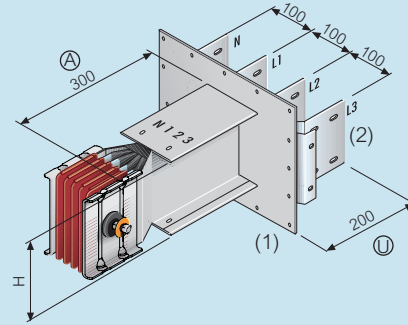
#### Minimum and maximum dimensions of single and double bars

Aluminium	630 A to 4 000 A
Copper	800 A to 5 000 A
(A) min. / max. (mm)	550 / 1 049
(B) min. / max. (mm)	550 / 1 049
(C) min. / max. (mm)	550 / 1 049

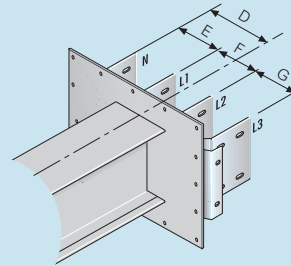
All dimensions (mm) are nominal

## Connection interfaces – in-line

### Standard dimensions

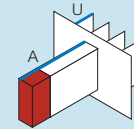


### Non-standard centre distance

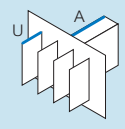


Dimensions to be provided when requesting a non-standard centre distance

Type 1 – male



Type 2 – female



Dimension H changes with the rating, and is specified on p. 112-117  
See p. 100 for dimensions of cover plate (1) and bars (2)

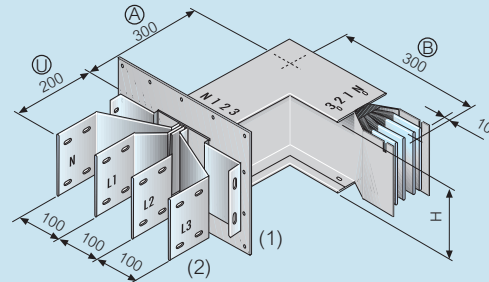
### Connection interfaces – in-line bespoke dimensions

Please specify required dimensions when ordering

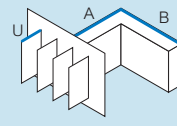
#### Minimum and maximum dimensions of single and double bars

Aluminium	630 A to 4 000 A
Copper	800 A to 5 000 A
(A) min. / max. (mm)	300 / 1 299
(U) min. / max. (mm)	150 / 400

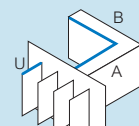
## Connection interfaces + horizontal elbows



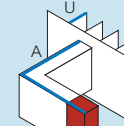
Type 1 – female



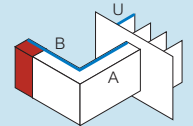
Type 2 – female



Type 3 – male



Type 4 – male



Dimension H changes with the rating and is specified on p. 112-117  
The dimensions are referred to standard elements  
See p. 100 for dimensions of standard elements

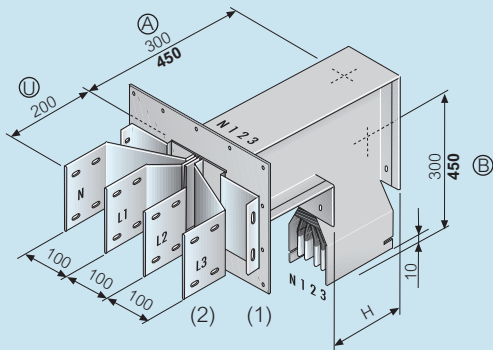
### Connection interfaces + horizontal elbows – bespoke dimensions

Please specify required dimensions when ordering

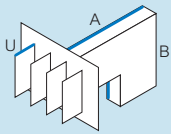
#### Minimum and maximum dimensions of single and double bars

Aluminium	630 A to 4 000 A
Copper	800 A to 5 000 A
(A) min. / max. (mm)	150 / 1 299
(B) min. / max. (mm)	250 / 1 299
(U) min. / max. (mm)	150 / 400

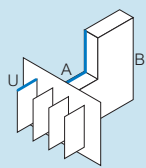
### ■ Connection interfaces + vertical elbows



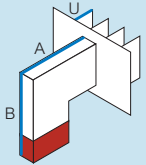
Type 1 – female



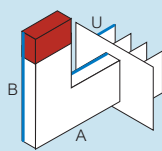
Type 2 – female



Type 3 – male



Type 4 – male



Dimension H changes with the rating and is specified on p. 112-117  
The dimensions refer to standard tees (bold = double bar)  
See p. 100 for dimensions of cover plate (1) and bars (2)

### ■ Connection interfaces + vertical elbows – bespoke dimensions

Please specify required dimensions when ordering

#### Minimum and maximum dimensions of single bar

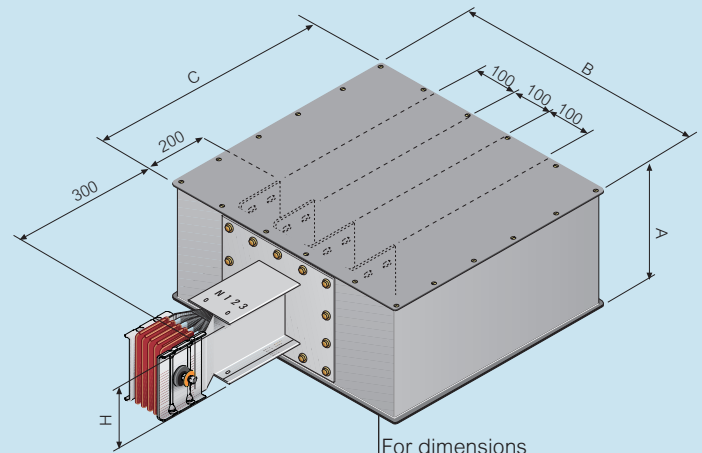
Aluminium	630 A to 2000 A
Copper	800 A to 2500 A
(A) min. / max. (mm)	150 / 1299
(B) min. / max. (mm)	300 / 1299
(U) min. / max. (mm)	150 / 400

#### Minimum and maximum dimensions of double bar

Aluminium	2500 A to 4000 A
Copper	3200 A to 5000 A
(A) min. / max. (mm)	300 / 1449
(B) min. / max. (mm)	450 / 1449
(U) min. / max. (mm)	150 / 400

### ■ Feed units

#### End feed unit

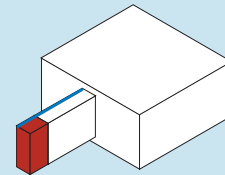


For dimensions of holes for connections, see p. 100

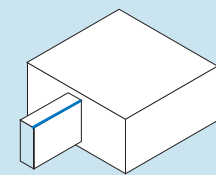
Dimension H changes with the rating and is specified on p. 112-117

Rear cable input  
Aluminium gland plate(s) for cable entry  
170mm x 410mm  
Single bar : 1 plate  
Double bar : 2 plates

Type 1 – male



Type 2 – female



#### Dimensions of the box

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

All dimensions (mm) are nominal

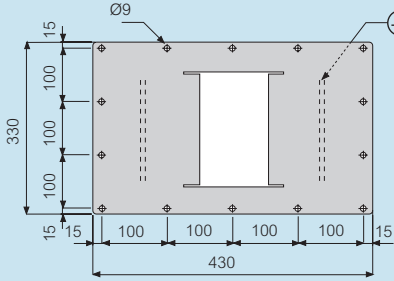
# SCP super compact busbar

technical information

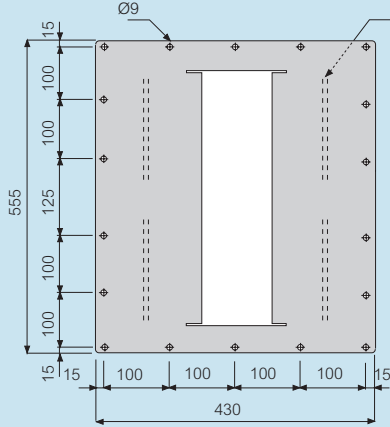
## Connection interfaces

### Cover plate drilling details

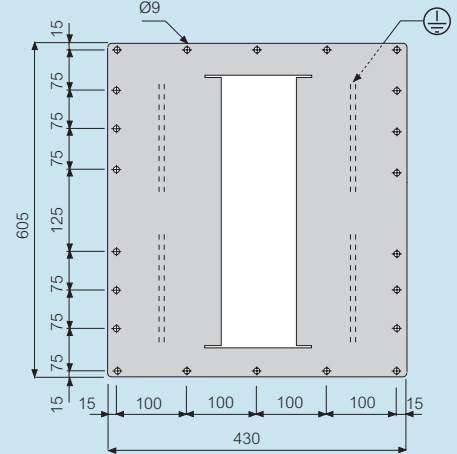
Aluminium 630 A to 2000 A  
Copper 800 A to 2500 A



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

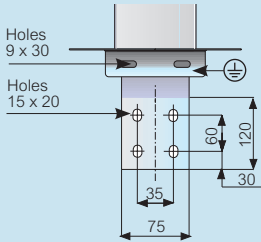


Aluminium 4000 A  
Copper 5000 A

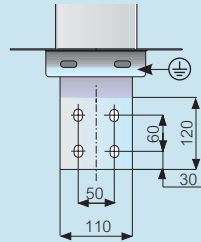


### Bar drilling details

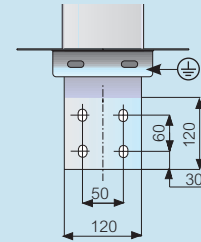
Aluminium 630 A  
Copper 800 A



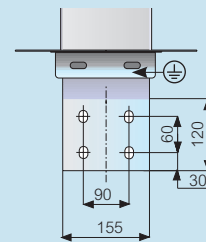
Aluminium 800 A-1000 A  
Copper 1000 A-1250 A



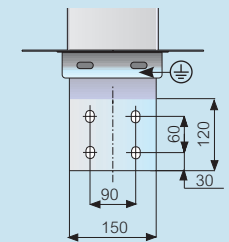
Aluminium 1250 A



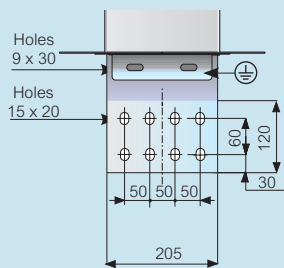
Aluminium 1600 A



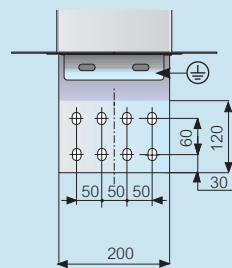
Copper 1600-2000 A



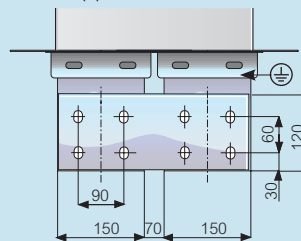
Aluminium 2000 A



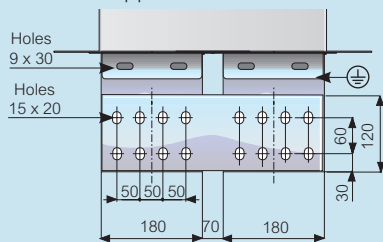
Copper 2500 A



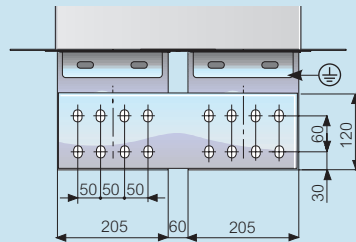
Aluminium 2500 A  
Copper 3200 A



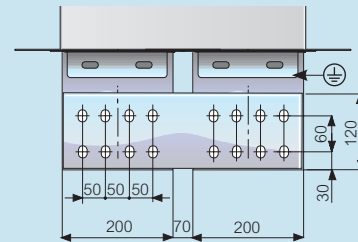
Aluminium 3200 A  
Copper 4000 A



Aluminium 4000 A



Copper 5000 A



All dimensions (mm) are nominal

### Compatibility with Zucchini SCP busbar

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

#### 400 V secondary voltage

Transformer			Busbar (aluminium)		
kVA (kVA)	Insulation class (kV)	400 V current (A)	IK 6 % (kA)	Family	Connection component
630	12, 17-5, 24, 36	910	15-20	SCP 1 000 A	60281012P
800		1 155	19-30	SCP 1 250 A	60281014P
1 000		1 444	24-10	SCP 1 600 A	60281016P
1 250		1 805	30-10	SCP 2 000 A	60281017P
1 600		2 310	38-50	SCP 2 500 A	60391014P
2 000		2 887	48-20	SCP 3 200 A	60391016P
2 500		3 609	60-20	SCP 4 000 A	60391017P

Transformer			Busbar (copper)		
kVA (kVA)	Insulation class (kV)	400 V current (A)	IK 6 % (kA)	Family	Connection component
630	12, 17-5, 24, 36	910	15-20	SCP 1 000 A	65281011P
800		1 155	19-30	SCP 1 250 A	65281013P
1 000		1 444	24-10	SCP 1 600 A	65281015P
1 250		1 805	30-10	SCP 2 000 A	65281016P
1 600		2 310	38-50	SCP 2 500 A	65391018P
2 000		2 887	48-20	SCP 3 200 A	65391015P
2 500		3 609	60-20	SCP 4 000 A	65391016P
3 150	4 547	65-00 <sup>1</sup>	SCP 5 000 A	65391018P	

1 : 7% impedance

#### 417 V secondary voltage

Transformer			Busbar (aluminium)		
kVA (kVA)	Insulation class (kV)	417 V current (A)	IK 6 % (kA)	Family	Connection component
630	12, 17-5, 24, 36	873	14-60	SCP 1 000 A	60281012P
800		1 108	18-50	SCP 1 250 A	60281014P
1 000		1 385	23-10	SCP 1 600 A	60281016P
1 250		1 731	28-90	SCP 2 000 A	60281017P
1 600		2 216	37-00	SCP 2 500 A	60391014P
2 000		2 770	46-20	SCP 3 200 A	60391016P
2 500		3 462	57-70	SCP 4 000 A	60391017P

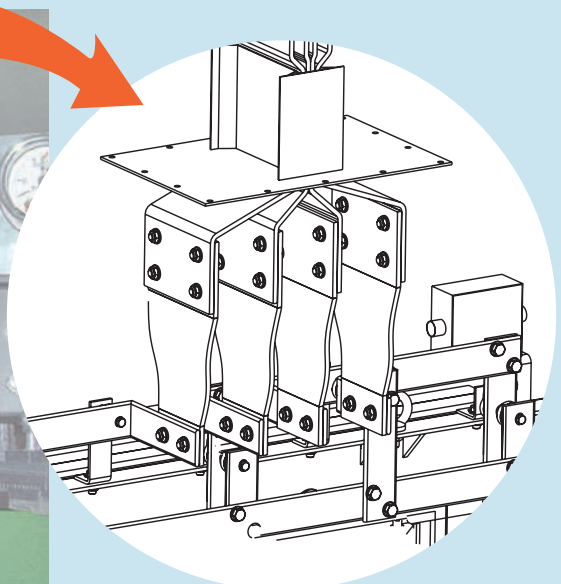
Transformer			Busbar (copper)		
kVA (kVA)	Insulation class (kV)	417 V current (A)	IK 6 % (kA)	Family	Connection component
630	12, 17-5, 24, 36	873	14-60	SCP 1 000 A	65281011P
800		1 108	18-50	SCP 1 250 A	65281013P
1 000		1 385	23-10	SCP 1 600 A	65281015P
1 250		1 731	28-90	SCP 2 000 A	65281016P
1 600		2 216	37-00	SCP 2 500 A	65391018P
2 000		2 770	46-20	SCP 3 200 A	65391015P
2 500		3 462	57-70	SCP 4 000 A	65391016P
3 150	4 362	62-40 <sup>1</sup>	SCP 5 000 A	65391018P	

#### 433 V secondary voltage

Transformer			Busbar (aluminium)		
kVA (kVA)	Insulation class (kV)	433 V current (A)	IK 6 % (kA)	Family	Connection component
630	12, 17-5, 24, 36	841	14-10	SCP 1 000 A	60281012P
800		1 067	17-80	SCP 1 250 A	60281014P
1 000		1 334	22-30	SCP 1 600 A	60281016P
1 250		1 667	27-80	SCP 2 000 A	60281017P
1 600		2 134	35-60	SCP 2 500 A	60391014P
2 000		2 667	44-50	SCP 3 200 A	60391016P
2 500		3 334	55-60	SCP 4 000 A	60391017P

Transformer			Busbar (copper)		
kVA (kVA)	Insulation class (kV)	433 V current (A)	IK 6 % (kA)	Family	Connection component
630	12, 17-5, 24, 36	841	14-10	SCP 1 000 A	65281011P
800		1 067	17-80	SCP 1 250 A	65281013P
1 000		1 334	22-30	SCP 1 600 A	65281015P
1 250		1 667	27-80	SCP 2 000 A	65281016P
1 600		2 134	35-60	SCP 2 500 A	65391018P
2 000		2 667	44-50	SCP 3 200 A	65391015P
2 500		3 334	55-60	SCP 4 000 A	65391016P
3 150	4 201	60-10 <sup>1</sup>	SCP 5 000 A	65391018P	

