

SOLUTIONS FOR THE ELECTRICAL DISTRIBUTION

BUSBAR SYSTEM



GLOBAL SPECIALIST IN ELECTRICAL
AND DIGITAL BUILDING INFRASTRUCTURES

legrand®

LB PLUS

BUSBAR FROM 25, 40 TO 63 A

Light and Power.

The solution that comes from above

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THE BUSBAR SYSTEM



The busbar is the most modern solution for the distribution of energy in an installation for machinery, equipment and lighting fittings, in all types of buildings such as warehouses, trade fairs.

The busbar is also frequently used to power the (horizontal and vertical) backbones of buildings used for the commercial-service sectors, thus observing the time required for the installation and providing a final solution with remarkable technical advantages.

Legrand's busbars, available in 3 segmented ranges

(Low Power, Medium Power and High Power), are able to meet all installation requirements, from 25 A to over 6300 A.



Easy

The electric design of the busbars is achieved in compliance with the product Standards.

The rated current of our busbars is guaranteed at a room average temperature of 40 °C (n.d.r. the Standard requires 35°C).

After choosing the busbar which is able to meet the operating current regulations, it will be very easy to verify the voltage drop as well as the protection against overcurrents by using the technical tables available for all our production lines.

In particular, these tables define a wide range of technical data which allow the planning engineer to carry out calculations with electric values, which are not estimated but the result of measurements made during heating and short circuit tests (in certified LOVAG laboratories), which have certified all product lines.

When using busbars, the load protection is located very close to the device (decentralized protection); junction boxes can contain protection devices such as thermal magnetic circuit breakers, fuse carriers and motorized switches which allow you to easily and efficaciously manage the system.



Safety

A busbar does not use large amounts of insulating plastic material and potentially dangerous materials in case of fire.

Furthermore, the plastic materials used for the insulating parts of the busbars are always self-extinguishing (from V0 to V2) and the gas emission is generally very low (Halogen Free). Low electromagnetic emission is another advantage of the busbars as a result, the metal plate casing of the BUSBARS serves as a screen for the electric field (shielded enclosure); the extreme vicinity between the phase conductors also reduces considerably the emission of the magnetic field.

The tests carried out on one of our 2500 A SCP (from 138 to 141 page) busbars at full operating current has shown that the emission of the magnetic field (magnetic induction) is lower than the "target level" of the Decree at a distance of 0.3m, whereas the threshold considered as the "quality target" can be achieved at a distance of only 0.7m from the busbar.

These features make our busbars the unavoidable choice for hospital facilities, data processing centres and wherever it is necessary to supply a large amount of power in the proximity of workplaces and/or sensitive equipments.

THE BUSBAR ADVANTAGE



Example of lighting and small power distribution



Example of high power distribution

Flexibility

By using the outlet windows located on the straight elements, the busbars provide high management flexibility, both when planning (electrical engineer) and when installing the system (installer); they are also used for the unavoidable changes required by the electric system to adapt to the varied needs of the end user during the life of plant.

The junction boxes can be inserted and removed from their outlets when the busbar is electrically powered and inserted in another plug outlet, thus avoiding downtime.

The engineering department in charge of designing the busbar does not have to know the exact position of the machinery and of the electric loads that will be installed in the company; the project that will be carried out will be open to changes and variations which will be defined by the end user when operationally using the system.

No more point-point connections but only one power distribution system to which you will always be able to connect to wherever there is a free window.

Because of its flexibility and durability features Legrand's busbar, installed inside a building, allows you to easily change the destination of its intended use of the rooms, thus giving also advantages to those who manage and locate the various parts of the building premises.

Quick installation

The busbar's junction and fixing systems have been designed and created to install busbars easily. In a cable and tray system, the time required to install only the tray is the same used to install a complete system in busbars.



Example of space used by cable tray system

Furthermore, given the same capacity, a power busbar, which generally has aluminium conductors, is much lighter than a system made with (copper) cables: lighter weights require a lower number of supporting frames or, in any case, more simple and inexpensive supporting frames.

That is why the installation time of a busbar is obviously shorter than a similar system made with cables.



Example of Legrand busbar system

Reduced dimensions

The overall dimensions of the busbars are generally smaller than an equivalent system made with cables, especially when the currents to be carried exceed 1000A and when several cables in parallel are necessary to ensure such capacity.

Other advantages can be achieved when there are changes of direction where the radius of curvature of the cables is minimal and enough to not damage the insulating material; busbars allow you to change directions with 90° angles, thus optimizing the small spaces used in service areas.



Example of more space busy by cable tray distribution

Company approval CERTIFICATIONS

The quality management system

Legrand has always considered Quality one of the strategic points of its policy, and therefore implements a strict Quality Management System.

The efficacy of the procedures devised and the level of organisation required for their implementation, have enabled the company to obtain the approval certification of its Quality Management System in accordance with the latest edition of the UNI EN ISO 9001 standard. All company processes, from Marketing to Product Development, Manufacturing, Sale, and Technical Support, contribute to meeting the requirements for obtaining and keeping such Approval Certification. The certifying body used is Bureau Veritas. With its presence in over 140 countries, and over 100 years of experience in approval certification, Bureau Veritas is highly recognised by over 30 accreditation bodies, and is today among the world leaders in the field.



Accreditation of test room laboratory

The test labs have a fundamental role in ensuring the Company Quality, both in terms of development, and as a complement to the design stage, as well as in ensuring that the product complies with the standards (type tests).

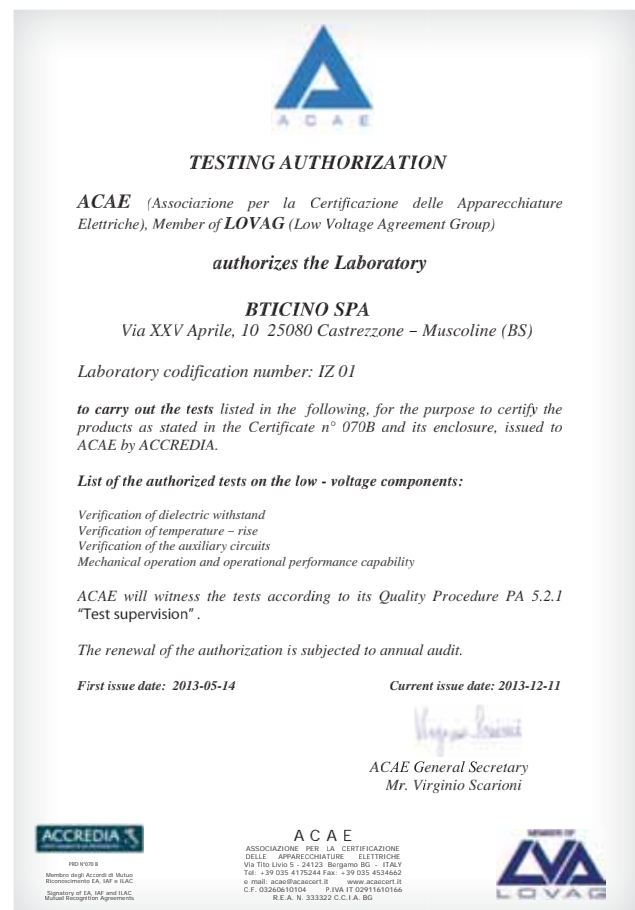
The suitability and reliability of the BTicino/Legrand Test Room is guaranteed by the approvals obtained with ACAE (Associazione per la Certificazione delle Apparecchiature Elettriche ed Elettroniche - Association for the Certification of Electric and Electronic Equipment) in accordance with LOVAG procedures, on the basis of UNI CEI EN ISO/IEC 17025 standard.