#### Transformer to busbar connection



# SCP super compact busbar

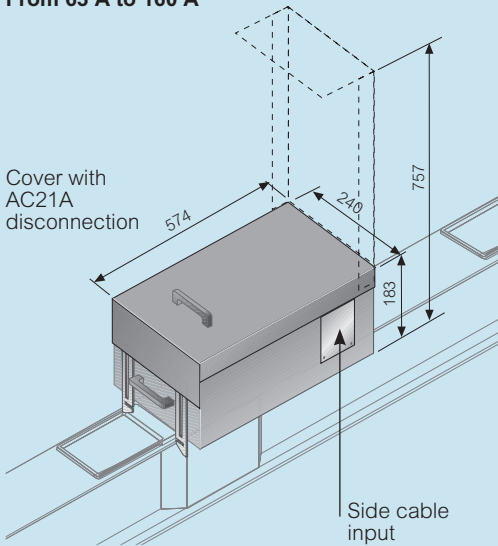
## technical information

### ■ Tap-off boxes

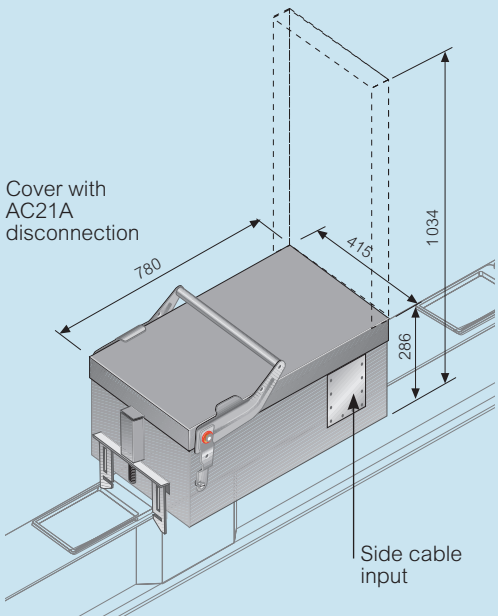
#### 63 A to 630 A : plug-in type

Polyester coated, galvanised steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current  
Fuses not included. Please contact us on +44 (0) 370 608 9020 for details of available fuses

#### With fuse carrier From 63 A to 160 A



#### With switch disconnecter From 250 A to 630 A

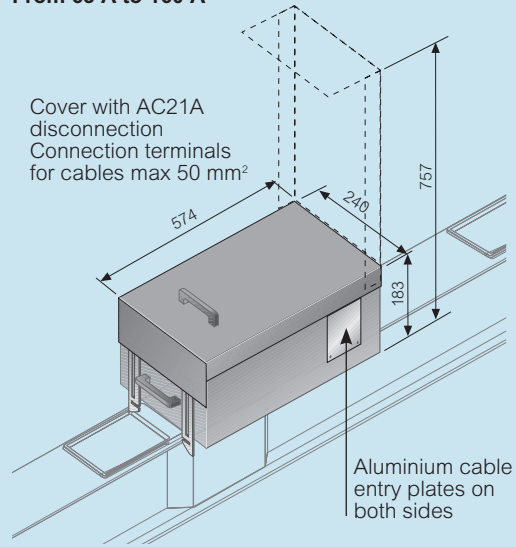


These tap-off boxes are equipped with a switch disconnecter (AC23) and a fuse carrier. The disconnecter switch is operated through a rotary handle on the cover (not shown in the picture)  
N.B. Cover with AC21A disconnection : it is not possible to open, close, install or pull out the tap-off box if the switch is in 'ON' position  
Can be installed and removed when the busbar is energized  
To be used with components with any rating, with tap-off outlets  
Fuses not included. Please contact us on +44 (0) 370 608 9020 for details of available fuses

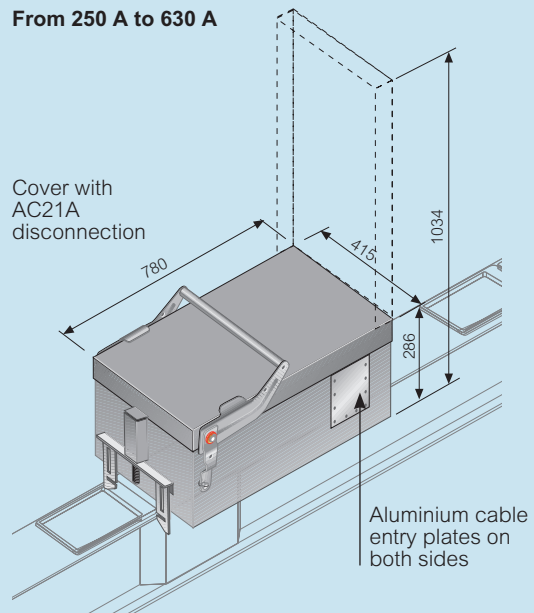
### ■ Tap-off boxes

#### Empty tap-off box 63 A to 630 A

#### From 63 A to 160 A



#### From 250 A to 630 A



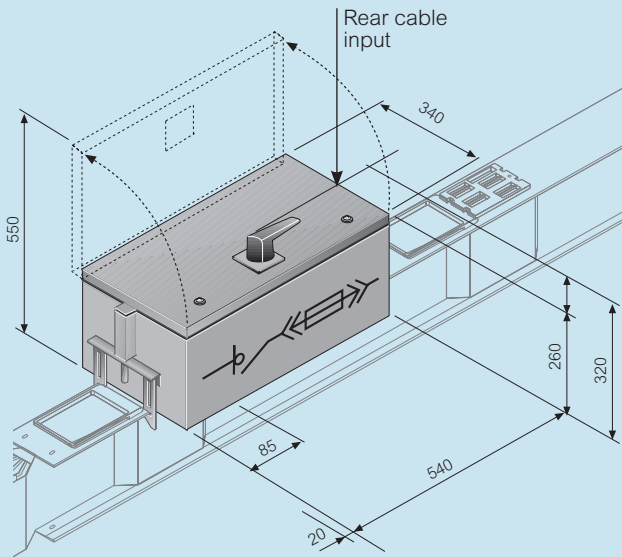
Tap-off boxes can be pre-equipped with DPX MCCBs on request, contact us on +44 (0) 370 608 9020  
Can be installed and removed when the busbar is energized  
To be used with components with any rating, with tap-off outlets

All dimensions (mm) are nominal



■ **Tap-off boxes**

With AC23A switch disconnecter and fuse carrier, 125 A to 400 A : plug-in type



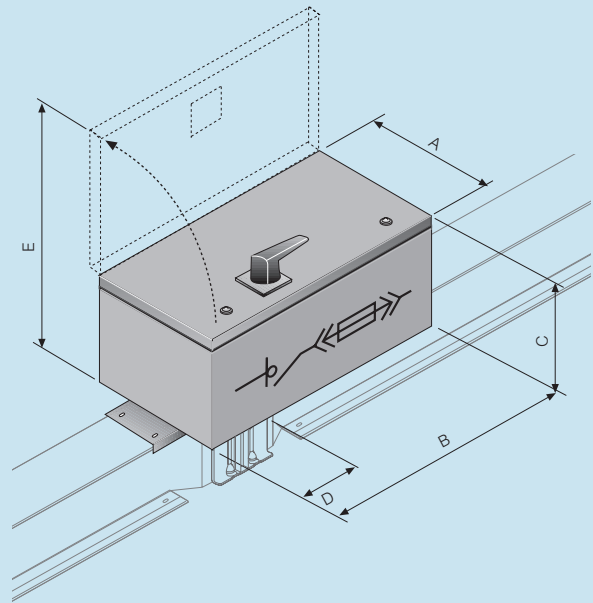
Can be installed and removed when the busbar is energized because the protective earth makes contact before other conductors  
To be applied on components with any rating, with tap-off outlets  
For operating voltages (Ue) different from 400 V, please contact us on +44 (0) 370 608 9020  
Fuses not included. Please contact us on +44 (0) 370 608 9020 for details of available fuses

**Specification**

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
		IEC 60947-3

■ **Bolt-on tap-off boxes**

With AC23 switch disconnecter and fuse carrier : 125 A to 1250 A



Please specify SCP type when ordering  
Boxes cannot be installed simultaneously on both sides of the same junction



**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 400 V please contact us on +44 (0) 370 608 9020  
Fuses not included. Please contact us on +44 (0) 370 608 9020 for details of available fuses

**Dimensions of the box**

Box rating	125 A to 400 A	630 A	800 A to 1250 A
(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

**Specification**

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
		IEC 60947-3

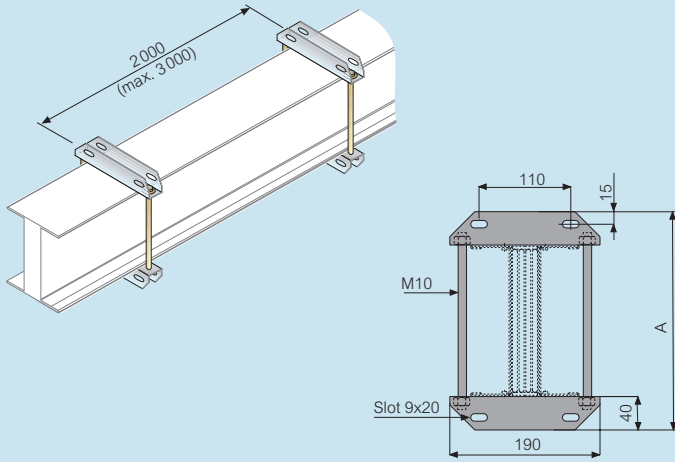
All dimensions (mm) are nominal

# SCP super compact busbar

technical information

## ■ Fixing supports

### Suspension bracket for edgeways installation

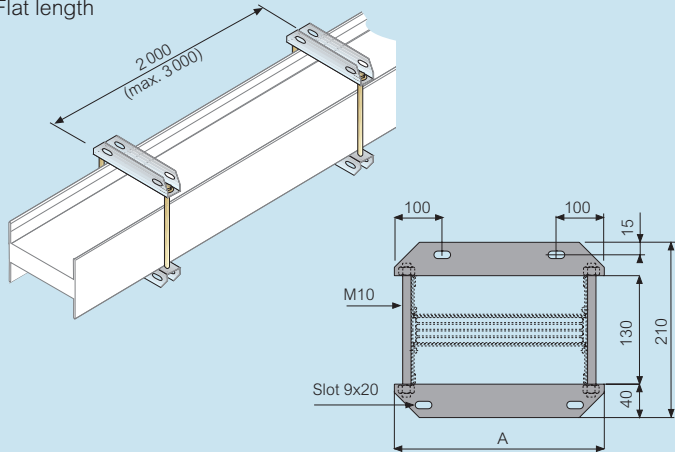


### Suspension bracket for edgeways installation

	Single bar						Double bar			
Aluminium busbar rating (A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Dimension A (mm)	210	210	210	210	250	300	460	520	560	–
	Single bar						Double bar			
Copper busbar rating (A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Dimension A (mm)	–	210	210	210	250	250	300	460	520	560

### Suspension bracket for flat installation

Flat length

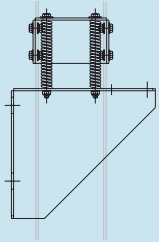


### Suspension bracket for flat installation

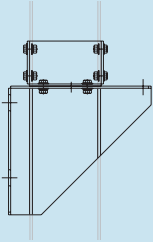
	Single bar						Double bar			
Aluminium busbar rating (A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Dimension A (mm)	190	190	190	190	315	315	430	490	530	–
	Single bar						Double bar			
Copper busbar rating (A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Dimension A (mm)	–	190	190	190	315	315	315	430	490	530

All dimensions (mm) are nominal

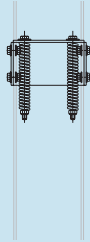
■ Fixing supports



Type A  
With bracket  
and spring



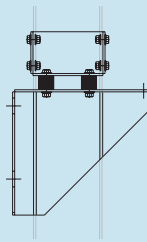
Type B  
Standard with  
anti-seismic  
bracket<sup>1</sup>



Type C  
With springs



Type D  
Bracket only



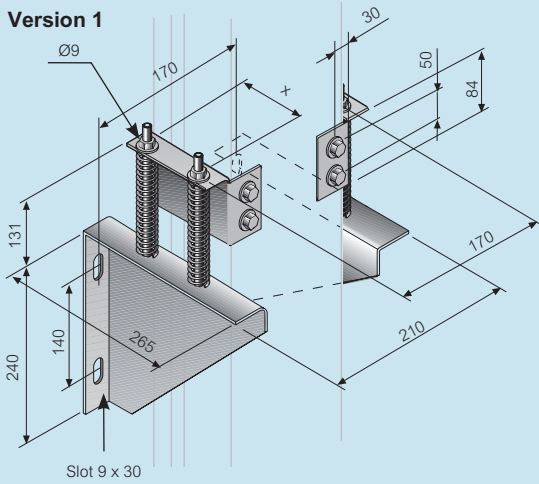
Type E  
Naval  
applications

Type A and B brackets are used for wall installation, while type C and D are used for floor installation

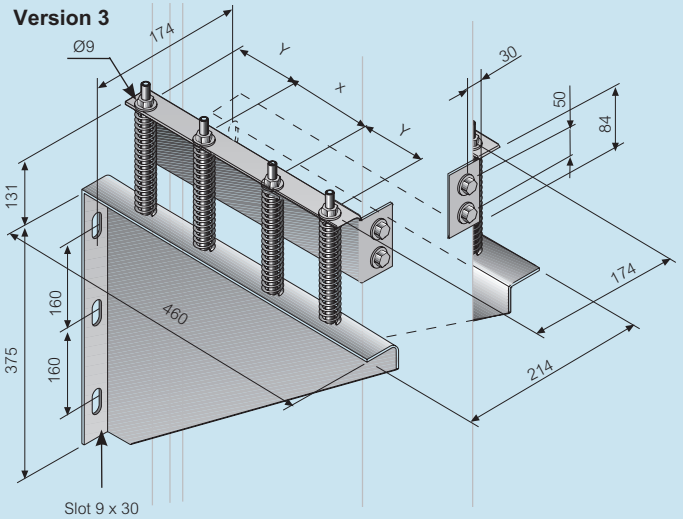
1 : For single bar lengths, the standard bracket is also anti-seismic rated  
For double bar loads there are two separate Cat. Nos. see p. 82

Fixing supports for vertical lengths – dimensions

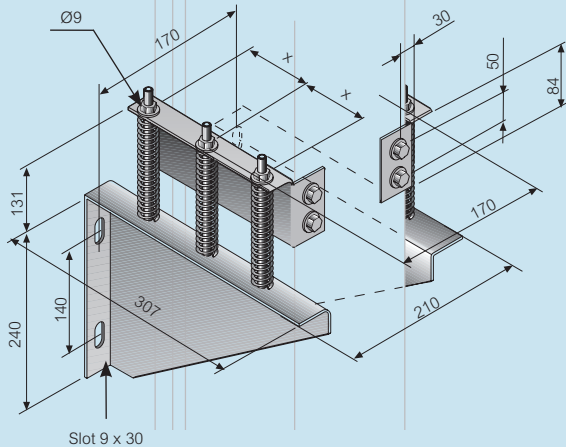
Version 1



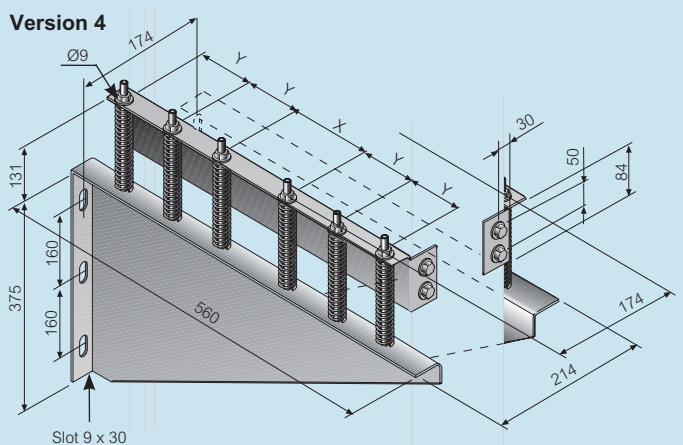
Version 3



Version 2



Version 4



X and Y dimensions of the brackets

	Version 1	Version 1	Version 2	Version 2	Version 3	Version 4	Version 4
Aluminium	630 A to 1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A
Copper	800 A to 1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A
x (mm)	90	120	80	90	80	80	80
y (mm)	-	-	-	-	110	80	90

All dimensions (mm) are nominal

# SCP super compact busbar

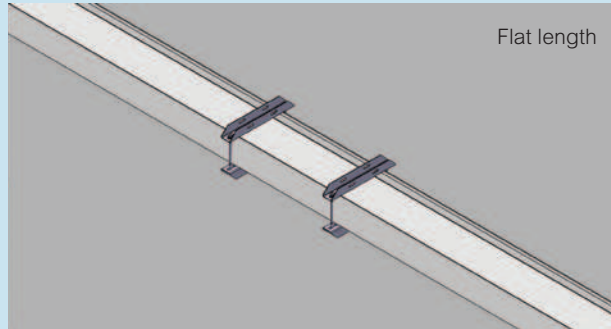
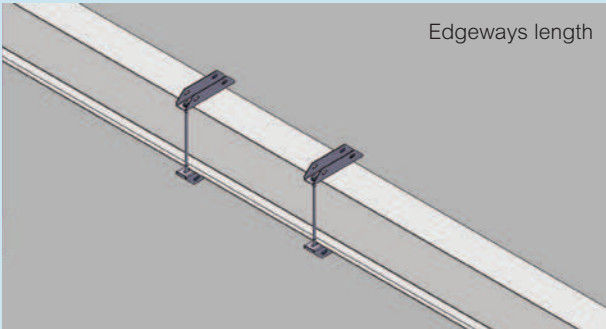
## technical information

### ■ Fixing in standard conditions

For vertical path sections of less than 2 m the use of standard suspension brackets is sufficient

#### Horizontal installation fixing

Fixing recommended : 1 bracket every 1.5 m



#### Vertical installation fixing (rising mains)

In the case of rising mains, in addition to the standard brackets, it will also be necessary to use other screw fixed brackets to prevent the busbar sliding

Due to their pre-loaded springs, the brackets absorb the forces pressing on the busbar and direct any expansion in a precise direction. They therefore operate as a limitation, and support the traction and compression forces of the busbar trunking system

#### • Section between 2 and 4 m

In the lowest point Type B vertical bracket if secured to the wall, or Type D if secured to the floor and one edgeways installation bracket

#### • Section of over 4 m

In the lowest point Type A vertical bracket if secured to the wall, or Type C if secured to the floor and one edgeways installation bracket every 1.5 m of the path and one Type A or C bracket based on the following table

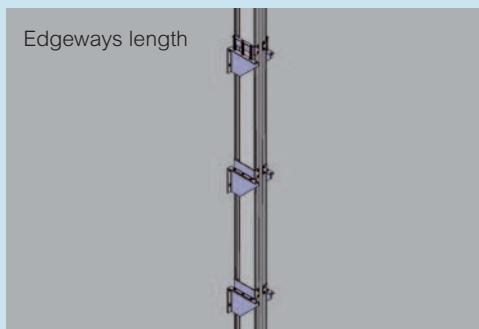
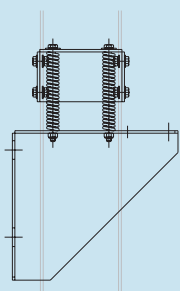
Aluminium		Copper	
Rating (A)	(m)	Rating (A)	(m)
630	17	–	–
800	16	800	10
1 000	16	1 000	9
1 250	15	1 250	9
1 600	12	1 600	7
2 000	10	2 000	6
2 500	14	2 500	4
3 200	12	3 200	7
4 000	10	4 000	6
–	–	5 000	5

### ■ Fixing for installation in seismic environments

#### Vertical installation (section lengths > 2 m)

Fit 1 bracket every 1.5 m of the busbar

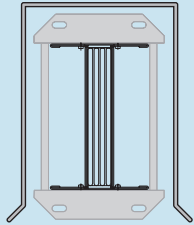
Every 2 anti-seismic brackets with bracket (Type B) use one bracket with bracket and spring (Type A)



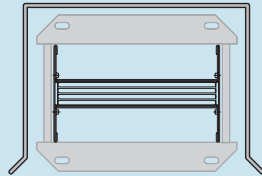
All dimensions (mm) are nominal

■ **Protective cover for outdoor applications**

Covering accessory to be used for outdoor installations and wherever the standard IP 55 protection is not adequate  
For more information, please contact us on +44 (0) 370 608 9020



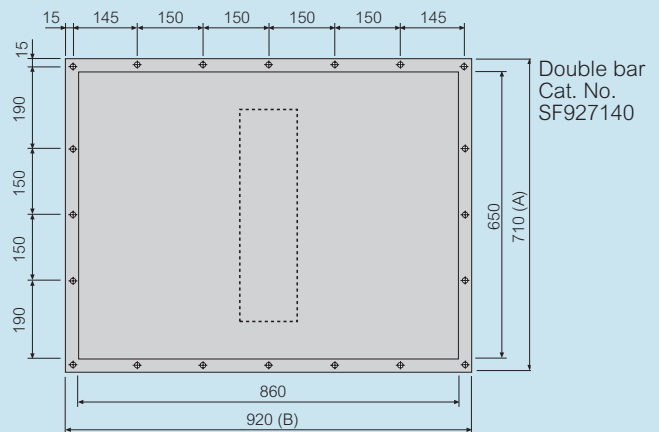
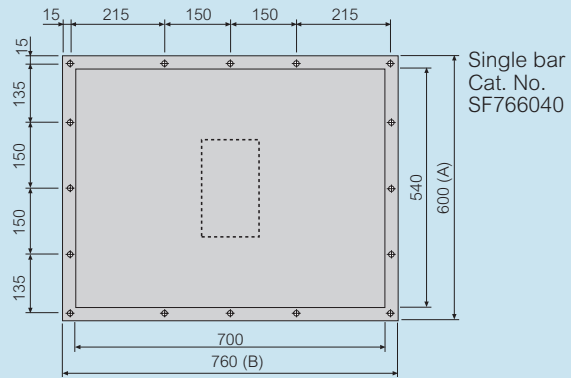
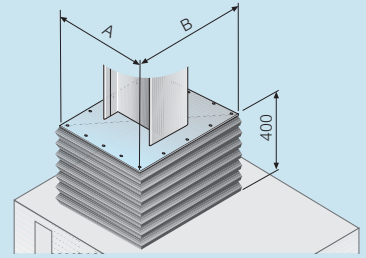
Edgewise length



Flat length

■ **Protective bellows**

Recommended for protection of the interface connection on panel boards, dry-type transformers with enclosure and oil-type transformers  
For Legrand cast resin transformers, custom-made connections are available upon request (see p. 83)



	Single bar	Double bar
Aluminium	630 A to 2000 A Cat. No. SF766040	2500 A to 4000 A Cat. No. SF927140
Copper	800 A to 2500 A Cat. No. SF766040	3200 A to 5000 A Cat. No. SF927140

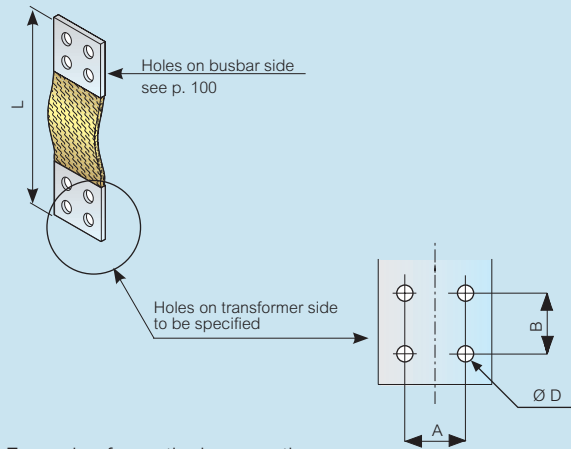
All dimensions (mm) are nominal

# SCP super compact busbar

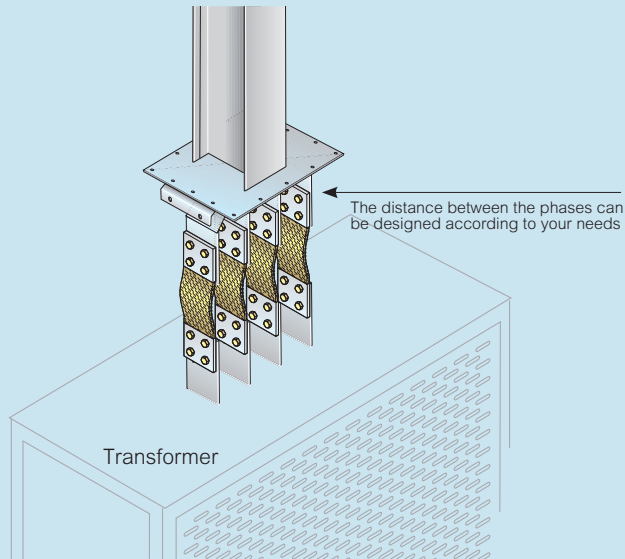
## technical information

### Flexible braid connections

When ordering, please specify hole dimensions on transformer side (A, B, Ø D) and length L



Example of a vertical connection



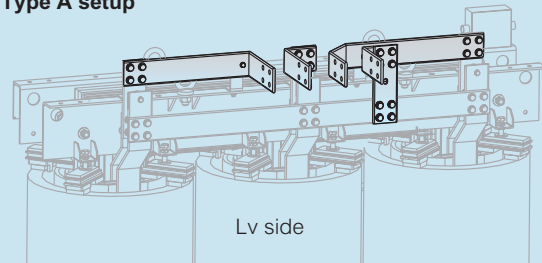
### The system : the Legrand transformer advantage

The Legrand Group offer meets the needs of any installation. Legrand cast resin transformers have specifically designed connections for Zucchini busbars

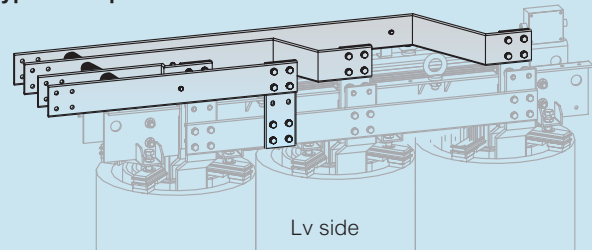
The versions shown represent some of the standardised solutions

For the outgoing busbar run from the transformer, see p. 98-100

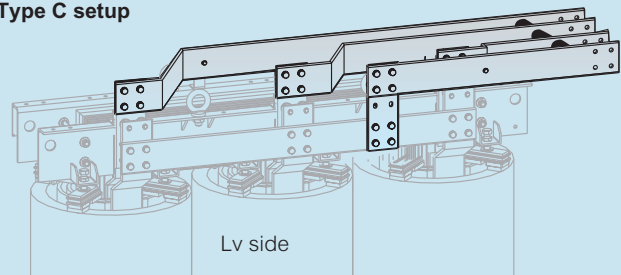
#### Type A setup



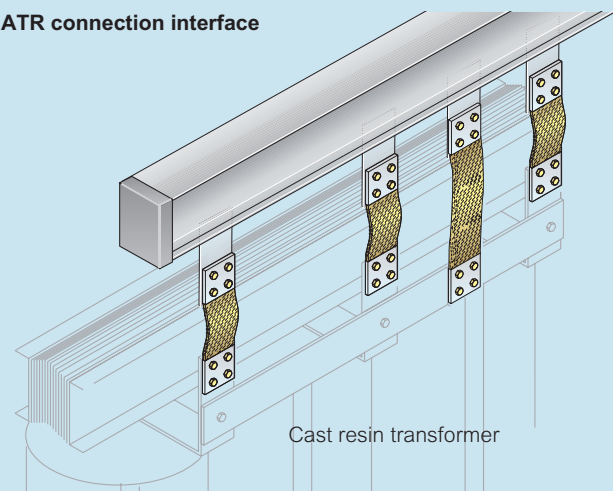
#### Type B setup



#### Type C setup



#### ATR connection interface



A technical drawing of the transformer is needed when creating an ATR connection interface

For Legrand cast resin transformers contact us on +44 (0) 370 608 9020

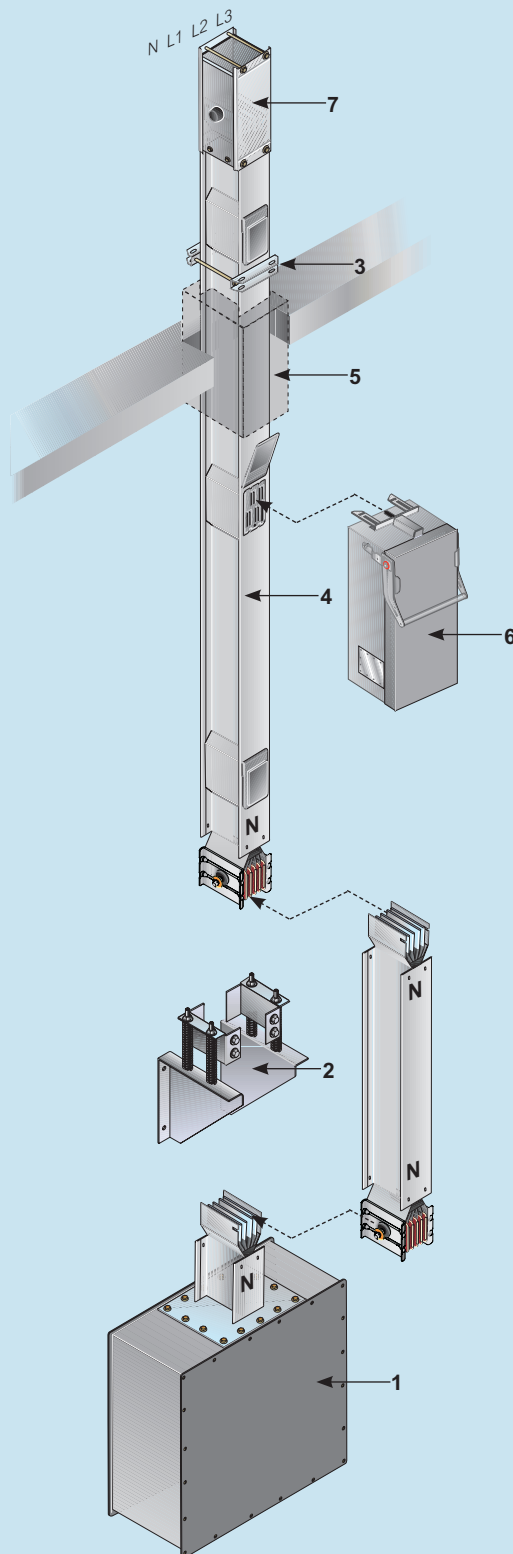
All dimensions (mm) are nominal

## SCP super compact busbar installation guidelines

### ■ Installation design

- 1 Use a right hand end feed unit (without monobloc)  
To position the tap-off boxes correctly, the neutral conductor of the riser mains must be on the left side of the length
- 2 Use one or more suspension brackets for the vertical lengths, according to the weight of the whole riser mains  
For risers that are shorter than 4 m, fix to the base with type B brackets (see p. 81)  
When longer, use a type A suspension bracket (see p. 81) every 300 kg of riser (including boxes)
- 3 Use a standard suspension bracket to hang the busbar every 2 metres of riser mains
- 4 Use lengths with tap-off outlets (see p. 66)
- 5 Use S120 fire barrier kit for each compartment floor (see p. 69)
- 6 Tap-off boxes can be installed in the tap-off outlets and near the connection between lengths  
In both cases, the boxes extend downward
- 7 Position the IP 55 end cover at the end of the riser mains

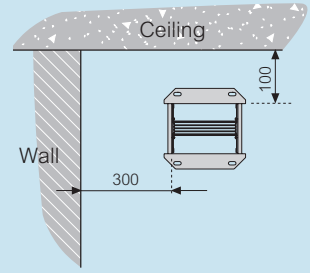
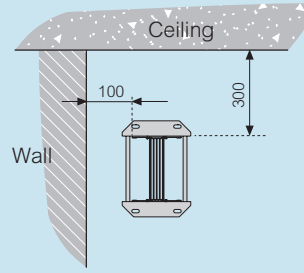
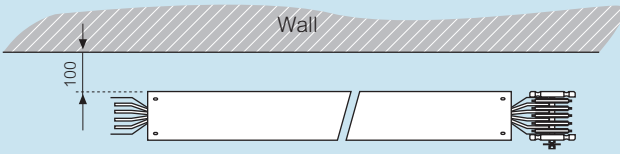
For further information,  
please contact us on +44 (0) 370 608 9020



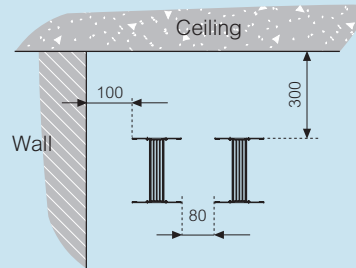
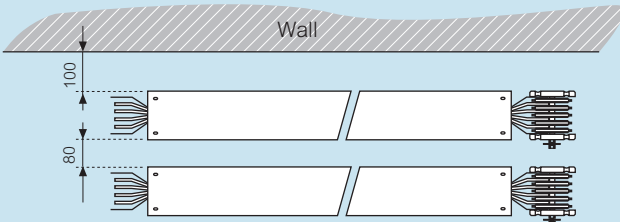
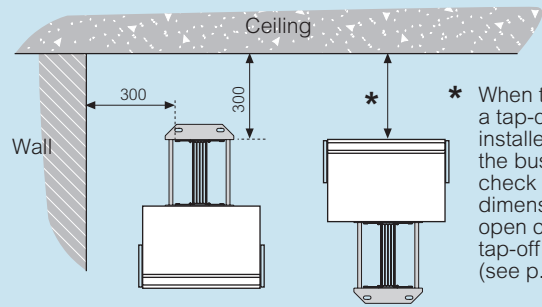
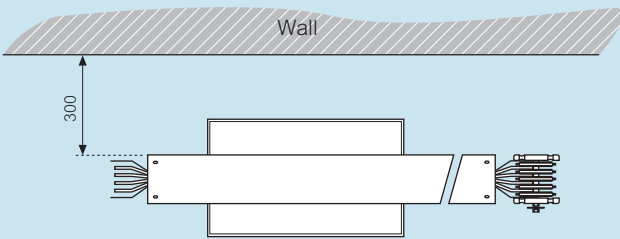
# SCP super compact busbar

## installation guidelines

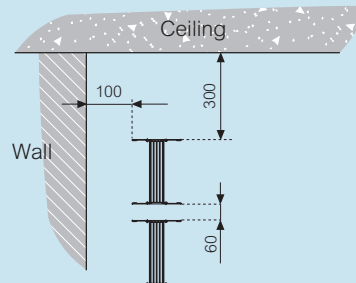
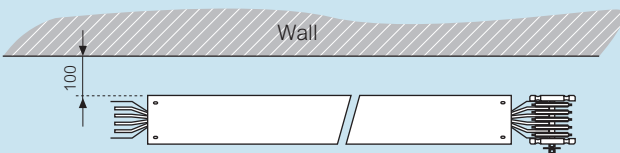
### ■ Minimum distance of the wall / ceiling lengths



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



Minimum installation distance when there are several adjacent lines



Minimum installation distance when there are several overlapped lines

For further information, please contact us on +44 (0) 370 608 9020

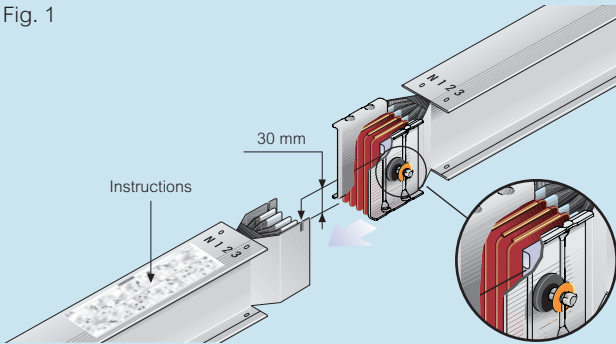
All dimensions (mm) are nominal



### ■ Installation sequence of the junction

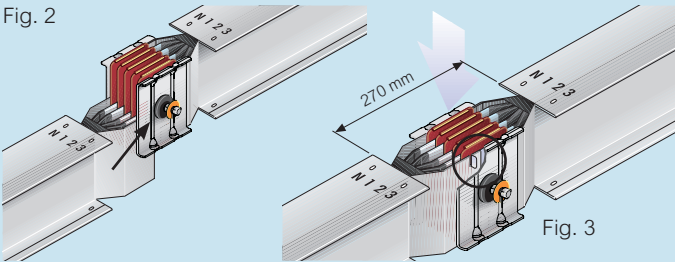
- 1 Installation instructions are included near the junction (Fig.1)  
Make sure that the contacts are clean before joining lengths