The Test Room is where some of the main type tests required for obtaining product approval certification are carried out.

With the support of the BTicino* test room, and of prestigious international labs, Legrand products undergo:

- overtemperature limits tests;
- dielectric properties tests;
- protection circuit efficiency tests;
- aerial and surface insulation distance tests;
- mechanical operation tests;
- busbar trunking system electric characteristics tests;
- construction strength tests;
- thermal cycling test;
- crushing resistance tests.

Moreover, in order to ensure maximum product quality, and in addition to the requirements of the product approval certification, BTicino* Test Room also carries out electromagnetic compatibility measurements on all lines.



(*) BTicino is a brand group Legrand

Mark certifications and approvals

Once compliance with IEC 61439-6 product standard has been confirmed, the various product lines may be further marked and approved for special applications.

The compliance of a product to the specific standards can be certified by the manufacturer declaration and the application of the “CE” symbol, or through the concession of a mark by an appointed third party body that ascertains its compliance. In the case of manufacturer declaration, the responsibility for compliance with the standards lies with the manufacturer

itself; If a quality mark is granted by a third party body, this body will only do so subject to the approval of the manufacturer and the prototype, through type tests, and subsequently following tests on the products sold on the market, which must comply with the requirements of the tests carried out on the prototypes themselves. The same range of products can therefore be granted several quality or conformity marks.

Lovag-ACAE certifications

Among the various certifications obtained by busbars, special attention must be paid to LOVAG-ACAE approval certifications, which are by granted by qualified labs, and are valid in all countries all over the world. ACAE (Association for the Certification of Electric and Electronic Equipment) is a body established in Italy in 1991 operating in the sector of compliance to national and European UNI-CEI EN 45011 standards. This body, operating in the field of the approval certification for electric equipment, in conjunction with ASEFA (France) and ALPHA (Germany), has achieved recognition by

LOVAG (Low Voltage Agreement Group), the European certification body. ACAE itself defines which labs may be qualified on the basis of the accreditations obtained, such as SINAL (Sistema Nazionale per l’Accreditamento dei Laboratori – National System for the accreditation of Laboratories), or through regular inspection visits aimed at ensuring the compliance of the labs itself to the reference standards. ACAE approval certification ensures equal opportunities commercialisation in all countries outside Europe where LOVAG is recognised.



The CERTIFICATES

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

- Certificate of Compliance with Standard: 61439-6 (ACAE - LOVAG)
- GOST Type-Approval (Russia) In order to obtain these recognitions, the SCP range has undergone the following type tests, as confirmation of their quality:
- EI 120 fire resistance with Fire Barrier
- IEC 60331-1 / CEI EN 50362 - Fire Resisting Test



System CONCEPT

Group synergy allows for immediate integration between busbar trunking systems, cast resin transformers and Legrand XL³ cabinets.

Cast resin transformers can be made to order with a pre-installed interface connection for the busbar trunking systems.

The cabinets XL³ can be fitted by the factory with a SCP standard board connection.

Thanks to a reinforcement kit it is possible to quickly and easily install any kind of board connection to the roof of the cabinet.

The safety and the performance of the Legrand system are guaranteed by the system approval certification, obtained following stringent tests carried out in the most important international labs.





LB PLUS

Light and Power.
The solution that
comes from above

BUSBAR FROM 25, 40 TO 63 A

LB PLUS is the range of busbars for the distribution of energy and lighting from 25 to 63 A. With **LB PLUS**, it is possible to have busbars with 10, 16, and 25 A Plugs, with a reduction of the codes of the range, increasing functionality, thanks to accessories suitable for all the versions. With **LB PLUS** the line becomes extremely flexible, with the possible to adapt the system to any development.

Range

LB PLUS has been conceived for the distribution of energy and lighting, all in one product. The main features are:

2 PRODUCT SPECIFICATIONS

LB PLUS is available in 2 versions with different profiles, to meet all the installation requirements of the customer. The Type A version (LBA) allows distance between suspension brackets up to 3 metre, while up to 7 metres are possible with the Type B versions (LBB).

PROTECTION DEGREE IP55

Once the installation of all the accessories has been completed, an IP55 protection degree is ensured. This enables **LB PLUS** to be used also in particularly demanding situations.

COMMON ACCESSORIES

All the accessories of the system (feed units, joints) are the same for both types of busbars. This ensure rationalisation of the codes.

NEW PLUGS

The range of Plugs is extremely complete. Their installation has been made even more simple and immediate, ensuring maximum security for the installer. Plugs up to 25 A with clamp contacts are available.

CAPTIVE SHUTTERS

The busbars are fitted with captive hinged shutter, which prevents their misplacement during the installation stages.

Operating flexibility

The construction characteristics of this busbar system make it possible for it to be used in a wide range of solutions, from small/medium service sector applications (offices, hotels, sports establishments, shopping centres), up to industrial dwellings (factories, workshops, production plants, ...)



Illumination with LB PLUS

The **LB PLUS** system is suitable for many types of room lighting lamps. By using the many Plugs available, it is possible to power the lamps or the electric users distributed along the system.



MALL AND SUPERMARKETS



OFFICES



WAREHOUSES



HOSPITALS



BRACKETS

- Ceiling or wall installation
- Can be positioned anywhere on straight length, even over unused tap-off outlets



NEW TAP-OFF PLUGS

- Can be moved when the bar is energised
- With spring clamp contacts
- Self-extinguishing plastic components
- IP55 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