Fig. 1

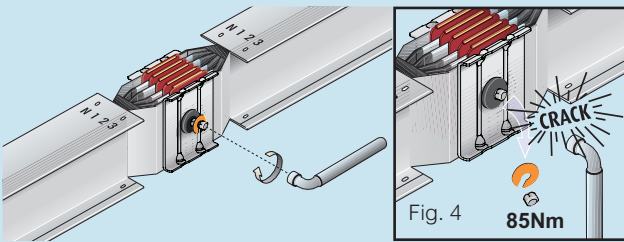


- 2 Make sure that the earth plate of the trunking length is inserted behind the front plate of the junction monobloc (Fig.2)  
The positioning pin on the monobloc should be fitted into the corresponding slot on the earth plate. Verify the distance between lengths, 270 mm, before tightening the monobloc completely (Fig.3)

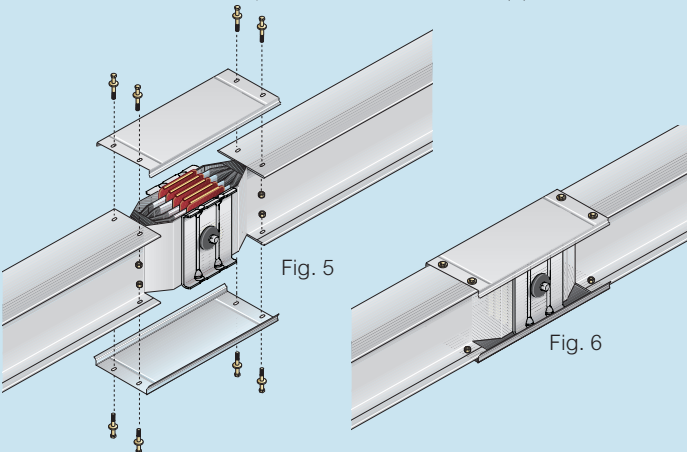
Fig. 2



- 3 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



- 4 Install the junction covers (Fig. 5)  
Completed IP 55 installation (Fig. 6)  
For further information, please contact us on +44 (0) 370 608 9020

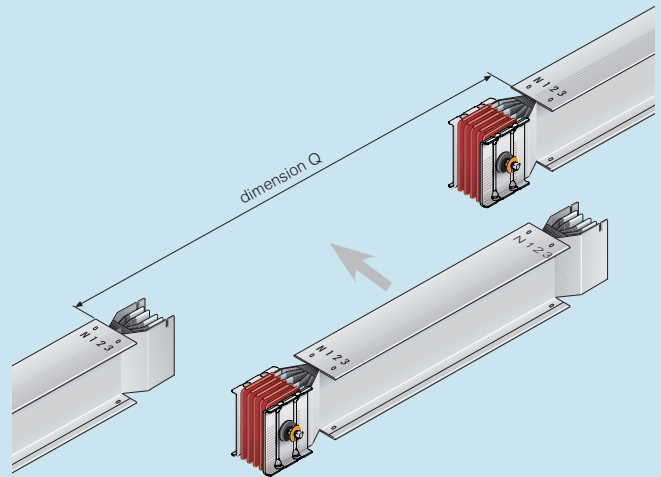


### ■ Measurement of trunking lengths

The exact length to be ordered can be determined by measuring the distance between the components (as shown below) and then subtracting 270 mm

$$\text{Length} = Q - 270 \text{ mm}$$

Example : dimension measured = 2500 mm  
length required = 2230 mm



### ■ Measurement of bespoke components

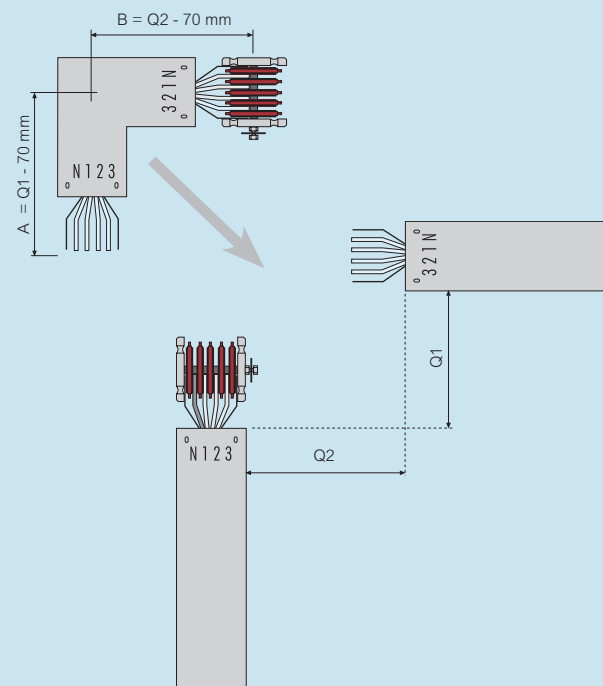
#### Horizontal elbow

The exact length to be ordered can be determined by measuring the dimensions Q1 and Q2 (as shown below) and then subtracting 70 mm from each dimension

$$A = Q1 - 70 \text{ mm}$$

$$B = Q2 - 70 \text{ mm}$$

For further information, please contact us on +44 (0) 370 608 9020

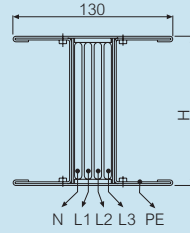


All dimensions (mm) are nominal

# SCP super compact busbar – 4 conductor (aluminium)

technical data

## 3L + N + PE aluminium



Aluminium		Single bar						Double bar			
		I <sub>n</sub> [A]	630	800	1000	1250	1600	2000	2500	3200	4000
Rated current	I <sub>n</sub> [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	U <sub>e</sub> [V]	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Insulation voltage	U <sub>i</sub> [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 <sub>cw</sub> [kA]rms	36	42	50	75	80	80	150	160	160	
Allowable peak current for three-phase fault	I <sub>pk</sub> [kA]	76	88	110	165	176	176	330	352	352	
Rated short-time current for single-phase fault (1 s)	I <sub>cw</sub> [kA]rms	22	25	30	45	48	48	90	96	96	
Allowable peak current for single-phase fault	I <sub>pk</sub> [kA]	48	55	66	99	106	106	198	211	211	
Allowable specific energy for three-phase fault	I <sup>2</sup> t [MA <sup>2</sup> s]	1296	1764	2500	5625	6400	6400	22500	25600	25600	
Phase resistance	R <sub>20</sub> [mΩ/m]	0-077	0-057	0-057	0-046	0-033	0-025	0-021	0-016	0-013	
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	0-059	0-059	0-048	0-036	0-027	0-022	0-017	0-014	
Phase resistance at thermal conditions	R <sub>t</sub> [mΩ/m]	0-084	0-063	0-068	0-055	0-039	0-030	0-024	0-019	0-016	
Phase impedance at thermal conditions	Z [mΩ/m]	0-087	0-066	0-070	0-057	0-041	0-032	0-025	0-020	0-018	
Neutral resistance	R <sub>20</sub> [mΩ/m]	0-077	0-057	0-057	0-046	0-033	0-025	0-021	0-016	0-013	
Resistance of the protective conductor (PE 1)	R <sub>PE</sub> [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 <sub>PE</sub> [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 <sub>PE</sub> [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 <sub>PE</sub> [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 <sub>0</sub> [mΩ/m]	0-209	0-188	0-193	0-180	0-152	0-131	0-099	0-088	0-081	
Resistance of the fault loop (PE 2)	R <sub>0</sub> [mΩ/m]	0-120	0-099	0-104	0-091	0-067	0-053	0-038	0-031	0-027	
Resistance of the fault loop (PE 3)	R <sub>0</sub> [mΩ/m]	0-134	0-113	0-118	0-105	0-080	0-063	0-045	0-037	0-033	
Reactance of the fault loop (50 Hz)	X <sub>0</sub> [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 <sub>0</sub> [mΩ/m]	0-233	0-211	0-215	0-191	0-161	0-137	0-103	0-091	0-084	
Impedance of the fault loop (PE 2)	Z <sub>0</sub> [mΩ/m]	0-158	0-137	0-141	0-111	0-085	0-066	0-046	0-038	0-035	
Impedance of the fault loop (PE 3)	Z <sub>0</sub> [mΩ/m]	0-169	0-148	0-152	0-123	0-096	0-074	0-052	0-043	0-040	
Zero-sequence resistance phase - N	R <sub>0</sub> [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 <sub>0</sub> [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 <sub>0</sub> [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 <sub>0</sub> [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 <sub>0</sub> [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 <sub>0</sub> [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 $\Delta V = k \cdot L \cdot I_e \cdot 10^{-6}$ [V]	k [V/m/A]10 <sup>-6</sup>	cosφ = 0-70	65-3	48-9	51-9	42-9	32-3	25-1	18-4	15-4	13-7
		cosφ = 0-75	67-9	50-9	54-1	44-6	33-4	25-9	19-2	16-0	14-1
		cosφ = 0-80	70-3	52-7	56-1	46-2	34-3	26-7	19-9	16-5	14-5
		cosφ = 0-85	72-5	54-4	58-0	47-7	35-1	27-3	20-6	16-9	14-9
		cosφ = 0-90	74-3	55-8	59-6	48-9	35-7	27-7	21-2	17-3	15-1
		cosφ = 0-95	75-5	56-7	60-8	49-7	35-9	27-8	21-6	17-5	15-2
	cosφ = 1-00	72-9	54-9	59-1	48-0	33-8	26-2	21-0	16-7	14-3	
Weight (PE 1)	p [kg/m]	17-3	17-0	17-0	18-7	20-3	30-7	43-7	52-3	62-7	
Weight (PE 2)	p [kg/m]	20-8	20-5	20-5	23-2	24-9	36-7	53-9	64-3	75-7	
Weight (PE 3)	p [kg/m]	18-4	18-1	18-1	20-8	21-8	32-6	46-9	56-1	66-8	
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 <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	
Joule effect losses at rated current	P [W/m]	100	122	205	260	300	363	455	592	790	
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 61439-6 (BS EN 61439-6)

**Suitable for the following climates :**

Constant humid climate (IEC 60068 2 – 11)

Cyclical humid climate (IEC 60068 2 – 30)

**Degree of protection :**

IP 55; IP x7 carrying lines available with accessories, on request - +44 (0) 370 608 9020

**Insulation and surface treatment of the conductors :**

Insulated conductors for the whole length, aluminum copper-plated and tin-plated

**Busbar casing material :**

1.5 mm galvanised steel plate, pre-painted or stainless steel

(available, if required, with special paint and/or with thickness 2 mm)

1 : Class F thermal resistance (155°C) available on request - +44 (0) 370 608 9020

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



PE 1  
Standard version



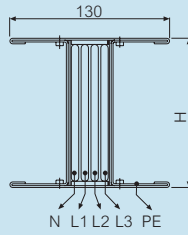
PE 2  
Extra earth - copper



PE 3  
Extra earth - aluminium

**SCP super compact busbar – 4 conductor (copper)**  
technical data

■ 3L + N + PE copper



Copper	Single bar							Double bar		
	In [A]	800	1000	1250	1600	2000	2500	3200	4000	5000
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 <sup>2</sup> s]	2025	2500	3600	7225	7744	7744	28900	30976	30976
Phase resistance	$R_{\phi 0}$ [mΩ/m]	0-039	0-030	0-030	0-022	0-018	0-014	0-011	0-009	0-007
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]	0-045	0-035	0-035	0-027	0-023	0-018	0-013	0-011	0-009
Phase resistance at thermal conditions	$R_t$ [mΩ/m]	0-042	0-035	0-037	0-027	0-022	0-017	0-013	0-011	0-008
Phase impedance at thermal conditions	Z [mΩ/m]	0-048	0-039	0-041	0-031	0-026	0-020	0-015	0-013	0-010
Neutral resistance	$R_{\phi 0}$ [mΩ/m]	0-039	0-030	0-030	0-022	0-018	0-014	0-011	0-009	0-007
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]	0-167	0-160	0-162	0-140	0-135	0-118	0-088	0-080	0-073
Resistance of the fault loop (PE 2)	$R_o$ [mΩ/m]	0-078	0-071	0-073	0-055	0-050	0-040	0-027	0-023	0-019
Resistance of the fault loop (PE 3)	$R_o$ [mΩ/m]	0-092	0-085	0-087	0-068	0-063	0-050	0-034	0-029	0-025
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]	0-184	0-175	0-177	0-152	0-147	0-126	0-093	0-083	0-077
Impedance of the fault loop (PE 2)	$Z_o$ [mΩ/m]	0-110	0-100	0-102	0-081	0-077	0-059	0-040	0-033	0-029
Impedance of the fault loop (PE 3)	$Z_o$ [mΩ/m]	0-120	0-110	0-112	0-090	0-086	0-066	0-045	0-037	0-034
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 $\Delta V = k.L.I_e.10^{-6}$ [V]	$\cos\phi = 0.70$	39.9	31.5	33.0	25.6	22.1	17.1	12.2	10.5	8.9
	$\cos\phi = 0.75$	40.7	32.2	33.9	26.1	22.4	17.4	12.4	10.8	8.9
	$\cos\phi = 0.80$	41.3	32.8	34.6	26.5	22.6	17.5	12.6	10.9	9.0
	$\cos\phi = 0.85$	41.7	33.3	35.1	26.7	22.7	17.5	12.8	11.0	9.0
	$\cos\phi = 0.90$	41.7	33.4	35.4	26.7	22.5	17.4	12.8	11.0	8.9
	$\cos\phi = 0.95$	41.1	33.1	35.1	26.2	22.0	17.0	12.6	10.9	8.6
	$\cos\phi = 1.00$	36.7	30.0	32.2	23.3	19.1	14.7	11.2	9.8	7.3
Weight (PE 1)	p [kg/m]	31.0	31.0	31.0	42.0	46.0	69.0	84.0	101.0	126.0
Weight (PE 2)	p [kg/m]	35.0	35.0	35.0	47.0	51.0	70.0	94.0	114.0	139.0
Weight (PE 3)	p [kg/m]	33.0	32.0	32.0	44.0	48.0	66.0	87.0	105.0	130.0
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 <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>
Joule effect losses at rated current	P [W/m]	81	104	174	207	265	319	399	541	636
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 61439-6 (BS EN 61439-6)

**Suitable for the following climates :**

Constant humid climate (IEC 60068 2 – 11)

Cyclical humid climate (IEC 60068 2 – 30)

**Degree of protection :**

IP 55; IP x7 carrying lines available with accessories, on request - +44 (0) 370 608 9020

**Insulation and surface treatment of the conductors :**

Insulated conductors for the whole length, aluminum copper-plated and tin-plated

**Busbar casing material :**

1.5 mm galvanised steel plate, pre-painted or stainless steel

(available, if required, with special paint and/or with thickness 2 mm)

1 : Class F thermal resistance (155°C) available on request -  
+44 (0) 370 608 9020

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



PE 1  
Standard version



PE 2  
Extra earth - copper

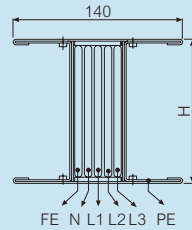


PE 3  
Extra earth - aluminium

## SCP super compact busbar – 5 conductor (aluminium)

technical data

■ SCP technical data functional earth  
clean earth / low noise SCP5C (3L + N + PE + FE)  
aluminium



Aluminium		Single bar						Double bar		
		$I_n$ [A]	630	800	1000	1250	1600	2000	2500	3200
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 <sup>2</sup> s]	1296	1764	2500	5625	6400	6400	22500	25600	25600
Phase resistance	$R_{20}$ [mΩ/m]	0.077	0.057	0.057	0.046	0.033	0.025	0.021	0.016	0.013
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	0.059	0.059	0.048	0.036	0.027	0.022	0.017	0.014
Phase resistance at thermal conditions	$R_t$ [mΩ/m]	0.084	0.063	0.068	0.055	0.039	0.030	0.024	0.019	0.016
Phase impedance at thermal conditions	Z [mΩ/m]	0.087	0.066	0.070	0.057	0.041	0.032	0.025	0.020	0.018
Neutral resistance	$R_{20}$ [mΩ/m]	0.077	0.057	0.057	0.046	0.033	0.025	0.021	0.016	0.013
Functional earthing resistance (FE)	$R_{20}$ [mΩ/m]	0.077	0.057	0.057	0.046	0.033	0.025	0.021	0.016	0.013
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	0.102	0.107	0.089	0.064	0.050	0.041	0.032	0.027
Resistance of the fault loop (PE 2)	$R_0$ [mΩ/m]	0.108	0.085	0.090	0.075	0.054	0.042	0.033	0.026	0.022
Resistance of the fault loop (PE 3)	$R_0$ [mΩ/m]	0.115	0.090	0.095	0.079	0.057	0.044	0.034	0.028	0.024
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	0.139	0.143	0.109	0.083	0.064	0.048	0.038	0.035
Impedance of the fault loop (PE 2)	$Z_0$ [mΩ/m]	0.149	0.128	0.131	0.098	0.076	0.057	0.042	0.034	0.031
Impedance of the fault loop (PE 3)	$Z_0$ [mΩ/m]	0.154	0.131	0.134	0.101	0.078	0.059	0.043	0.035	0.032
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 $\Delta V = k.L.I.e.10^{-6}$ [V]	$k$ [V/m/A]10 <sup>-6</sup>									
	$\cos\phi = 0.70$	65.3	48.9	51.9	42.9	32.3	25.1	18.4	15.4	13.7
	$\cos\phi = 0.75$	67.9	50.9	54.1	44.6	33.4	25.9	19.2	16.0	14.1
	$\cos\phi = 0.80$	70.3	52.7	56.1	46.2	34.3	26.7	19.9	16.5	14.5
	$\cos\phi = 0.85$	72.5	54.4	58.0	47.7	35.1	27.3	20.6	16.9	14.9
	$\cos\phi = 0.90$	74.3	55.8	59.6	48.9	35.7	27.7	21.2	17.3	15.1
$\cos\phi = 0.95$	75.5	56.7	60.8	49.7	35.9	27.8	21.6	17.5	15.2	
$\cos\phi = 1.00$	72.9	54.9	59.1	48.0	33.8	26.2	21.0	16.7	14.3	
Weight (PE 1)	$p$ [kg/m]	21.6	21.3	21.3	23.4	25.4	38.4	54.6	65.4	78.4
Weight (PE 2)	$p$ [kg/m]	23.0	22.8	22.8	26.4	28.6	41.4	60.1	72.1	84.9
Weight (PE 3)	$p$ [kg/m]	20.6	20.4	20.4	24.0	25.5	37.4	53.1	64.0	76.0
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 <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>
Joule effect losses at rated current	P [W/m]	100	122	205	260	300	363	455	592	790
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 61439-6 (BS EN 61439-6)

Suitable for the following climates :

Constant humid climate (IEC 60068 2 - 11)

Cyclical humid climate (IEC 60068 2 - 30)

Degree of protection :

IP 55; IP x7 carrying lines available with accessories, on request - +44 (0) 370 608 9020

Insulation and surface treatment of the conductors :

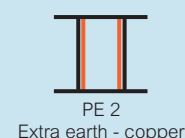
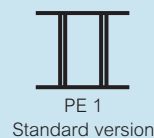
Insulated conductors for the whole length, aluminum copper-plated and tin-plated

Busbar casing material :

1.5 mm galvanised steel plate, pre-painted or stainless steel (available, if required, with special paint and/or with thickness 2 mm)

1 : Class F thermal resistance (155°C) available on request - +44 (0) 370 608 9020

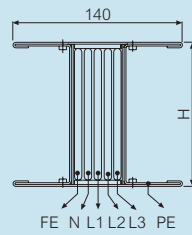
$I_n$  : rated current referred to a room temperature of 40°C



**SCP super compact busbar – 5 conductor (copper)**

technical data

■ SCP technical data functional earth  
clean earth / low noise SCP5C (3L + N + PE + FE)  
copper



Copper	Single bar							Double bar		
	$I_n$ [A]	800	1 000	1 250	1 600	2 000	2 500	3 200	4 000	5 000
Rated current	$I_n$ [A]	800	1 000	1 250	1 600	2 000	2 500	3 200	4 000	5 000
Casing overall dimensions	L x H [mm]	140x130	140x130	140x130	140x170	140x170	140x220	140x380	140x440	140x480
Operating voltage	$U_e$ [V]	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
Insulation voltage	$U_i$ [V]	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
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]	0-039	0-030	0-030	0-022	0-018	0-014	0-011	0-009	0-007
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]	0-045	0-035	0-035	0-027	0-023	0-018	0-013	0-011	0-009
Phase resistance at thermal conditions	$R_t$ [mΩ/m]	0-042	0-035	0-037	0-027	0-022	0-017	0-013	0-011	0-008
Phase impedance at thermal conditions	Z [mΩ/m]	0-048	0-039	0-041	0-031	0-026	0-020	0-015	0-013	0-010
Neutral resistance	$R_{20}$ [mΩ/m]	0-039	0-030	0-030	0-022	0-018	0-014	0-011	0-009	0-007
Functional earthing resistance (FE)	$R_{20}$ [mΩ/m]	0-039	0-030	0-030	0-022	0-018	0-014	0-011	0-009	0-007
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]	0-072	0-059	0-062	0-045	0-038	0-029	0-023	0-019	0-015
Resistance of the fault loop (PE 2)	$R_o$ [mΩ/m]	0-061	0-051	0-054	0-039	0-033	0-026	0-019	0-016	0-013
Resistance of the fault loop (PE 3)	$R_o$ [mΩ/m]	0-064	0-054	0-056	0-041	0-035	0-027	0-020	0-017	0-013
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]	0-105	0-092	0-094	0-074	0-069	0-052	0-037	0-030	0-026
Impedance of the fault loop (PE 2)	$Z_o$ [mΩ/m]	0-098	0-087	0-089	0-071	0-067	0-050	0-035	0-028	0-025
Impedance of the fault loop (PE 3)	$Z_o$ [mΩ/m]	0-100	0-089	0-090	0-072	0-068	0-051	0-035	0-029	0-026
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 $\Delta V = k.L.I.e.10^{-6}$ [V]	$k$ [V/m/A]10 <sup>-6</sup>									
	$\cos\phi = 0-70$	39-9	31-5	33-0	25-6	22-1	17-1	12-2	10-5	8-9
	$\cos\phi = 0-75$	40-7	32-2	33-9	26-1	22-4	17-4	12-4	10-8	8-9
	$\cos\phi = 0-80$	41-3	32-8	34-6	26-5	22-6	17-5	12-6	10-9	9-0
	$\cos\phi = 0-85$	41-7	33-3	35-1	26-7	22-7	17-5	12-8	11-0	9-0
	$\cos\phi = 0-90$	41-7	33-4	35-4	26-7	22-5	17-4	12-8	11-0	8-9
$\cos\phi = 0-95$	41-1	33-1	35-1	26-2	22-0	17-0	12-6	10-9	8-6	
$\cos\phi = 1-00$	36-7	30-0	32-2	23-3	19-1	14-7	11-2	9-8	7-3	
Weight (PE 1)	$p$ [kg/m]	39-0	39-0	39-0	53-0	58-0	86-0	105-0	126-0	158-0
Weight (PE 2)	$p$ [kg/m]	41-0	41-0	41-0	55-0	60-0	83-0	111-0	134-0	174-0
Weight (PE 3)	$p$ [kg/m]	38-0	38-0	38-0	52-0	57-0	79-0	104-0	126-0	163-0
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 <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>
Joule effect losses at rated current	P [W/m]	81	104	174	207	265	319	399	541	636
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 61439-6 (BS EN 61439-6)

**Suitable for the following climates :**

Constant humid climate (IEC 60068 2 – 11)

Cyclical humid climate (IEC 60068 2 – 30)

**Degree of protection :**

IP 55; IP x7 carrying lines available with accessories, on request - +44 (0) 370 608 9020

**Insulation and surface treatment of the conductors :**

Insulated conductors for the whole length, aluminum copper-plated and tin-plated

**Busbar casing material :**1.5 mm galvanised steel plate, pre-painted or stainless steel  
(available, if required, with special paint and/or with thickness 2 mm)

1 : Class F thermal resistance (155°C) available on request -

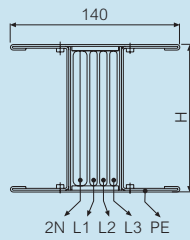
+44 (0) 370 608 9020

 $I_n$  : rated current referred to a room temperature of 40°CPE 1  
Standard versionPE 2  
Extra earth - copperPE 3  
Extra earth - aluminium

# SCP super compact busbar – double neutral (aluminium)

## technical data

### Double neutral SCP2N (3L + 2N + PE) aluminium



Aluminium	Single bar							Double bar		
Rated current	$I_n$ [A]	630	800	1000	1250	1600	2000	2500	3200	4000
Casing overall dimensions	$L \times H$ [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 <sup>2</sup> s]	1296	1764	2500	5625	6400	6400	22500	25600	25600
Phase resistance	$R_{20}$ [mΩ/m]	0.077	0.057	0.057	0.046	0.033	0.025	0.021	0.016	0.013
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	0.059	0.059	0.048	0.036	0.027	0.022	0.017	0.014
Phase resistance at thermal conditions	$R_t$ [mΩ/m]	0.084	0.063	0.068	0.055	0.039	0.030	0.024	0.019	0.016
Phase impedance at thermal conditions	$Z$ [mΩ/m]	0.087	0.066	0.070	0.057	0.041	0.032	0.025	0.020	0.018
Neutral resistance	$R_{20}$ [mΩ/m]	0.039	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	0.184	0.189	0.176	0.149	0.128	0.098	0.087	0.080
Resistance of the fault loop (PE 2)	$R_o$ [mΩ/m]	0.119	0.098	0.103	0.090	0.067	0.053	0.038	0.031	0.027
Resistance of the fault loop (PE 3)	$R_o$ [mΩ/m]	0.134	0.113	0.118	0.105	0.079	0.063	0.044	0.037	0.033
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]	0.230	0.207	0.212	0.187	0.158	0.134	0.102	0.090	0.083
Impedance of the fault loop (PE 2)	$Z_o$ [mΩ/m]	0.158	0.137	0.140	0.110	0.085	0.066	0.046	0.038	0.035
Impedance of the fault loop (PE 3)	$Z_o$ [mΩ/m]	0.169	0.148	0.152	0.123	0.095	0.074	0.051	0.043	0.040
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 $\Delta V = k.L.I.e.10^{-6}$ [V] $k$ [V/m/A]10 <sup>-6</sup>	$\cos\phi = 0.70$	65.3	48.9	51.9	42.9	32.3	25.1	18.4	15.4	13.7
	$\cos\phi = 0.75$	67.9	50.9	54.1	44.6	33.4	25.9	19.2	16.0	14.1
	$\cos\phi = 0.80$	70.3	52.7	56.1	46.2	34.3	26.7	19.9	16.5	14.5
	$\cos\phi = 0.85$	72.5	54.4	58.0	47.7	35.1	27.3	20.6	16.9	14.9
	$\cos\phi = 0.90$	74.3	55.8	59.6	48.9	35.7	27.7	21.2	17.3	15.1
	$\cos\phi = 0.95$	75.5	56.7	60.8	49.7	35.9	27.8	21.6	17.5	15.2
$\cos\phi = 1.00$	72.9	54.9	59.1	48.0	33.8	26.2	21.0	16.7	14.3	
Weight (PE 1)	$p$ [kg/m]	21.6	21.3	21.3	23.4	25.4	38.4	54.6	65.4	78.4
Weight (PE 2)	$p$ [kg/m]	23.0	22.8	22.8	26.4	28.6	41.4	60.1	72.1	84.9
Weight (PE 3)	$p$ [kg/m]	20.6	20.4	20.4	24.0	25.5	37.4	53.1	64.0	76.0
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 <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>
Joule effect losses at rated current	$P$ [W/m]	100	122	205	260	300	363	455	592	790
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 61439-6 (BS EN 61439-6)

#### Suitable for the following climates :

Constant humid climate (IEC 60068 2 – 11)

Cyclical humid climate (IEC 60068 2 – 30)

#### Degree of protection :

IP 55; IP x7 carrying lines available with accessories, on request - +44 (0) 370 608 9020

#### Insulation and surface treatment of the conductors :

Insulated conductors for the whole length, aluminum copper-plated and tin-plated

#### Busbar casing material :

1.5 mm galvanised steel plate, pre-painted or stainless steel  
(available, if required, with special paint and/or with thickness 2 mm)

1 : Class F thermal resistance (155°C) available on request -  
+44 (0) 370 608 9020

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



PE 1  
Standard version



PE 2  
Extra earth - copper

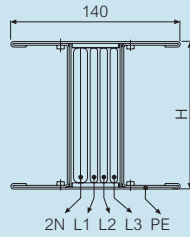


PE 3  
Extra earth - aluminium

SCP super compact busbar – double neutral (copper)

technical data

■ Double neutral SCP2N (3L + 2N + PE) copper



Copper	Single bar							Double bar		
	$I_n$ [A]	800	1 000	1 250	1 600	2 000	2 500	3 200	4 000	5 000
Rated current	$I_n$ [A]	800	1 000	1 250	1 600	2 000	2 500	3 200	4 000	5 000
Casing overall dimensions	$L \times H$ [mm]	140x130	140x130	140x130	140x170	140x170	140x220	140x380	140x440	140x480
Operating voltage	$U_e$ [V]	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
Insulation voltage	$U_i$ [V]	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
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 <sup>2</sup> s]	2 025	2 500	3 600	7 225	7 744	7 744	28 900	30 976	30 976
Phase resistance	$R_{20}$ [mΩ/m]	0.039	0.030	0.030	0.022	0.018	0.014	0.011	0.009	0.007
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]	0.045	0.035	0.035	0.027	0.023	0.018	0.013	0.011	0.009
Phase resistance at thermal conditions	$R_t$ [mΩ/m]	0.042	0.035	0.037	0.027	0.022	0.017	0.013	0.011	0.008
Phase impedance at thermal conditions	$Z$ [mΩ/m]	0.048	0.039	0.041	0.031	0.026	0.020	0.015	0.013	0.010
Neutral resistance	$R_{20}$ [mΩ/m]	0.020	0.015	0.015	0.011	0.009	0.007	0.006	0.005	0.003
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]	0.167	0.160	0.162	0.140	0.135	0.118	0.088	0.080	0.073
Resistance of the fault loop (PE 2)	$R_o$ [mΩ/m]	0.078	0.071	0.073	0.055	0.050	0.040	0.027	0.023	0.019
Resistance of the fault loop (PE 3)	$R_o$ [mΩ/m]	0.092	0.085	0.087	0.068	0.063	0.050	0.034	0.029	0.025
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]	0.184	0.175	0.177	0.152	0.147	0.126	0.093	0.083	0.077
Impedance of the fault loop (PE 2)	$Z_o$ [mΩ/m]	0.110	0.100	0.102	0.081	0.077	0.059	0.040	0.033	0.029
Impedance of the fault loop (PE 3)	$Z_o$ [mΩ/m]	0.120	0.110	0.112	0.090	0.086	0.066	0.045	0.037	0.034
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]	0.224	0.197	0.197	0.187	0.173	0.154	0.118	0.100	0.086
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 $\Delta V = k.L.I_e.10^{-6}$ [V] $k$ [V/m/A]10 <sup>-6</sup>	$\cos\varphi = 0.70$	39.9	31.5	33.0	25.6	22.1	17.1	12.2	10.5	8.9
	$\cos\varphi = 0.75$	40.7	32.2	33.9	26.1	22.4	17.4	12.4	10.8	8.9
	$\cos\varphi = 0.80$	41.3	32.8	34.6	26.5	22.6	17.5	12.6	10.9	9.0
	$\cos\varphi = 0.85$	41.7	33.3	35.1	26.7	22.7	17.5	12.8	11.0	9.0
	$\cos\varphi = 0.90$	41.7	33.4	35.4	26.7	22.5	17.4	12.8	11.0	8.9
	$\cos\varphi = 0.95$	41.1	33.1	35.1	26.2	22.0	17.0	12.6	10.9	8.6
$\cos\varphi = 1.00$	36.7	30.0	32.2	23.3	19.1	14.7	11.2	9.8	7.3	
Weight (PE 1)	$p$ [kg/m]	39.0	39.0	39.0	53.0	58.0	86.0	105.0	126.0	158.0
Weight (PE 2)	$p$ [kg/m]	41.0	41.0	41.0	55.0	60.0	83.0	111.0	134.0	174.0
Weight (PE 3)	$p$ [kg/m]	38.0	38.0	38.0	52.0	57.0	79.0	104.0	126.0	163.0
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 <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>	B/F <sup>1</sup>
Joule effect losses at rated current	$P$ [W/m]	81	104	174	207	265	319	399	541	636
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 61439-6 (BS EN 61439-6)

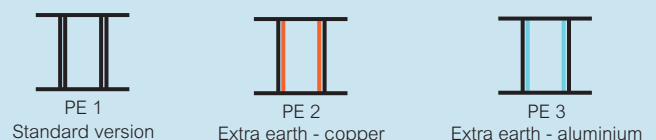
Suitable for the following climates :  
Constant humid climate (IEC 60068 2 – 11)  
Cyclical humid climate (IEC 60068 2 – 30)

Degree of protection :  
IP 55; IP x7 carrying lines available with accessories, on request - +44 (0) 370 608 9020

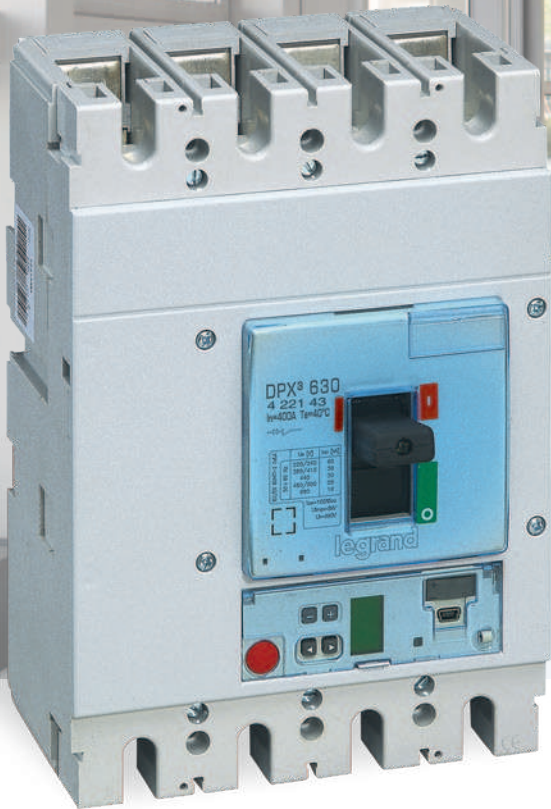
Insulation and surface treatment of the conductors :  
Insulated conductors for the whole length, aluminum copper-plated and tin-plated  
Busbar casing material :  
1.5 mm galvanised steel plate, pre-painted or stainless steel  
(available, if required, with special paint and/or with thickness 2 mm)

1 : Class F thermal resistance (155°C) available on request -  
+44 (0) 370 608 9020