SIMPLIFIED INSTALLATION FOR INCREASED PERFORMANCE



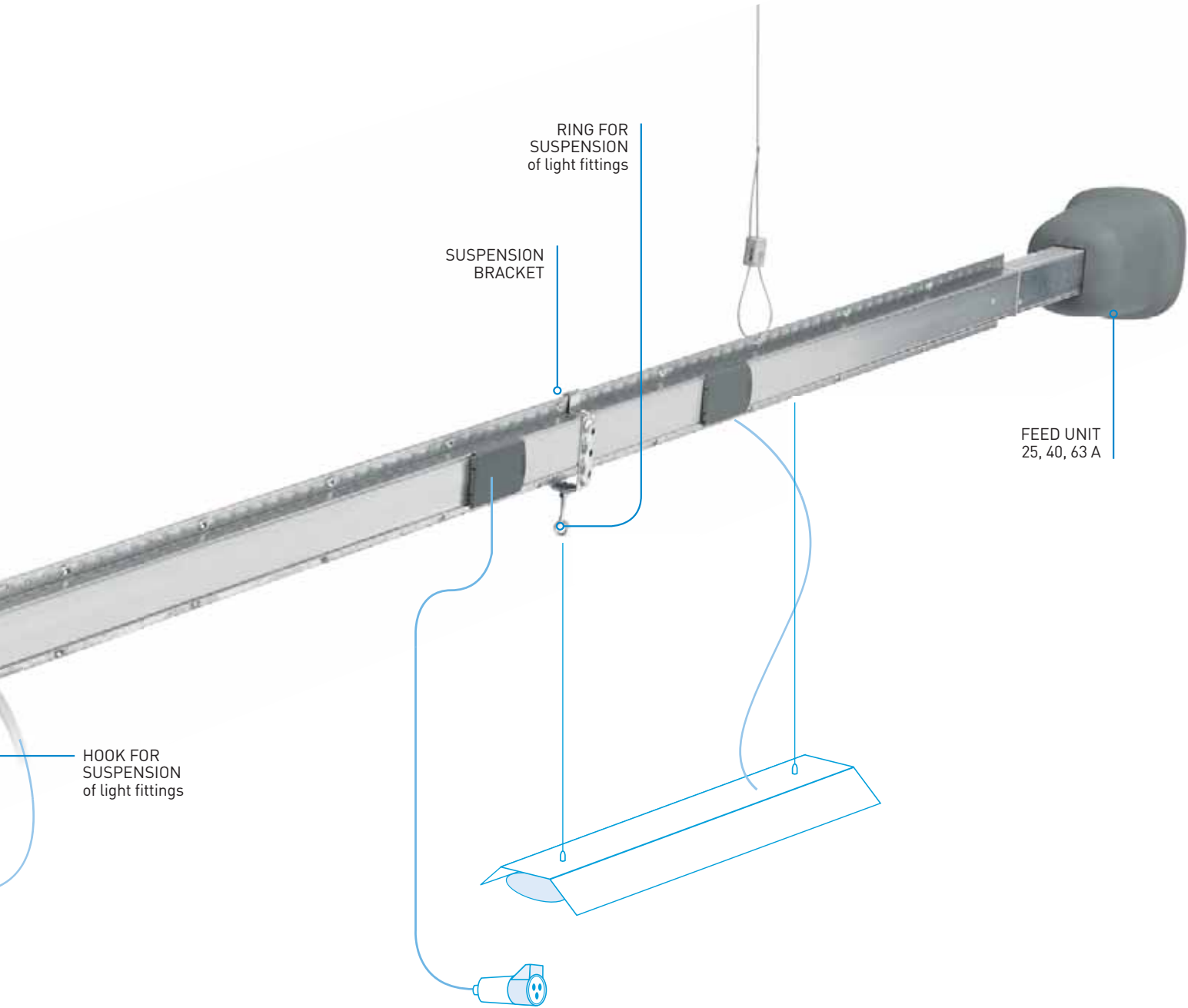
SUSPENSION CABLE

TAP-OFF PLUGS up to 25 A, with spring clamp contacts

PLUG-OUTLET COVER IP55
hinged and unlosable

End cover IP55

- Plug-outlet covers, hinged and unlosable covering the tap-off outlets
- Feed units and end covers in one part number
- Plugs identified by colours and fitted with spring clamp contacts
- Fool proof plug installation with positioning pin
- Degree of impact-resistance IK 07
- Degree of protection IP55



| | | 252 | 254 - 404 | 256 | 258 - 408 | 634 |
|--------|---------|---------------------|------------------------|---------------------|------------------------|---------------------|
| | LB PLUS | 2 conductors 25A | 4 conductors 25-40A | 6 conductors 25A | 8 conductors 25-40A | 4 conductors 63A |
| TYPE A | | | | | | |
| TYPE B | | | | | | |

LB PLUS

In= 25-40-63A

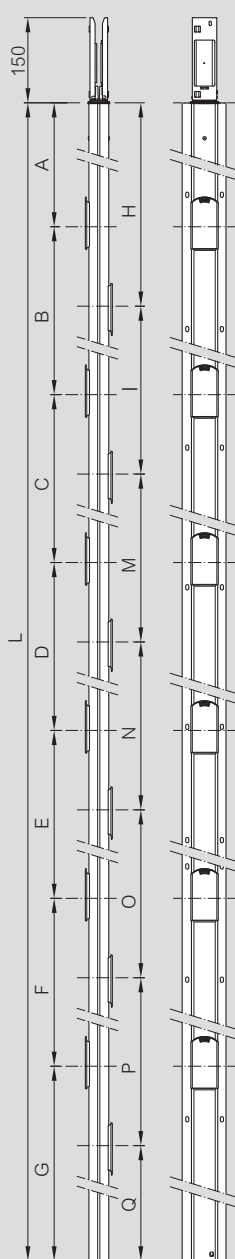


| Cat.Nos | Straight elements type A (LBA) | | | | | |
|----------|--------------------------------|--------|------------|------------|---------|-------------|
| | Type | In (A) | Lenght (m) | Conductors | Outlets | Weight (kg) |
| 75150101 | LBA252 | 25 | 3 | 2 | 2 | 3,0 |
| 75160101 | LBA254 | | | 4 | 2 | 3,1 |
| 75160102 | | | | | 4 | 3,2 |
| 75160104 | | | | | 3 | 3,1 |
| 75170101 | LBA256 | 25 | 3 | 6 | 2+2 | 3,7 |
| 75180101 | LBA258 | | | 8 | 2+2 | 3,8 |
| 75180102 | | | | | 4+4 | 3,9 |
| 75180104 | | | | | 3+3 | 3,9 |
| 75200101 | LBA404 | 40 | 3 | 4 | 2 | 3,6 |
| 75200102 | | | | | 4 | 3,7 |
| 75200104 | | | | | 3 | 3,7 |
| 75200111 | | | | | 2 | 2,0 |
| 75220101 | LBA408 | 40 | 3 | 8 | 2+2 | 4,7 |
| 75220102 | | | | | 4+4 | 4,8 |
| 75220104 | | | | | 3+3 | 4,8 |
| 75220111 | | | | | 1+1 | 2,5 |
| 75240101 | LBA634 | 63 | 3 | 4 | 2+2 | 4,7 |
| 75240102 | | | | | 4+4 | 4,8 |
| 75240104 | | | | | 3+3 | 4,8 |
| 75240111 | | | | | 1+1 | 2,5 |