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



EXTENSIVE RANGE, HIGH  
PERFORMANCE AND SAFETY

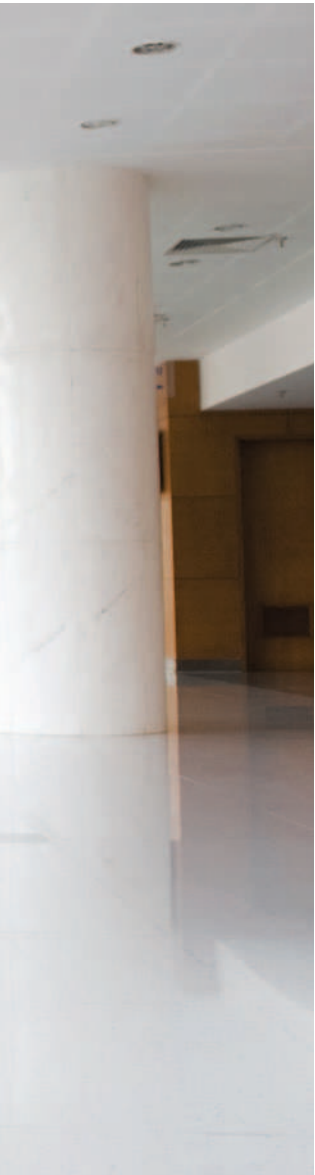
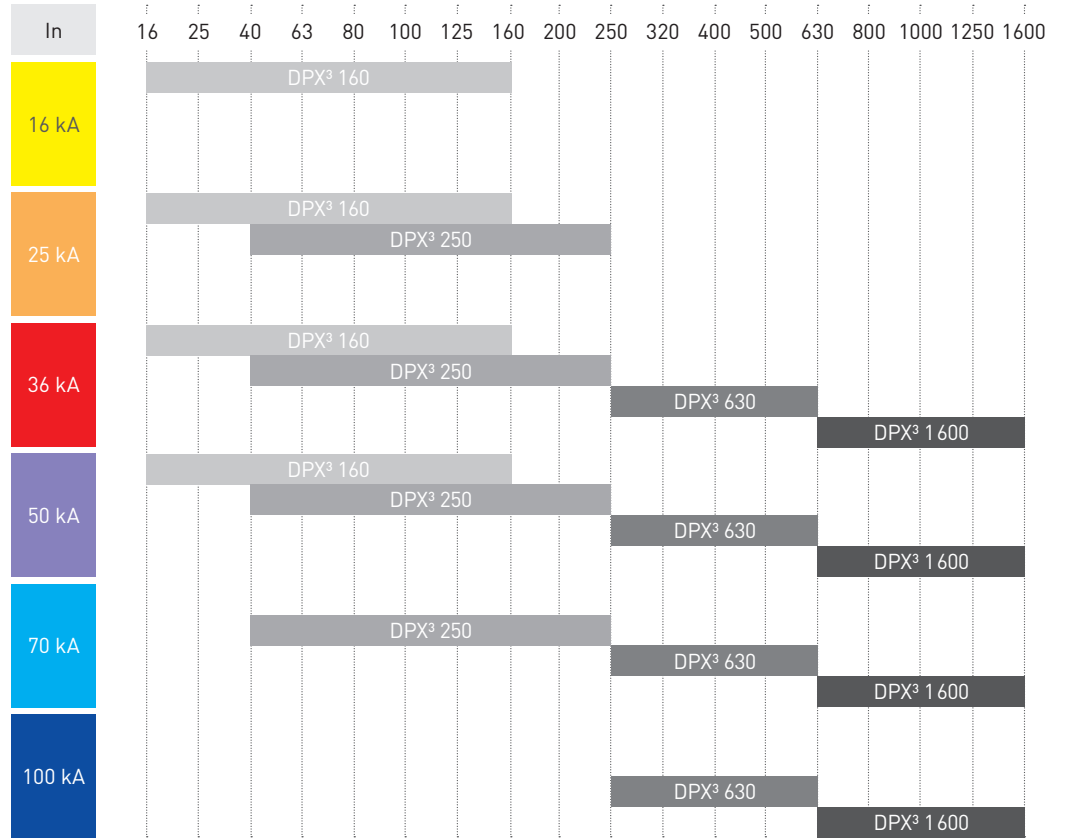


DPX<sup>3</sup> MCCBs

A comprehensive range  
for all your requirements  
from 16 to 1600 A



The DPX<sup>3</sup> range features four sizes of moulded case circuit breakers with breaking capacities ranging from 16 to 100 kA.



DPX<sup>3</sup> 160  
Mounting on rail  
or plate



DPX<sup>3</sup> 250  
Mounting on rail  
or plate



DPX<sup>3</sup> 630  
Mounting on plate



DPX<sup>3</sup> 1600  
Mounting on plate

Easy identification  
of the breaking capacity  
by the coloured tab:



16 kA



25 kA



36 kA



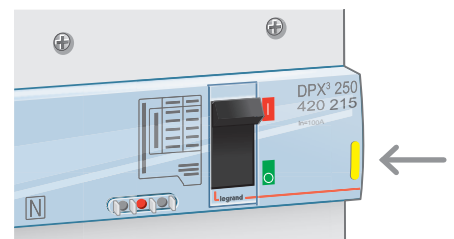
50 kA







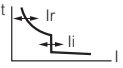
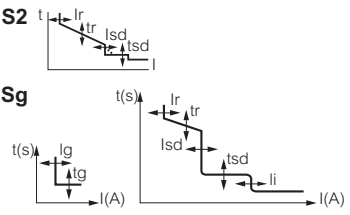


70 kA



100 kA







																
DEVICES	DPX <sup>3</sup> 160 thermal magnetic				DPX <sup>3</sup> 250 thermal magnetic				DPX <sup>3</sup> 250 electronic release							
Mounting	On rail  or on plate				On rail  or on plate				On rail  or on plate							
Breaking capacity (kA) (EN 60947-2 and IEC 60947-2)	16 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	70 kA	25 kA	36 kA	50 kA	70 kA				
380/415 V~	16	25	36	50	25	36	50	70	25	36	50	70				
220/240 V~	25	35	50	65	40	60	100	100	40	60	100	100				
Breaking capacity (% Icu)	100	100	100	100	100	100	100	100	100	100	100	100				
Characteristic of use																
Nominal frequency	50/60 Hz															
Maximum rated operating voltage Ue	690 V (500 V with integrated e.l.c.bs)				690 V (500 V with integrated e.l.c.bs)				690 V (500 V with integrated e.l.c.bs)							
Category of use	A				A				A							
Thermal magnetic adjustment																
	<b>Thermal</b> 0.8 to 1 I <sub>n</sub>				<b>Thermal</b> 0.8 to 1 I <sub>n</sub>				<b>Thermal</b> -							
	<b>Magnetic</b> 10 I <sub>n</sub> (400 A for 16 A and 25 A sizes)				<b>Magnetic</b> 5 to 10 I <sub>n</sub>				<b>Magnetic</b> -							
Electronic protection adjustment																
	-				-				I <sub>r</sub> : 0.4 to 1 I <sub>n</sub> I <sub>sd</sub> : 1.5 to 10 I <sub>r</sub>							
Maximum cable cross-section																
	Standard version				High capacity											
Rigid cable	95 mm <sup>2</sup>				150 mm <sup>2</sup>				150 mm <sup>2</sup>							
Flexible cable	70 mm <sup>2</sup>				120 mm <sup>2</sup>				120 mm <sup>2</sup>							
Copper bar and lug width	14 mm				18 mm				28.5 mm <sup>(1)</sup>							
Tightening torque	8 Nm				8 Nm				10 Nm							
Nominal current (I <sub>n</sub> ) at 40 °C (A)																
I <sub>n</sub> (A)	16	25	40	63	80	100	125	160	100	160	200	250	40	100	160	250
Phase	16	25	40	63	80	100	125	160	100	160	200	250	40	100	160	250
N	16	25	40	63	80	100	125	160	100	160	200	250	0 - 50 -100 % of phase value <sup>3</sup>			
N/2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnetic threshold (I <sub>m</sub> ) (A) <sup>2</sup> of DPX <sup>3</sup> thermal magnetic																
	Fixed				Adjustable				Adjustable							
I <sub>n</sub> (A)	16	25	40	63	80	100	125	160	100	160	200	250	-			
Phase	400	400	400	630	800	1000	1250	1600	125-250	200-400	315-630	500-1000	-			
N	400	400	400	630	800	1000	1250	1600	125-250	200-400	315-630	500-1000	-			
N/2	-	-	-	-	-	-	-	-	-	-	-	-	-			
Endurance (cycles)																
Electrical	8000				8000				8000							
Mechanical	25000				20000				20000							
Electronic earth leakage module																
Type	without or integrated				without or integrated				without or integrated							

1: Copper bars only

2: Trip current for 50/60 Hz. For direct current, multiply by 1.5

3: For maximum values related to I<sub>n</sub> phase limit

																				
<b>DPX³ 630 thermal magnetic</b>					<b>DPX³ 630 electronic release</b>					<b>DPX³ 1600 thermal magnetic</b>					<b>DPX³ 1600 electronic release</b>					
On plate					On plate					On plate					On plate					
36 kA	50 kA	70 kA	100 kA		36 kA	50 kA	70 kA	100 kA		36 kA	50 kA	70 kA	100 kA		36 kA	50 kA	70 kA	100 kA		
36	50	70	100		36	50	70	100		36	50	70	100		36	50	70	100		
70	100	120	170		70	100	120	170		70	100	120	170		70	100	120	170		
100	100	100	100		100	100	100	100		100	100	100	100		100	100	100	100		
50/60 Hz																				
690 V~					690 V~					690 V~					690 V~					
A					A: In 630 A - B: In 200 to 400 A					A					B					
0.8 to 1 In					-					0.8 to 1 In					-					
5 to 10 In					-					5 to 10 In					-					
					S2					Sg										
					Ir = 0.4 - 1 x In					-					Ir = 0.4 - 1 x In					
					tr = 3-30 s					-					tr = 3-30 s					
					I <sub>sd</sub> = 1.5 - 10 I <sub>r</sub>					-					I <sub>sd</sub> = 1.5 - 10 I <sub>r</sub>					
					tsd (I=K) = 0-500 ms					-					tsd (I=K) = 0-500 ms					
					tsd (I²t=K) = 0-500 ms					-					tsd (I²t=K) = 0-500 ms					
					I <sub>g</sub> = 0.2 - 1 x In					-					I <sub>g</sub> = 0.2 - 1 x In					
					I <sub>g</sub> = 0.1 - 1 s					-					I <sub>g</sub> = 0.1 - 1 s					
300 mm² or 2 x 240 mm²					300 mm² or 2 x 240 mm²					2 or 4 x 240 mm²					2 or 4 x 240 mm²					
240 mm² or 2 x 185 mm²					240 mm² or 2 x 185 mm²					2 or 4 x 185 mm²					2 or 4 x 185 mm²					
32 mm					32 mm					50 mm					50 mm					
15 Nm										20 Nm										
250	320	400	500	630	250	320	400	500	630	500	630	800	1000	1250	500	630	800	1000	1250	1600
250	320	400	500	630	250	320	400	500	630	500	630	800	1000	1250	500	630	800	1000	1250	1600
250	320	400	500	630	0 - 50 - 100 % of phase value <sup>3</sup>					500	630	800	1000	1250	0 - 50 - 100 % of phase value <sup>3</sup>					
-	250	250	250	320	-					-	-	-	500	630	-					
<b>Adjustable</b>																				
250	320	400	500	630	-					500	630	800	1000	1250	-					
1250-2500	1600-3200	2000-4000	2500-5000	3150-6300	-					2500-5000	3150-6300	4000-8000	5000-10000	6250-12500	-					
1250-2500	1600-3200	2000-4000	2500-5000	3150-6300	-					2500-5000	3150-6300	4000-8000	5000-10000	6250-12500	-					
-	1000-2000	1250-2500	1600-2500	2000-4000	-					-	-	-	2500-5000	3150-5000	-					
5000					5000					4000					4000					
10000					20000					10000					10000					
downstream e.l.c.bs.					downstream e.l.c.bs.					-					-					

## Technical characteristics (at 40°)

MCCBs	DPX <sup>3</sup> 160 thermal magnetic				DPX <sup>3</sup> 160 with electronic earth leakage module				
	16 kA	25 kA	36 kA	50 kA	16 kA	25 kA	36 kA	50 kA	
Nominal current I <sub>n</sub> (A)	16-25-40-63-80-100-125-160								
Rated insulation voltage (V)	50-60Hz				600				
Rated operational voltage (V)	50-60Hz				500				
	Continuous				500				
Rated impulse withstand current U <sub>imp</sub> (kV)	8								
Category of use	A								
Ultimate breaking capacity (kA) in AC	220/240 V~	25	35	50	65	25	35	50	65
	380/415 V~	16	25	36	50	16	25	36	50
	440 V~	10	18	25	30	10	18	25	30
	480/500 V~	8	10	12	15	8	10	12	15
	690 V~	5	5	8	10	5	5	8	10
Ultimate breaking capacity (kA) in DC	125 V <sub>==</sub> <sup>(1)</sup>	32	50	60	80	32	50	60	80
	250 V <sub>==</sub> <sup>(1)</sup>	16	25	30	40	16	25	30	40
	400 V <sub>==</sub> <sup>(2)</sup>	16	25	30	40	16	25	30	40
	500 V <sub>==</sub> <sup>(2)</sup>	10	20	25	35	10	20	25	35
	Standard breaking capacity I <sub>cs</sub> (% I <sub>cu</sub> )	100	100	100	100	100	100	100	100
Short-circuit making capacity I <sub>cm</sub> (kA)	415 V~								
Breaking capacity on 1 pole I <sub>su</sub> (kA) For IT neutral earthing system	220/240 V~	6.25	8.75	12.5	16.3	6.25	8.75	12.5	16.3
	380/415 V~	4	6.25	9	12.5	4	6.25	9	12.5
	440 V~	2.5	4.5	6.25	7.5	2.5	4.5	6.25	7.5
	480/500 V~	2	2.5	3	3.75	2	2.5	3	3.75
	690 V~	1.25	1.25	2	2.5	1.25	1.25	2	2.5

MCCBs	DPX <sup>3</sup> 250 thermal magnetic				DPX <sup>3</sup> 250 electronic release				
	25 kA	36 kA	50 kA	70 kA	25 kA	36 kA	50 kA	70 kA	
Nominal current I <sub>n</sub> (A)	100-160-200-250				40-100-160-250				
Rated insulation voltage (V)	50-60Hz				800 (with integrated e.l.c.bs: 500)				
	50-60Hz				690 (with integrated e.l.c.bs: 500)				
	Continuous				500				
Rated impulse withstand current U <sub>imp</sub> (kV)	8								
Category of use	A								
Ultimate breaking capacity (kA) in AC	220/240 V~	40	60	80	100	40	60	80	100
	380/415 V~	25	36	50	70	25	36	50	70
	440 V~	20	30	40	60	20	30	40	60
	480/500 V~	10	25	30	40	10	25	30	40
	690 V~	8	16	18	20	8	16	-	20
Ultimate breaking capacity (kA) in DC	125 V <sub>==</sub> <sup>1</sup>	50	72	80	90	50	72	80	90
	250 V <sub>==</sub> <sup>1</sup>	25	36	40	45	25	36	40	45
	400 V <sub>==</sub> <sup>2</sup>	30	45	50	55	30	45	50	55
	500 V <sub>==</sub> <sup>2</sup>	25	36	40	45	25	36	40	45
	Standard breaking capacity I <sub>cs</sub> (% I <sub>cu</sub> )	100	100	100	100	100	100	100	100
Breaking capacity on 1 pole I <sub>su</sub> (kA) For IT neutral earthing system	220/240 V~	10	15	20	25	15	15	20	25
	380/415 V~	6.25	9	12.5	17.5	6.25	9	12.5	17.5
	440 V~	5	7.5	10	15	5	7.5	10	15
	480/500 V~	2.5	6.25	7.5	10	2.5	6.25	7.5	10
	690 V~	2	4	4.5	5	-	-	-	-

## Temperature derating

DPX<sup>3</sup> 160

I <sub>n</sub> (A)	Temperature (°C)											
	-25	-20	-10	-5	0	10	20	30	40	50	60	70
16	23	22	21	21	20	19	18	17	16	15	15	14
25	37	35	34	33	32	30	28	26	25	23	22	21
40	55	54	52	51	50	47	43	42	40	38	36	34
63	88	87	84	83	81	76	69	66	63	60	57	55
80	115	113	111	109	107	97	87	84	80	78	75	72
100	135	133	130	123	115	108	100	100	100	95	90	85
125	160	158	155	153	150	138	125	125	125	118	112	105
160	224	221	214	210	205	192	176	168	160	152	145	139

DPX<sup>3</sup> 250

I <sub>n</sub> (A)	Temperature (°C)											
	-25	-20	-10	-5	0	10	20	30	40	50	60	70
40	54	53	51	50	49	48	45	41	40	38	36	34
100	135	132	128	126	123	120	112	102	100	94	90	84
160	216	211	205	201	197	192	179	163	160	151	143	134
200	270	264	256	251	246	240	224	203	200	189	179	168
250	338	330	320	314	308	300	280	254	250	236	224	210

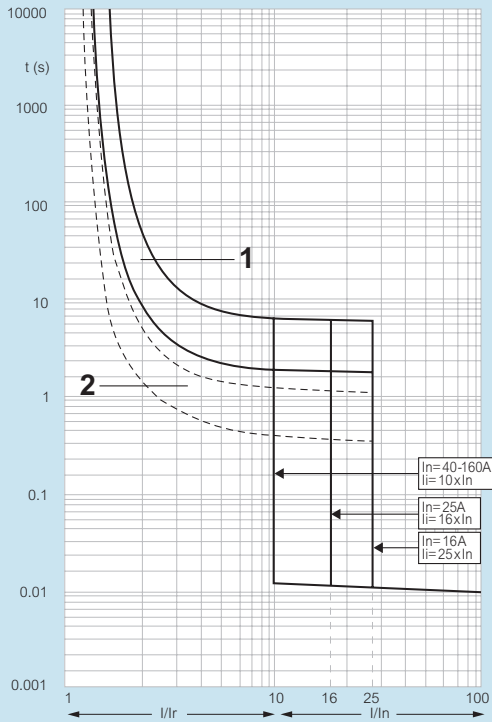
1: 2 poles in series  
2: 3 poles in series

## Derating at different altitudes

Altitude (m)	2000	3000	4000
Rated current (A)	1 × I <sub>n</sub>	0.96 × I <sub>n</sub>	0.93 × I <sub>n</sub>
Rated voltage (V)	DPX <sup>3</sup> no e.l.c.bs	690	690
	DPX <sup>3</sup> with e.l.c.bs	500	500
			550
			400