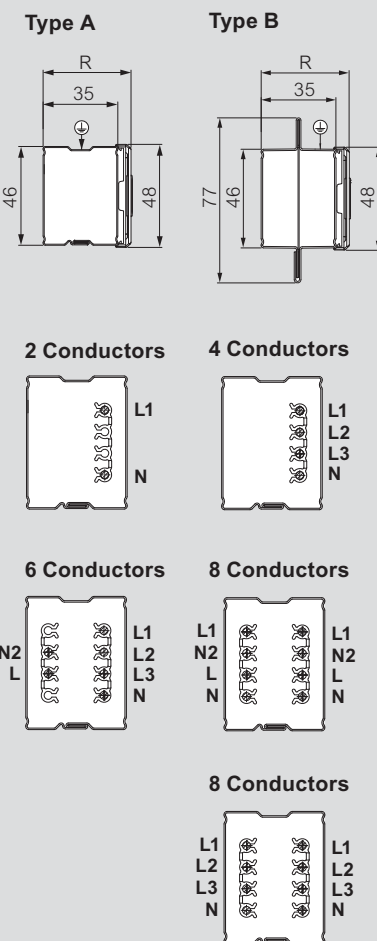
| | Straight elements type B (LBB) | | | | | |
|-----------|--------------------------------|--------|------------|------------|---------|-------------|
| | Type | In (A) | Lenght (m) | Conductors | Outlets | Weight (kg) |
| 75350102H | LBB252 | 25 | 3 | 2 | 4 | 5,5 |
| 75350104H | | | | | 3 | 5,5 |
| 75360102H | LBB254 | | | 4 | 4 | 5,6 |
| 75360103H | | | | | 6 | 5,6 |
| 75360104H | LBB256 | | | 6 | 3 | 5,6 |
| 75370101H | | | | | 4+4 | 6,1 |
| 75370104H | | | | | 3+3 | 6,1 |
| 75380101H | | | | | 4+4 | 6,2 |
| 75380102H | LBB258 | | | 8 | 6+6 | 6,35 |
| 75380104H | | | | | 3+3 | 6,2 |
| 75400102H | LBB404 | | | 4 | 4 | 6,0 |
| 75400103H | | | | | 6 | 6,1 |
| 75400104H | | 3 | 6,0 | | | |
| 75400111H | LBB408 | 40 | 1,5 | 2 | 3,2 | |
| 75420101H | | | 8 | 3 | 4+4 | 7,1 |
| 75420102H | | | | | 6+6 | 7,3 |
| 75420104H | | | | | 3+3 | 7,1 |
| 75420111H | 1+1 | 3,7 | | | | |
| 75440101H | LBB634 | 63 | 4 | 4+4 | 7,1 | |
| 75440102H | | | | 6+6 | 7,3 | |
| 75440104H | | | | 3+3 | 7,1 | |
| 75440111H | | | | 1+1 | 3,7 | |

Finishes: LB PLUS type A (LBA) available on request in painted version
 LB PLUS type B (LBB) available on request in painted or stainless steel version
 Stainless steel version available from first part of 2015

Dimensional data



In compliance with standard IEC 61439-6
 Degree of Protection IP55
 Impact resistance IK07
 Rated current In 25-40-63 A
 Straight lengths material:
 LB plus - TYPE A Galvanised steel, thickness 0,45 mm
 LB plus - TYPE B Reinforced galvanised steel, thickness 0,65 mm



| | TYPE A (LBA) | | | | | | | | TYPE B (LBB) | | | | | | | |
|---|---------------------|------|------|------|----------------------|------|------|------|---------------------|------|------|------|----------------------|------|------|------|
| | Outlets (on 1 side) | | | | Outlets (on 2 sides) | | | | Outlets (on 1 side) | | | | Outlets (on 2 sides) | | | |
| | 2 | 2 | 3 | 4 | 1+1 | 2+2 | 3+3 | 4+4 | 2 | 3 | 4 | 6 | 1+1 | 3+3 | 4+4 | 6+6 |
| L | 1500 | 3000 | 3000 | 3000 | 1500 | 3000 | 3000 | 3000 | 1500 | 3000 | 3000 | 3000 | 1500 | 3000 | 3000 | 3000 |
| A | 255 | 1155 | 705 | 705 | 255 | 1155 | 705 | 705 | 255 | 705 | 705 | 255 | 255 | 705 | 705 | 255 |
| B | 900 | 1350 | 900 | 450 | - | 1350 | 900 | 450 | 900 | 900 | 450 | 450 | - | 900 | 450 | 450 |
| C | - | - | 900 | 900 | - | 900 | 900 | - | 900 | 900 | 450 | 450 | - | 900 | 900 | 450 |
| D | - | - | - | 450 | - | - | 450 | - | - | 450 | 450 | 450 | - | - | 450 | 450 |
| E | - | - | - | - | - | - | - | - | - | - | 450 | - | - | - | - | 450 |
| F | - | - | - | - | - | - | - | - | - | - | 450 | - | - | - | - | 450 |
| G | 345 | 495 | 495 | 495 | 1245 | 495 | 495 | 495 | 345 | 495 | 495 | 495 | 1245 | 495 | 495 | 495 |
| H | - | - | - | - | 1145 | 1295 | 395 | 845 | - | - | - | - | 1145 | 395 | 845 | 395 |
| I | - | - | - | - | - | 1350 | 900 | 450 | - | - | - | - | - | 900 | 450 | 450 |
| M | - | - | - | - | - | 900 | 900 | - | - | - | - | - | - | 900 | 900 | 450 |
| N | - | - | - | - | - | - | 450 | - | - | - | - | - | - | - | 450 | 450 |
| O | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 450 |
| P | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 450 |
| Q | - | - | - | - | 355 | 355 | 805 | 355 | - | - | - | - | 355 | 805 | 355 | 355 |
| R | 41 | 41 | 41 | 41 | 47 | 47 | 47 | 47 | 41 | 41 | 41 | 41 | 47 | 47 | 47 | 47 |

Dimensional data in mm

Red codes: new items

LB PLUS

In= 25-40-63A



| Cat.Nos | Feed unit | | | | |
|-----------|---|------------|------------------------------------|-------------------------------------|-----|
| | Allows you to electrically power the LB PLUS line through a cable line. With clamps for connection to rigid of flexible copper cables, and cable terminal. The end feed units include the corresponding end cover. Right feed unit + right end cover. Left feed unit + left end cover. The centre feed unit 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. | | | | |
| | In (A) | Conductors | Description | Weight (kg) | |
| 75161001 | 25 | 4 | Feed unit RH + end cover RH | 0,45 | |
| 75161002 | | | Feed unit LH + end cover LH | 0,85 | |
| 75201001 | 40 | 4 | Feed unit RH + end cover RH | 0,85 | |
| 75201002 | | | Feed unit LH + end cover LH | 1,2 | |
| 75201151* | | | Intermediate feed unit | 3,7 | |
| 75201003 | | | Reduced feed unit RH+ end cover RH | 0,8 | |
| 75201004 | | | Reduced feed unit LH+ end cover LH | 1,0 | |
| 75221001 | | | Feed unit RH + end cover RH | 0,9 | |
| 75221002 | | | Feed unit LH + end cover LH | 1,2 | |
| 75221151* | | | 8 | Intermediate feed unit | 4,4 |
| 75221003 | | | | Reduced feed unit RH + end cover RH | 0,9 |
| 75221004 | | | | Reduced feed unit LH+ end cover LH | 1,2 |
| 75241001 | 63 | 4 | | Feed unit RH + end cover RH | 0,9 |
| 75241002 | | | Feed unit LH + end cover LH | 1,2 | |
| 75241151* | | | Intermediate feed unit | 2,7 | |
| 75241003 | | | Reduced Feed unit RH+end cover RH | 0,8 | |
| 75241004 | | | Reduced Feed unit LH+end cover LH | 1,1 | |

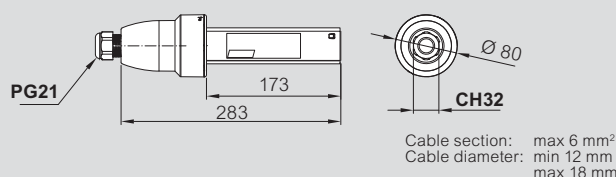
| Flexible joint | | | Weight (kg) |
|----------------|---|--|-------------|
| 75201261 | version 25/40 A at 4 conductors | | 2,0 |
| 75221261 | version 25/40 A at 8 conductors | | 3,1 |
| 75241261 | version 63 A at 4 conductors | | 2,5 |
| 75201263 | reduced version 25/40 A at 4 conductors | | 2,0 |
| 75221263 | reduced version 25/40 A at 8 conductors | | 3,1 |
| 75241263 | reduced version 63 A at 4 conductors | | 2,5 |

* For every intermediate feed unit are included end covers (RH+LH)

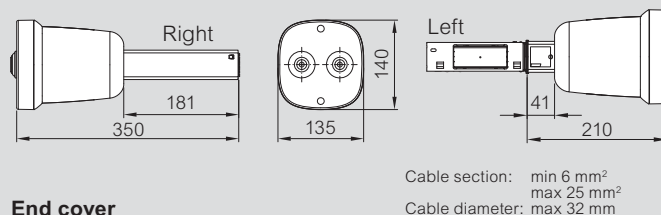
Red codes: new items in this page are available from second part of 2015

Dimensional data

Feed unit 254

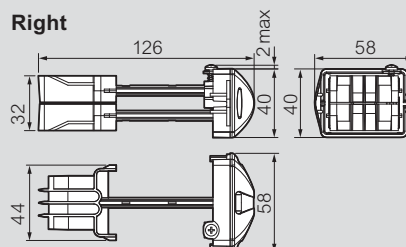


Feed unit 404 / 408 / 634

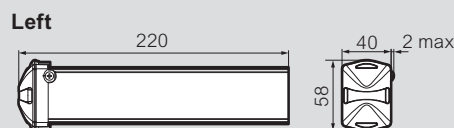


End cover

Right

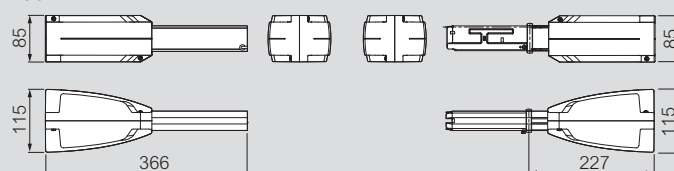


Left

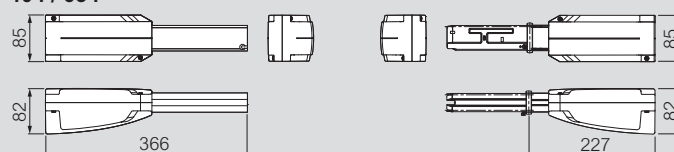


Reduced feed unit** 40/63 A

408



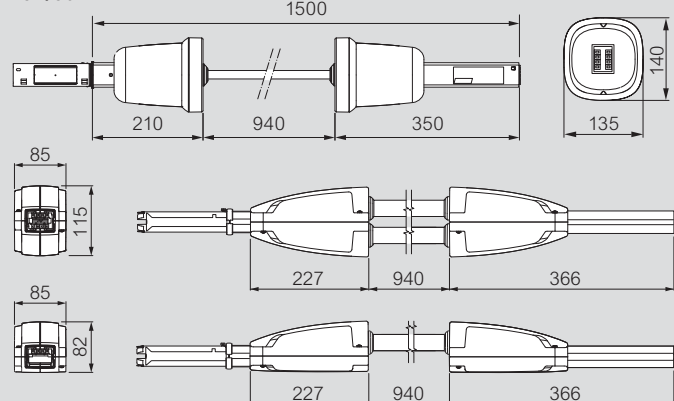
404 / 634



** Reduced feed unit is available from 06-2015

Flexible joint 404 / 408 / 634

404/634



LB PLUS

plugs

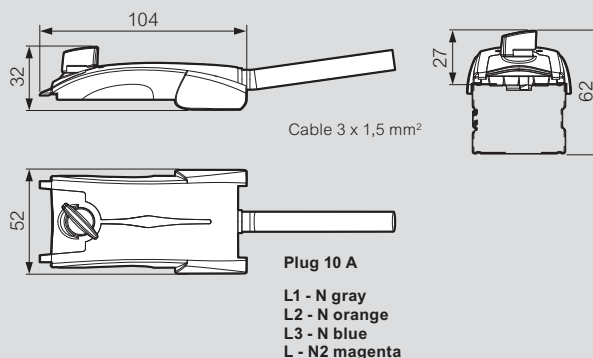


Material Self extinguishing plastic: IEC 60695-2-12 glow wire test and V0 according to UL94. Ratings In 10-16-25 A.