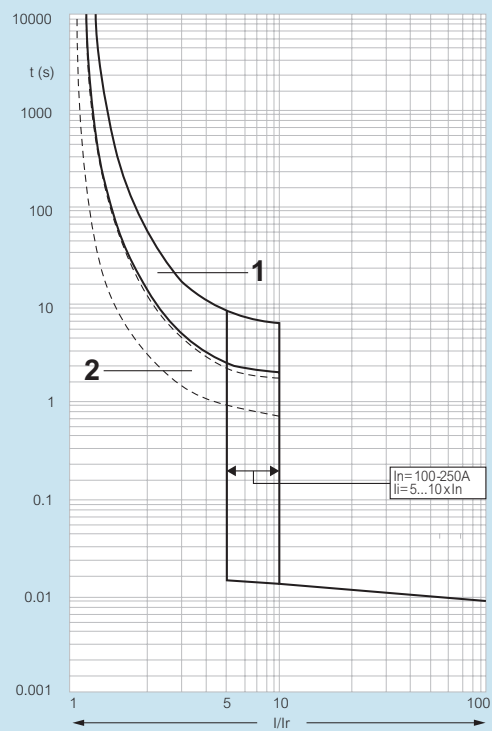
# DPX<sup>3</sup> 160/250

## DPX<sup>3</sup> 160 thermal-magnetic tripping curve



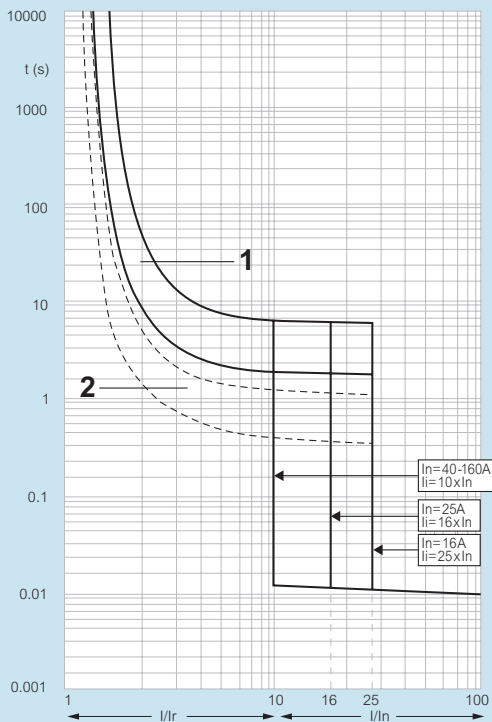
t: time  
 I: rated current  
 I<sub>r</sub>: setting current  
 Curve n°1: characteristic with cold start  
 Curve n°2: characteristic with hot start

## DPX<sup>3</sup> 250 thermal-magnetic tripping curves



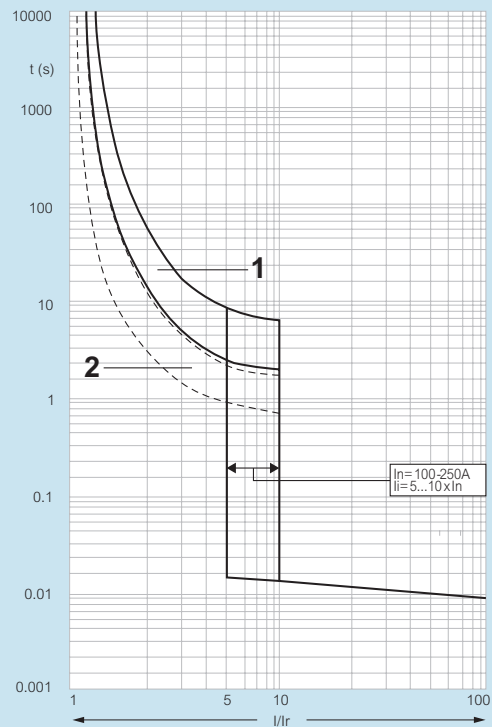
t: time  
 I: rated current  
 I<sub>r</sub>: setting current  
 Curve n°1: characteristic with cold start  
 Curve n°2: characteristic with hot start

## DPX<sup>3</sup> 160 thermal-magnetic with integrated e.l.c.bs tripping curves



t: time  
 I: rated current  
 I<sub>r</sub>: setting current  
 Curve n°1: characteristic with cold start  
 Curve n°2: characteristic with hot start

## DPX<sup>3</sup> 250 thermal-magnetic with integrated e.l.c.bs tripping curves



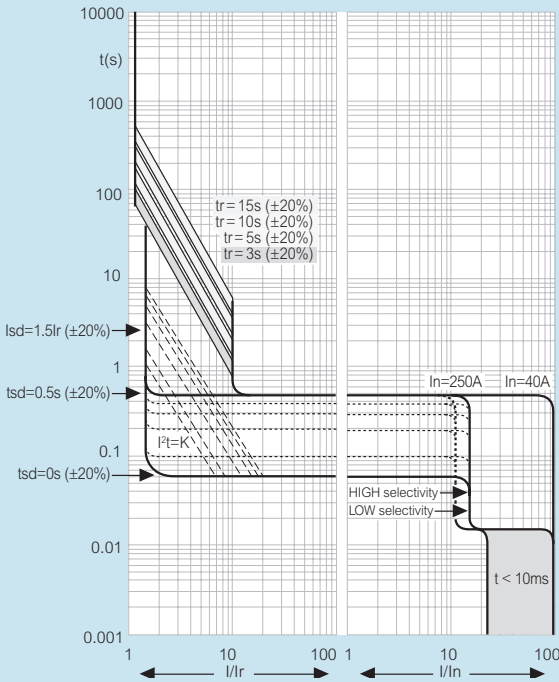
t: time  
 I: rated current  
 I<sub>r</sub>: setting current

## DPX<sup>3</sup> 160/250 (continued)

## DPX<sup>3</sup> 630/1600

reading DPX<sup>3</sup> characteristic curves and adjustment ranges

### DPX<sup>3</sup> 250 electronic release tripping curves



### Adjustment for thermal-magnetic DPX<sup>3</sup>

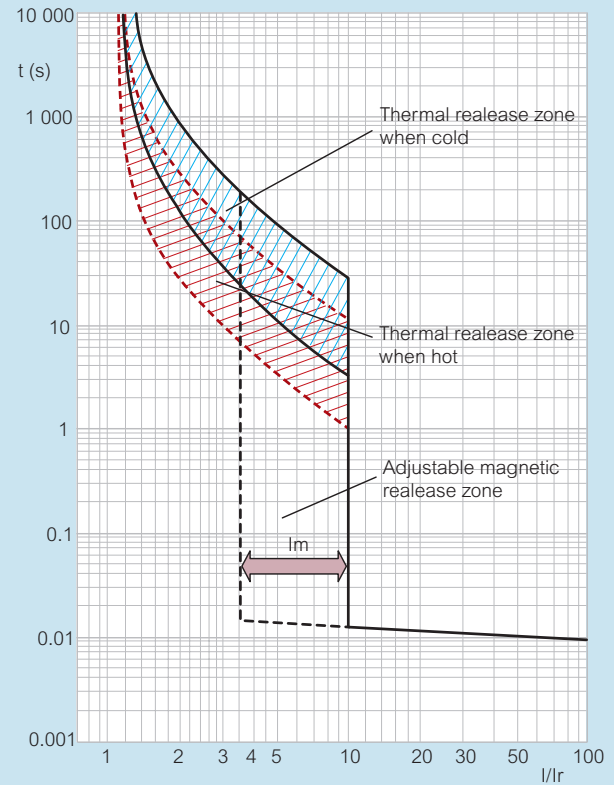
Setting	DPX <sup>3</sup> thermal magnetic	DPX <sup>3</sup> with integrated e.l.c.bs
<b>Ir overload trip threshold (thermal)</b>	0.4 to 1 In	0.4 to 1 In
<b>Im short-circuit trip threshold (magnetic)</b>	fixed: 10 In <sup>1</sup>	fixed: 10 In <sup>1</sup>
<b>I<sub>Δn</sub> (A)</b>	-	0.03 - 0.03 - 1 - 3
<b>Δt (s)</b>	-	0 - 0.3 - 1 - 3

1: 400 A for DPX<sup>3</sup> 160 In 16 A and 25 A

### Adjustment for DPX<sup>3</sup> electronic release

Setting	DPX <sup>3</sup>	DPX <sup>3</sup> with integrated e.l.c.bs
<b>Ir overload trip threshold (long delay)</b>	0.4 to 1 In	
<b>tr long delay trip time</b>	3 - 5 - 10 - 15s	
<b>Isd short-circuit trip threshold (short delay)</b>	1.5 - 2 - 2.5 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 x Ir	
<b>tsd short delay trip time</b>	0.01 - 0.1 - 0.2 - 0.3 - 0.4 - 0.5s	
<b>Ig</b>	(0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 1 - OFF) x In	
<b>tg</b>	0.1 - 0.2 - 0.5 - 1s	

### Tripping curve for a DPX<sup>3</sup> thermal-magnetic trip



I: actual current

Ir: thermal protection against overloads (setting: Ir = x In)

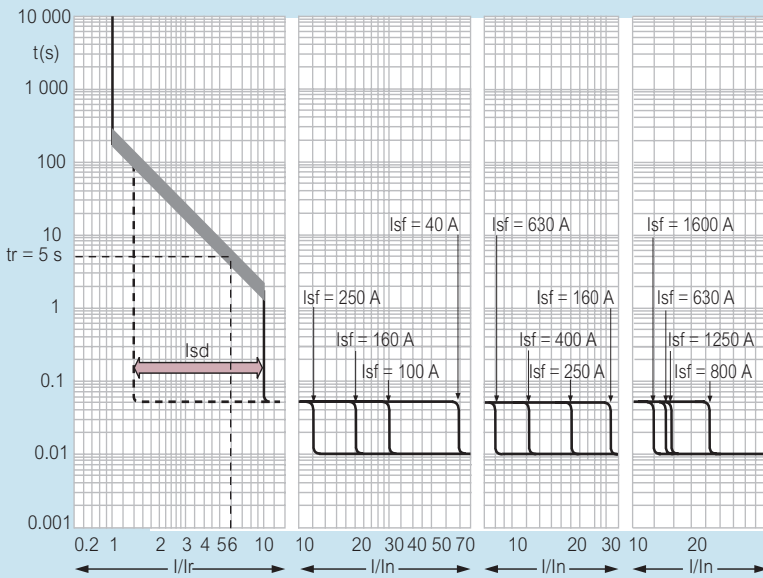
Im: magnetic protection against short-circuits (setting: Im = x In or Im = x Ir)

As the abscissa of the curves represents the ratio I/In, modifying the setting of Ir will not change the graphical representation of the thermal trip. However, the magnetic setting can be read directly (between 3.5 and 10 in the example).

# DPX<sup>3</sup> 630/1600

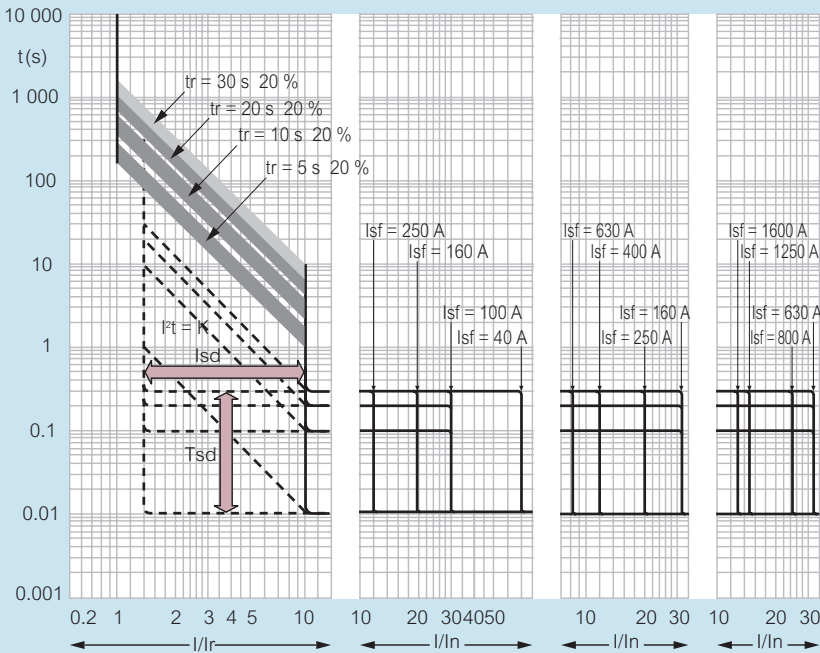
## reading DPX<sup>3</sup> characteristic curves and adjustment ranges

### ■ Tripping curve for a DPX<sup>3</sup> electronic release S1, adjustable I<sub>r</sub> and I<sub>sd</sub>



I: actual current  
 I<sub>r</sub>: long delay protection against overloads (setting: I<sub>r</sub> = x I<sub>n</sub>)  
 I<sub>sd</sub>: long delay protection operation time (fixed value: 5 s at 6 I<sub>r</sub>)  
 I<sub>sd</sub>: short delay protection against short-circuits (setting: I<sub>m</sub> = x I<sub>r</sub>, between 1.5 and 10 I<sub>r</sub> in the example)  
 I<sub>sd</sub>: short delay protection operation time (fixed value: 0.05 s)  
 I<sub>f</sub>: fixed threshold instantaneous protection (4 to 20 kA depending on model)

### ■ Tripping curve for a DPX<sup>3</sup> electronic release S2, adjustable I<sub>r</sub>, I<sub>sd</sub>, t<sub>r</sub> and t<sub>sd</sub>



I: actual current  
 I<sub>r</sub>: long delay protection against overloads (setting: I<sub>r</sub> = x I<sub>n</sub>)  
 t<sub>r</sub>: long delay protection operation time (fixed value: 5 to 30 s)  
 I<sub>sd</sub>: short delay protection against short-circuits (setting: I<sub>m</sub> = x I<sub>r</sub>, between 1.5 and 10 I<sub>r</sub> in the example)  
 t<sub>sd</sub>: short delay protection operation time (setting: 0 to 0.3 s)  
 I<sub>2t</sub> constant (adjustable via I<sub>sd</sub>)  
 I<sub>f</sub>: fixed threshold instantaneous protection (4 to 20 kA depending on model)

### ■ Adjustment for thermal-magnetic DPX<sup>3</sup>

Setting	DPX <sup>3</sup> 630	DPX <sup>3</sup> 1600
I <sub>r</sub> overload trip threshold (thermal)	0.8 to 1 I <sub>n</sub>	0.8 to 1 I <sub>n</sub>
I <sub>m</sub> short-circuit trip threshold (magnetic)	5 to 10 I <sub>n</sub>	5 to 10 I <sub>n</sub>

### ■ Adjustment for DPX<sup>3</sup> electronic release

Setting	DPX <sup>3</sup> 630 / 1600 S1	DPX <sup>3</sup> 630 / 1600 S2
I <sub>r</sub> overload trip threshold (long delay)	(0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 0.95 - 1) x I <sub>n</sub>	
t <sub>r</sub> long delay trip time	fixed: 5 s (to 6 I <sub>r</sub> )	5 - 10 - 20 - 30 s (to 6 I <sub>r</sub> )
I <sub>sd</sub> short-circuit trip threshold (short delay)	(1.5 - 2 - 3 - 4 - 5 - 6 - 8 - 10) x I <sub>r</sub> <sup>1</sup>	
t <sub>sd</sub> Short delay trip time	fixed: 0.05 s	0 - 0.1 - 0.2 - 0.3 s