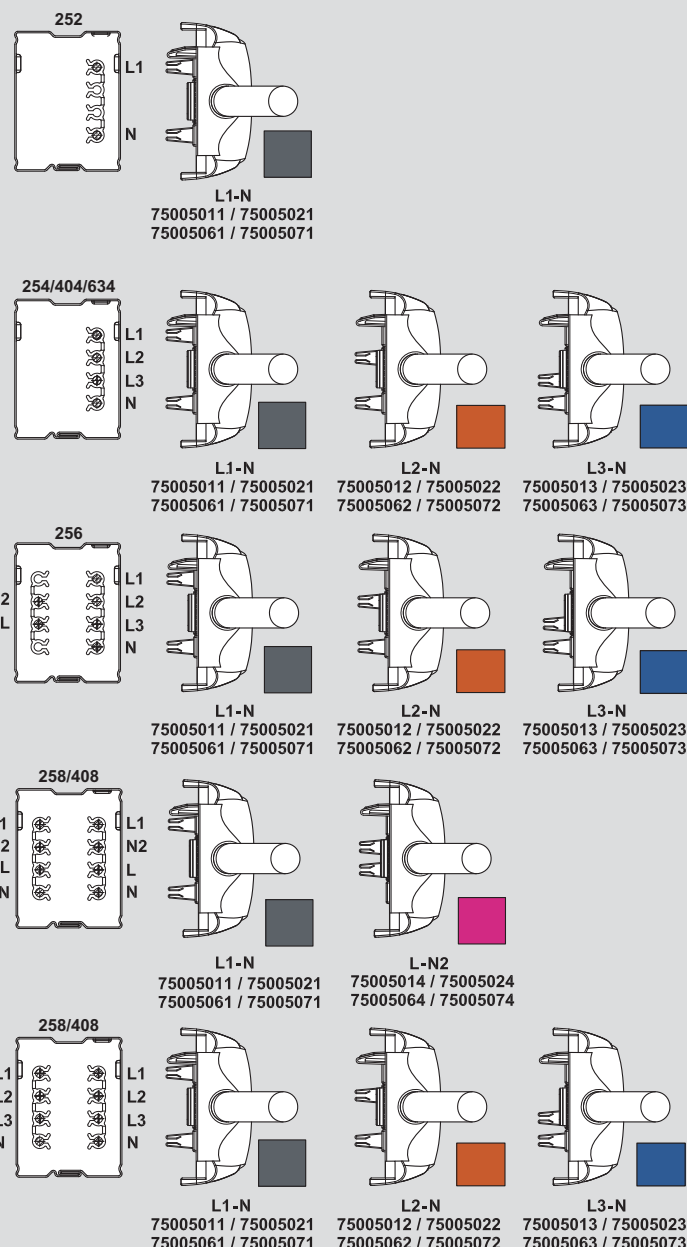
| Cat.Nos | Single-phase Plugs with fixed phase | Weight (kg) |
|----------|--------------------------------------|-------------|
| 75005011 | Plug 10 A with cable 1 m L1-N H05VVF | 0,16 |
| 75005012 | Plug 10 A with cable 1 m L2-N H05VVF | |
| 75005013 | Plug 10 A with cable 1 m L3-N H05VVF | |
| 75005014 | Plug 10 A with cable 1 m L-N2 H05VVF | |
| 75005021 | Plug 10 A with cable 3 m L1-N H05VVF | 0,38 |
| 75005022 | Plug 10 A with cable 3 m L2-N H05VVF | |
| 75005023 | Plug 10 A with cable 3 m L3-N H05VVF | |
| 75005024 | Plug 10 A with cable 3 m L-N2 H05VVF | |
| 75005061 | Plug 10 A with cable 1 m L1-N FG7OM1 | 0,2 |
| 75005062 | Plug 10 A with cable 1 m L2-N FG7OM1 | |
| 75005063 | Plug 10 A with cable 1 m L3-N FG7OM1 | |
| 75005064 | Plug 10 A with cable 1 m L-N2 FG7OM1 | |
| 75005071 | Plug 10 A with cable 3 m L1-N FG7OM1 | 0,48 |
| 75005072 | Plug 10 A with cable 3 m L2-N FG7OM1 | |
| 75005073 | Plug 10 A with cable 3 m L3-N FG7OM1 | |
| 75005074 | Plug 10 A with cable 3 m L-N2 FG7OM1 | |

Dimensional data

Plug 10 A



Example of installation



LB PLUS

plugs



75005000

75007005

Cat.Nos Plugs with selection phase

| Cat.Nos | | Weight (kg) |
|-----------|---|-------------|
| 75005000 | Plug 16A phase selection | 0,12 |
| 75005100 | Plug 16A + 1x(5x20 - 6,3 A) fuse included | 0,13 |
| 75005200* | Plug 16A + 1x(CH8) | 0,13 |
| 75005220* | Plug 16A + 1x(CH8) + cable 3m H05VVF | 0,64 |
| 75005270* | Plug 16A + 1x(CH8) + cable 3m FG7OM1 | 0,68 |

Plugs three-phases

| | | Weight (kg) |
|-----------|--|-------------|
| 75005005 | Plug 16 A Three-phase Plug | 0,13 |
| 75007005 | 25 A Three-phase Plug | 0,12 |
| 75007205* | 25 A Three-phase Plug with CH8 fuse | 0,12 |
| 75007206* | 25 A Three-phase Plug + fuse CH8 + 4 Din box | 0,63 |
| 75007207 | 25 A Three-phase Plug with 8 Din box | 0,80 |
| 75007006 | 25 A Three-phase Plug with 4 Din box | 0,63 |

Accessories

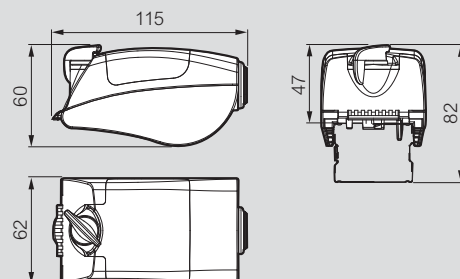
| | |
|----------|---|
| 75105000 | mobile contact 16 A |
| 75105001 | kit for the plug coding (it consists of 10 black codes for right side plugs and 10 grey codes for left side plugs and identification stickers). |

For more details, please look the INSTRUCTION SHEETS

* Fuses not included

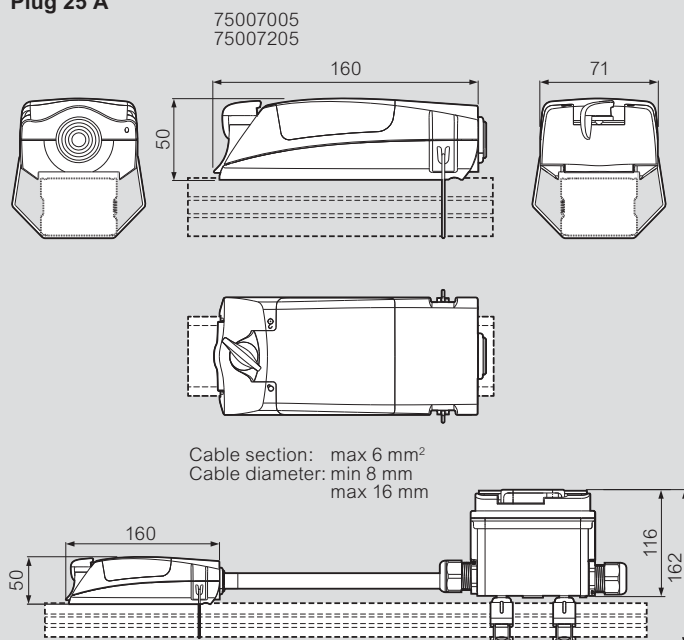
Accessories dimensions

Plug 16 A

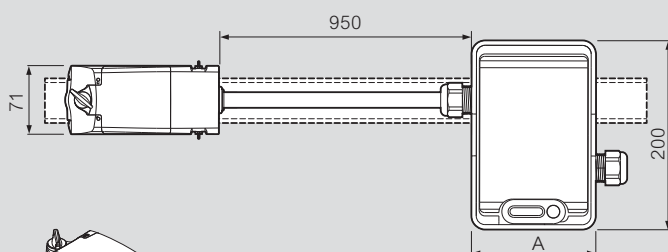


CABLE SECTION: MIN 1,5 mm²
MAX 2,5 mm²
CABLE DIAMETER: MIN 8 mm
MAX 13 mm

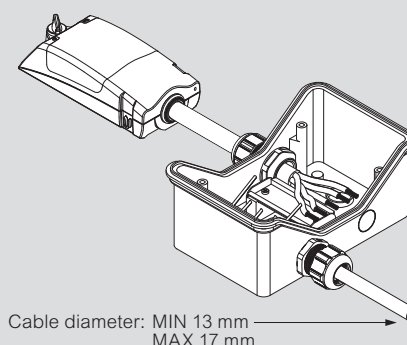
Plug 25 A



Cable section: max 6 mm²
Cable diameter: min 8 mm
max 16 mm



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



The item code 75005000 is delivered with 2 mobile contacts 75105000 adding 2 more mobile contacts 75105000 permits to become the three-phase plug item 75005005.

Red codes: new items

LB PLUS

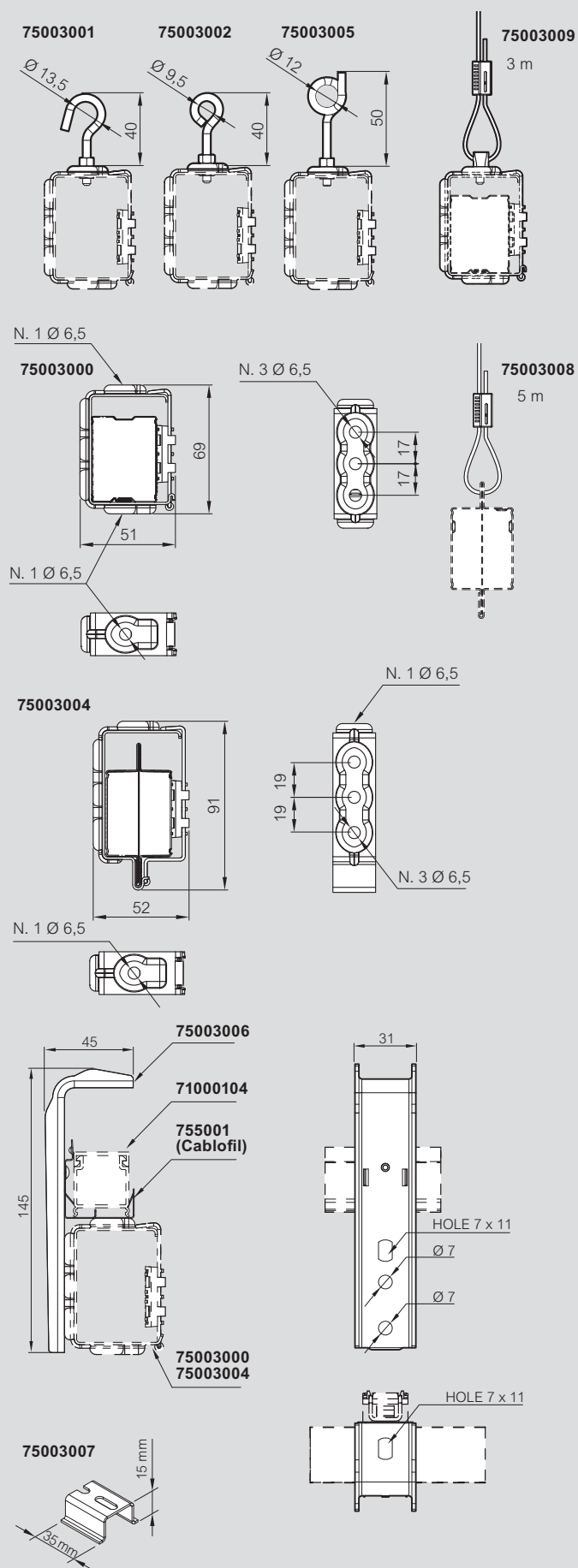
fixing support



Codes 75003001-2-5 must always be used with brackets 75003000 or 75003004, depending on the TYPE of busbar. Item 75003006 must always be used with brackets 75003000 or 75003004 and cable channel 71000104. Bracket 75003000 can be used for the suspension of the line and the suspension of lighting bodies at the same time, while bracket 75003004 may only perform one of the two functions at customer's discretion, depending on its rotation.

| Cat.Nos | Brackets | Weight (kg) |
|----------|---|-------------|
| 75003000 | 60 kg suspension bracket (type A) | 0,045 |
| 75003004 | 60 kg suspension bracket (type B) | 0,045 |
| 75003001 | hook for lamp | 0,015 |
| 75003002 | ring | 0,015 |
| 75003005 | pigtail for chain | 0,015 |
| 75003006 | bracket for cable channel | 0,135 |
| 75003008 | 5 m steel cable with self locking clamp | 0,085 |
| 75003009 | Plug bracket with 3 m steel cable | 0,050 |
| 75003007 | spacer on brackets for floor installation | 0,040 |

Fixing support



LB PLUS

fixing support

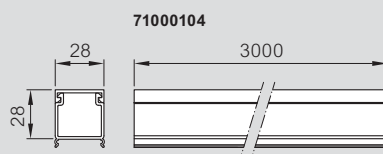


71000104

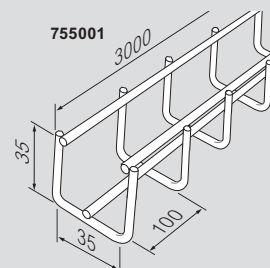
| Cat.Nos | Accessories | Weight (kg) |
|----------|---|-------------|
| 71000104 | PVC cable channel with cover (length 3 m) | 0,884 |
| 755001 | Cablofil steel wire cable tray (length 3 m) | 1,5 |

ACCESSORIES

PVC cable channel



CABLOFIL cable tray



TECHNICAL INFORMATION - CHOICE OF THE BRACKETS

INSTALLATION METHODS

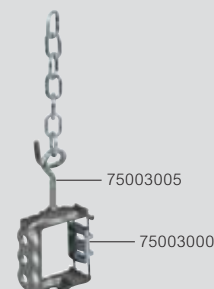
For the suspension of the line and the lighting bodies, the brackets must be fitted with a range of appropriate accessories, which must be defined at the moment of the order.