1: 7.9 I<sub>r</sub> for DPX<sup>3</sup> 630 I<sub>n</sub> 630 A

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<b>650</b>		50400355	33	50400567	34	50400778	36	50414003M4RE	41	55400106	30	55400505	34	55400774	36
652EFB01	69	00356	-	00568	-	50401001	38	3M4RF	-	00107	-	00506	-	00775	-
652EFB02	-	00357	-	00571	-	01002	-	50414004	40	55400112	31	00507	-	00776	-
652EFB04	-	00358	-	00572	-	01003	-	50414004M3RG	41	00113	-	00512	-	00777	-
652EFB51	-	00361	-	00573	-	01004	-	4M3RH	-	00114	-	00513	-	55401002	38
652EFB52	-	00362	-	00574	-	01005	-	4M4RG	-	00115	-	00514	-	01003	-
652EFB54	-	00363	-	00575	-	01006	-	4M4RH	-	00116	-	00515	-	01004	-
653EFB02	-	00364	-	00576	-	01007	-	50414005	41	00117	-	00516	-	01005	-
653EFB03	-	00365	-	00577	-	01008	-	50414005M3RJ	-	55400122	30	00517	-	01006	-
653EFB04	-	00366	-	00578	-	01011	-	5M3RJ	-	00123	-	00522	-	01007	-
653EFB52	-	00367	-	50400601	35	01012	-	5M4RJ	-	00124	-	00523	-	01012	-
653EFB53	-	00368	-	00602	-	01013	-	5M4RJ	-	00125	-	00524	-	01013	-
653EFB54	-	00371	-	00603	-	01014	-	50414021	40	00126	-	00525	-	01014	-
653FB01	-	00372	-	00604	-	01015	-	14022	-	55400142	31	00526	-	01015	-
<b>5000 00</b>		00373	-	00605	-	01016	-	14023	-	00143	-	00527	-	01016	-
515EFB01	21	00374	-	00606	-	01017	-	50414024	41	00142	-	00532	-	01017	-
554EFB01	31	00375	-	00607	-	01018	-	14025	-	00144	-	00533	-	55401102	37
EFB02	-	00376	-	00608	-	01101	-	14026	-	00145	-	00534	-	01112	-
IFB01	-	00377	-	00611	-	01102	-	50414063	39	00146	-	00535	-	01122	-
IFB02	-	00378	-	00612	-	50401111	37	14064	-	00147	-	00536	-	01123	-
IFB03	-	50400401	32	00613	-	01112	-	14130	-	55400152	30	00537	-	01124	-
IFB04	-	00402	-	00614	-	01121	-	14143	-	00153	-	00542	-	01125	-
IFB05	-	00403	-	00615	-	01122	-	14144	-	00154	-	00543	-	01126	-
IFB06	-	00404	-	00616	-	01123	-	50414181	-	00155	-	00544	-	01127	-
IFB07	-	00405	-	00617	-	01124	-	14185	-	00156	-	00545	-	01132	-
IFB08	-	00406	-	00618	-	01125	-	14192	-	00157	-	00546	-	01133	-
IFB09	-	00407	-	00621	-	01126	-	14241	-	00242	-	00547	-	01134	-
557300	11	00408	-	00622	-	01127	-	14281	-	00243	-	00552	-	01135	-
597013	-	00411	-	00623	-	01128	-	14282	-	00244	-	00553	-	01136	-
<b>500000 00</b>		00412	-	00624	-	01131	-	14291	-	00245	-	00554	-	01137	-
50400101	30	00413	-	00625	-	01132	-	50632001	42	00246	-	00555	-	55401202	38
00102	-	00414	-	00626	-	01133	-	32003	-	00247	-	00556	-	01203	-
00103	-	00415	-	00627	-	01134	-	32205	-	00252	-	00557	-	01204	-
00104	-	00416	-	00628	-	01135	-	32212	-	00253	-	00562	-	01205	-
00105	-	00417	-	00631	-	01136	-	32213	-	00254	-	00563	-	01206	-
00106	-	00418	-	00632	-	01137	-	32214	-	00255	-	00564	-	01207	-
00107	-	00419	-	00633	-	01138	-	51002002	23	00256	-	00565	-	01208	-
00108	-	00421	-	00634	-	50401201	38	02160	-	00257	-	00566	-	01209	-
00109	-	00422	-	00635	-	01202	-	02161	-	55400302	32	00567	-	01210	-
00110	-	00423	-	00636	-	01203	-	02362	-	00303	-	00572	-	01211	-
00111	-	00424	-	00637	-	01204	-	02461	-	00304	-	00573	-	01212	-
00112	-	00425	-	00638	-	01205	-	02462	-	00305	-	00574	-	01213	-
00113	-	00426	-	00641	-	01206	-	02561	-	00306	-	00575	-	01214	-
00114	-	00427	-	00642	-	01207	-	02562	-	00307	-	00576	-	01215	-
00115	-	00428	-	00643	-	01208	-	02563	-	00312	-	00577	-	01216	-
00116	-	50400111	31	00644	-	01701	-	02564	-	00313	-	55400602	35	01217	-
00117	-	00433	-	00645	-	01702	-	02565	-	00314	-	00603	-	01218	-
00118	-	00434	-	00646	-	01703	-	02661	-	00315	-	00604	-	01722	-
00119	-	00435	-	00647	-	01704	-	51501351	23	00316	-	00605	-	01723	-
00120	-	00436	-	00648	-	01705	-	51501011	21	00317	-	00606	-	55401801	41
00121	-	00437	-	00651	-	01706	-	10102	-	00322	-	00607	-	01802	-
00122	-	00438	-	00652	-	01707	-	10112	-	00323	-	00612	-	01803	-
00123	-	50400441	33	00653	-	01708	-	10113	-	00324	-	00613	-	01804	-
00124	-	00442	-	00654	-	01721	-	10114	-	00325	-	00614	-	01805	-
00125	-	00443	-	00655	-	01722	-	10115	-	00326	-	00615	-	01806	-
00126	-	00444	-	00656	-	01723	-	10116	-	00327	-	00616	-	55403002	36
00127	-	00445	-	00657	-	01724	-	51511051	22	00332	-	00617	-	03003	-
00128	-	00446	-	00658	-	01725	-	11052	-	00333	-	00622	-	03004	-
00129	-	00447	-	00659	-	01726	-	11151	-	00334	-	00623	-	03005	-
00130	-	00448	-	00662	-	01727	-	11261	-	00335	-	00624	-	03006	-
00131	-	00451	-	00663	-	01728	-	51515051	23	00336	-	00625	-	55403402	37
00132	-	00452	-	00664	-	50401801	41	15052	-	00337	-	00626	-	03403	-
00133	-	00453	-	00665	-	01802	-	15056	-	55400342	33	00627	-	03404	-
00134	-	00454	-	00666	-	01803	-	15057	-	00343	-	00632	-	03405	-
00135	-	00455	-	00667	-	01804	-	15058	-	00344	-	00633	-	03406	-
00136	-	00456	-	00668	-	01805	-	15067	-	00345	-	00634	-	03407	-
00137	-	00457	-	00671	-	01806	-	15071	-	00346	-	00635	-	03408	-
00138	-	00458	-	00672	-	50403072	36	03072	-	00347	-	00636	-	03412	-
00139	-	00461	-	00673	-	03002	-	15073	-	00352	-	00637	-	03413	-
00140	-	00462	-	00674	-	03003	-	15074	-	00353	-	00642	-	03414	-
00141	-	00463	-	00675	-	03004	-	15075	-	00354	-	00643	-	03415	-
00142	-	00464	-	00676	-	03005	-	51520101	21	00355	-	00644	-	03416	-
00143	-	00465	-	00677	-	03006	-	20102	-	00356	-	00645	-	03417	-
00144	-	00466	-	00678	-	03007	-	20112	-	00357	-	00646	-	03422	-
00145	-	00467	-	50400701	36	03008	-	20113	-	00362	-	00647	-	03423	-
00146	-	00468	-	00702	-	50403101	37	20114	-	00363	-	00648	-	03424	-
00147	-	00469	-	00703	-	03102	-	20115	-	00364	-	00652	-	03425	-
00148	-	00470	-	00704	-	03401	-	20116	-	00365	-	00653	-	03426	-
00149	-	00471	-	00705	-	03402	-	51520351	22	00366	-	00654	-	03427	-
00150	-	00472	-	00706	-	03403	-	20361	-	00367	-	00655	-	03428	-
00151	-	00473	-	00707	-	03404	-	20451	-	00372	-	00656	-	03433	-
00152	-	00474	-	00708	-	03405	-	20461	-	00373	-	00657	-	03434	-
00153	-	00475	-	00711	-	03406	-	20551	-	00374	-	00662	-	03435	-
00154	-	00476	-	00712	-	03407	-	20561	-	00375	-	00663	-	03436	-
00155	-	00477	-	00713	-	03408	-	20571	-	00376	-	00664	-	03437	-
00156	-	00478	-	00714	-	03411	-	20581	-	00377	-	00665	-	03438	-
00157	-	50400501	34	00715	-	03412	-	20651	-	55400402	32	00666	-	5565051	40
00158	-	00502	-	00716	-	03413	-	51521051	22	00403	-	00667	-	5565052	-
00159	-	00503	-	00717	-	03414	-	21052	-	00404	-	00668	-	5565053	-
00160	-	00504	-	00718	-	03415	-	21151	-	00405	-	00669	-	60000 00	-
00161	-	00505	-	00719	-	03416	-	21261	-	00406	-	00670	-	60280100P	66
00162	-	00506	-	00721	-	03417	-	51530101	21	00407	-	00671	-	80101P	-
00163	-	00507	-	00722	-	03418	-	30102	-	00412	-	00672	-	80102P	-
00164	-	00508	-	00723	-	03421	-	30112	-	00413	-	55400702	36	80104P	-
00165	-	00511	-	00724	-	03422	-	30113	-	00414	-	00703	-	80106P	-
00166	-	00512	-	00725	-	03423	-	30114	-	00415	-	0			



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60280306P	70	60280984P	67	60390357P	72	65213782	82	65280356P	72	65281105P	77	65390186P	66	65393102P	69
80307P	—	80986P	—	60390404P	71	13783	—	80358P	—	81106P	—	81188P	—	83103P	—
80310P	—	80987P	—	90406P	—	13784	—	65280400P	71	81108P	—	65390295P	68	83104P	—
80311P	—	60281000P	75	90407P	—	13792	—	80401P	—	81110P	—	80296P	—	65396042P	79
80312P	—	81001P	—	90414P	—	13793	—	80403P	—	81111P	—	90298P	—	86043P	—
80314P	—	81002P	—	90416P	—	13794	—	80405P	—	81113P	—	65390305P	70	96044P	—
80316P	—	81004P	—	90417P	—	65222002	80	80406P	—	81115P	—	80306P	—	65397105P	68
80317P	—	81006P	—	90424P	—	22003	—	80408P	—	81116P	—	90308P	—	97106P	—
80320P	—	81007P	—	90427P	—	22004	—	80410P	—	81118P	—	90315P	—	97108P	—
80321P	—	81010P	—	90429P	—	65245001P	78	80411P	—	6521300P	76	90318P	—	97145P	—
80322P	—	81011P	—	90434P	—	5002P	—	80413P	—	81301P	—	90319P	—	97146P	—
80324P	—	81012P	—	90436P	—	65245002PM4RD	—	80415P	—	81303P	—	90325P	—	97148P	—
80326P	—	81014P	—	90437P	—	002PM4RE	—	80416P	—	81305P	—	90326P	—		
80327P	—	81016P	—	60390444P	72	65245003P	—	80418P	—	81306P	—	90328P	—		
80330P	—	81017P	—	90446P	—	65245003PM4RB	—	80420P	—	81308P	—	90335P	—		
80331P	—	81020P	—	90447P	—	003PM4RC	—	80421P	—	81310P	—	90336P	—		
80332P	—	81021P	—	90454P	—	003PMFD	—	80423P	—	81311P	—	90337P	—		
80334P	—	81022P	—	90456P	—	003PMFE	—	80425P	—	81313P	—	65390345P	72	71000104	11
80336P	—	81024P	—	90457P	—	003PM4RI	—	80426P	—	81315P	—	75003000	11	03001	—
80337P	—	81026P	—	90459P	—	65245004P	—	80428P	—	81316P	—	—	—	03002	—
60280340P	72	81027P	—	60390704P	74	65245004PM4RG	—	80430P	—	81318P	—	90348P	—	03004	—
80341P	—	81030P	—	90707P	—	004PM4RH	—	80431P	—	81320P	—	90355P	—	03005	—
80342P	—	81031P	—	90714P	—	65245006P	—	80433P	—	81321P	—	90356P	—	03006	—
80344P	—	81032P	—	90716P	—	65245006PM4RI	—	80435P	—	81323P	—	90358P	—	03008	—
80346P	—	81034P	—	90717P	—	006PM4RJ	—	80436P	—	81325P	—	65390405P	71	03009	—
80347P	—	81036P	—	90724P	—	65245021P	—	80438P	—	81326P	—	90408P	—	75005000	10
80350P	—	81037P	—	90726P	—	45022P	—	65280440P	72	81328P	—	90409P	—	05005	—
80351P	—	60281100P	77	90727P	—	45023P	—	80441P	—	81330P	—	90415P	—	05011	—
80352P	—	81101P	—	90734P	—	45024P	—	80443P	—	81331P	—	90416P	—	05012	—
80354P	—	81102P	—	90736P	—	45026P	—	80445P	—	81333P	—	90418P	—	05013	—
80356P	—	81104P	—	90737P	—	45041P	—	80446P	—	81335P	—	90425P	—	05014	—
80357P	—	81106P	—	60390804P	73	45042P	—	80448P	—	81336P	—	90426P	—	05021	—
60280400P	71	81107P	—	90806P	—	45043P	—	80450P	—	81338P	—	90428P	—	05022	—
80401P	—	81110P	—	90807P	—	45044P	—	80451P	—	81339P	—	90435P	—	05023	—
80402P	—	81111P	—	90814P	—	45045P	—	80453P	—	65281400P	77	90436P	—	05024	—
80404P	—	81112P	—	90816P	—	45046P	—	80455P	—	81401P	—	90438P	—	05100	—
80406P	—	81114P	—	90818P	—	65255011P	—	80456P	—	81403P	—	90445P	—	05200	—
80407P	—	81116P	—	90824P	—	65255012P	—	80458P	—	81405P	—	90446P	—	06005	—
80410P	—	81117P	—	90826P	—	65255013P	—	65280700P	74	81406P	—	90448P	—	06205	—
80411P	—	60281300P	76	90827P	—	65255014P	—	81408P	—	81409P	—	90455P	—	75105000	10
80412P	—	81301P	—	90834P	—	65255015P	—	81410P	—	81411P	—	90458P	—	05001	—
80414P	—	81302P	—	90836P	—	013PM4RC	—	81413P	—	81412P	—	90459P	—	75150101	8
80416P	—	81304P	—	90837P	—	013PM4RD	—	81415P	—	65390705P	74	90460P	—	60101	—
80417P	—	81306P	—	90926P	—	013PM4RE	—	81416P	—	81415P	—	90706P	—	60102	—
80420P	—	81307P	—	60390924P	67	90927P	—	81418P	—	81416P	—	90708P	—	75160101	9
80421P	—	81310P	—	90928P	—	65255014P	—	81419P	—	81418P	—	90715P	—	75170101	8
80422P	—	81311P	—	90954P	—	65255014PM4RG	—	81420P	—	81420P	—	90716P	—	80101	—
80424P	—	81312P	—	90956P	—	014PM4RH	—	81421P	—	81421P	—	90718P	—	80102	—
80426P	—	81314P	—	90957P	—	65255016P	—	81423P	—	81423P	—	90725P	—	75200101	—
80427P	—	81316P	—	90974P	—	65255016PM4RI	—	81425P	—	81425P	—	90726P	—	00102	—
80430P	—	81317P	—	90976P	—	016PM4RJ	—	81426P	—	81426P	—	90728P	—	00111	—
80431P	—	81320P	—	90977P	—	65255031P	—	81428P	—	81428P	—	90735P	—	75201001	9
80432P	—	81321P	—	90984P	—	55032P	—	81430P	—	81430P	—	90736P	—	01002	—
80434P	—	81322P	—	90986P	—	55033P	—	81431P	—	81431P	—	90738P	—	01151	—
80436P	—	81324P	—	90987P	—	55034P	—	81433P	—	81433P	—	90739P	—	01261	—
80437P	—	81326P	—	60391004P	75	55036P	—	81435P	—	81435P	—	90806P	—	75220101	8
60280440P	72	81327P	—	91006P	—	55051P	—	81436P	—	81436P	—	90808P	—	20102	—
80441P	—	81330P	—	91007P	—	55052P	—	81438P	—	81438P	—	90815P	—	20111	—
80442P	—	81331P	—	91009P	—	55053P	—	65281811P	79	90816P	—	90815P	—	75221001	9
80444P	—	81332P	—	91014P	—	55054P	—	81439P	—	81439P	—	90818P	—	21002	—
80446P	—	81334P	—	91016P	—	55055P	—	81441P	—	81441P	—	90825P	—	21151	—
80447P	—	81336P	—	91017P	—	55076P	—	81442P	—	81442P	—	90826P	—	21261	—
80450P	—	81337P	—	91024P	—	65280100P	66	81443P	—	81443P	—	90828P	—	75240101	8
80451P	—	60281400P	77	91026P	—	80101P	—	65280800P	73	81444P	—	90835P	—	40102	—
80452P	—	81401P	—	91027P	—	80103P	—	81445P	—	81445P	—	90836P	—	40111	—
80454P	—	81402P	—	91036P	—	80105P	—	81446P	—	81446P	—	90838P	—	75241001	9
80456P	—	81404P	—	91037P	—	80106P	—	81447P	—	81447P	—	90839P	—	41002	—
80457P	—	81406P	—	91039P	—	80108P	—	81448P	—	81448P	—	90840P	—	41151	—
60280700P	74	81407P	—	60391104P	77	80110P	—	81449P	—	81449P	—	90841P	—	41261	—
80701P	—	81410P	—	91106P	—	80112P	—	81450P	—	81450P	—	90842P	—	75350102H	8
80702P	—	81411P	—	91107P	—	80114P	—	81451P	—	81451P	—	90843P	—	60102H	—
80704P	—	81412P	—	91114P	—	80116P	—	81452P	—	81452P	—	90844P	—	60103H	—
80706P	—	81414P	—	91116P	—	80118P	—	81453P	—	81453P	—	90845P	—	70101H	—
80707P	—	81416P	—	91117P	—	80120P	—	81454P	—	81454P	—	90846P	—	80101H	—
80710P	—	81417P	—	60391304P	76	91128P	—	81455P	—	81455P	—	90847P	—	80102H	—
80711P	—	81420P	—	91306P	—										

# Protection classifications

## Protection against solid bodies and liquids : Index of protection - IP xx

Degree of protection of enclosures of electrical equipment in accordance with standards IEC 60529, BS EN 60529  
Up to 1 000 V~ and 1 500 V\_

1 <sup>st</sup> digit: protection against solid bodies		Additional letter IP XX (ABCD): protection against direct contact resulting from the access to hazardous current-carrying parts		2 <sup>nd</sup> digit: protection against liquids			
IP	tests	IP	tests	protection	IP	tests	protection
0	No protection				0		No protection
1	Protected against solid bodies larger than 50 mm	A	The back of the hand remains remote from dangerous parts		1	Protected against vertically-falling drops of water (condensation)	
2	Protected against solid bodies larger than 12.5 mm	B	The dangerous parts can not be touched when introducing a finger		2	Protected against drops of water falling at up to 15° from the vertical	
3	Protected against solid bodies larger than 2.5 mm	C	The dangerous parts can not be touched when introducing a tool (eg a screwdriver)		3	Protected against drops of rain water at up to 60° from the vertical	
4	Protected against solid bodies larger than 1 mm				4	Protected against projections of water from all directions	
5	Protected against dust (no harmful deposit)	D	The dangerous parts cannot be touched when introducing a wire		5	Protected against jets of water from all directions	
6	Completely protected against dust				6	Protected against jets of water of similar force to heavy seas	
					7	Protected against the effects of immersion	
					8	Protected against prolonged effects of immersion under pressure	

## Protection against mechanical impact : Index of protection - IK

According to standards IEC 62262 and BS EN 62262

IK	Tests	Impact energy (in Joules)
IK 00		0
IK 01	0.2 kg, 75 mm	0.15
IK 02	0.2 kg, 100 mm	0.2
IK 03	0.2 kg, 175 mm	0.35
IK 04	0.2 kg, 250 mm	0.5
IK 05	0.2 kg, 350 mm	0.7
IK 06	0.5 kg, 200 mm	1
IK 07	0.5 kg, 400 mm	2
IK 08	1.7 kg, 295 mm	5
IK 09	5 kg, 200 mm	10
IK 10	5 kg, 400 mm	20

(1) A product previously classed as IP xx-7 can be assumed to fulfill the conditions of an IP xx - IK 08

This table can be used to ascertain the resistance of a product to an impact given in Joules from the IK code (graduated from 00 to 10). It can also be used to ascertain the correspondence with the old IP code 3rd digit and the corresponding external "Ag" conditions.

The contents of the Protection Classifications charts are for guidance only. If you have any doubt as to the interpretation of the information contained therein, please refer either to the standard itself or contact Legrand.

## Health and Safety at Work, etc. Act. 1974

### Statement to Purchasers and Prospective Purchasers

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#### The Electricity at Work Regulations, 1989

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Fax : +44 (0) 20 8996 7001

Email : [cservices@bsi-global.com](mailto:cservices@bsi-global.com)

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