CEILING SUSPENSION OF THE LINE

LB plus - Type A (LBA)

PIGTAIL + CHAIN

This solution is possible by ordering suspension bracket item 75003000 and accessory 75003005, preset for the connection of a chain.



PLUG + CABLE BRACKET

This solution is already supplied as a kit (item 75003009), consisting of a plug bracket and a 3 m steel cable.



LB PLUS - TYPE B (LBB)

CABLE 5 m

This accessory (item 75003008) gives the possibility of suspending the straight element reinforcing busbar using the slots along the reinforcement plate of the straight elements.



SUSPENSION OF LIGHTING ELEMENTS

LB PLUS - Type A and B

For the suspension of lighting elements simply order hooks 75003001 or rings 75003002. These accessories can be installed on the brackets used for the suspension of the ceiling line (item 75003000 and 75003004).



LB PLUS

quick seletion table

| | 252 | 254 | 404 | 256 | 258 | 408 | 634 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| LB PLUS STRAIGHT LENGTHS - TYPE A | | | | | | | |
| 3m length - 2 outlets (2+2 outlets) | 75150101 | 75160101 | 75200101 | 75170101 | 75180101 | 75220101 | 75240101 |
| 3m length - 3 outlets (3+3 outlets) | 75160104 | 75160104 | 75200104 | 75180104 | 75180104 | 75220104 | 75240104 |
| 3m length - 4 outlets (4+4 outlets) | 75160102 | 75160102 | 75200102 | 75180102 | 75180102 | 75220102 | 75240102 |
| 1.5m length - 2 outlets (1+1 outlets) | 75200111 | 75200111 | 75200111 | 75220111 | 75220111 | 75220111 | 75240111 |
| LB PLUS STRAIGHT LENGTHS - TYPE B | | | | | | | |
| 3m length - 3 outlets (3+3 outlets) | 75350104H | 75360104H | 75400104H | 75370104H | 75380104H | 75420104H | 75440104H |
| 3m length - 4 outlets (4+4 outlets) | 75350102H | 75360102H | 75400102H | 75370101H | 75380101H | 75420101H | 75440101H |
| 3m length - 6 outlets (6+6 outlets) | 75360103H | 75360103H | 75400103H | 75380102H | 75380102H | 75420102H | 75440102H |
| 1.5m length - 2 outlets (1+1 outlets) | 75400111H | 75400111H | 75400111H | 75420111H | 75420111H | 75420111H | 75440111H |
| FEED UNITS | | | | | | | |
| RH feed unit + RH end cover | 75161001 | 75161001 | 75201001 | 75221001 | 75221001 | 75221001 | 75241001 |
| LH feed unit + LH end cover | 75201002 | 75201002 | 75201002 | 75221002 | 75221002 | 75221002 | 75241002 |
| Intermediate feed unit | 75201151 | 75201151 | 75201151 | 75221151 | 75221151 | 75221151 | 75241151 |
| Reduced feed unit RH+ end cover RH** | 75201003 | 75201003 | 75201003 | 75201003 | 75221003 | 75221003 | 75241003 |
| Reduced feed unit LH+ end cover LH** | 75201004 | 75201004 | 75201004 | 75201004 | 75221004 | 75221004 | 75241004 |
| TRUNKING COMPONENTS | | | | | | | |
| Flexible joint | 75201261 | 75201261 | 75201261 | 75221261 | 75221261 | 75221261 | 75241261 |
| Reduced flexible joint** | 75201263 | 75201263 | 75201263 | 75221263 | 75221263 | 75221263 | 75241263 |
| FIXED PHASE SINGLE PHASE TAP-OFF PLUGS (10 A) | | | | | | | |
| 10 A plug with 1 m cable - L1-N H05VVF | 75005011 | 75005011 | 75005011 | 75005011 | 75005011 | 75005011 | 75005011 |
| 10 A plug with 1 m cable - L2-N H05VVF | - | 75005012 | 75005012 | 75005012 | 75005012 | 75005012 | 75005012 |
| 10 A plug with 1 m cable - L3-N H05VVF | - | 75005013 | 75005013 | 75005013 | 75005013 | 75005013 | 75005013 |
| 10 A plug with 1 m cable - L-N2 H05VVF | - | 75005014 | 75005014 | 75005014 | 75005014 | 75005014 | 75005014 |
| 10 A plug with 3 m cable - L1-N H05VVF | 75005021 | 75005021 | 75005021 | 75005021 | 75005021 | 75005021 | 75005021 |
| 10 A plug with 3 m cable - L2-N H05VVF | - | 75005022 | 75005022 | 75005022 | 75005022 | 75005022 | 75005022 |
| 10 A plug with 3 m cable - L3-N H05VVF | - | 75005023 | 75005023 | 75005023 | 75005023 | 75005023 | 75005023 |
| 10 A plug with 3 m cable - L-N2 H05VVF | - | 75005024 | 75005024 | 75005024 | 75005024 | 75005024 | 75005024 |
| 10 A plug with 1 m cable - L1-N FG7OM1 | 75005061 | 75005061 | 75005061 | 75005061 | 75005061 | 75005061 | 75005061 |
| 10 A plug with 1 m cable - L2-N FG7OM1 | - | 75005062 | 75005062 | 75005062 | 75005062 | 75005062 | 75005062 |
| 10 A plug with 1 m cable - L3-N FG7OM1 | - | 75005063 | 75005063 | 75005063 | 75005063 | 75005063 | 75005063 |
| 10 A plug with 1 m cable - L-N2 FG7OM1 | - | 75005064 | 75005064 | 75005064 | 75005064 | 75005064 | 75005064 |
| 10 A plug with 3 m cable - L1-N FG7OM1 | 75005071 | 75005071 | 75005071 | 75005071 | 75005071 | 75005071 | 75005071 |
| 10 A plug with 3 m cable - L2-N FG7OM1 | - | 75005072 | 75005072 | 75005072 | 75005072 | 75005072 | 75005072 |
| 10 A plug with 3 m cable - L3-N FG7OM1 | - | 75005073 | 75005073 | 75005073 | 75005073 | 75005073 | 75005073 |
| 10 A plug with 3 m cable - L-N2 FG7OM1 | - | 75005074 | 75005074 | 75005074 | 75005074 | 75005074 | 75005074 |
| PHASE SELECTION TAP-OFF PLUGS (16 A) | | | | | | | |
| 16 A plug phase selection | 75005000 | 75005000 | 75005000 | 75005000 | 75005000 | 75005000 | 75005000 |
| 16 A plug + 1x(5x20 - 6,3A) Fuses included | 75005100 | 75005100 | 75005100 | 75005100 | 75005100 | 75005100 | 75005100 |
| 16 A plug + 1x(CH8) | 75005200 | 75005200 | 75005200 | 75005200 | 75005200 | 75005200 | 75005200 |
| 16 A plug + 1x(CH8) + 3 m cable H05VVF* | 75005220 | 75005220 | 75005220 | 75005220 | 75005220 | 75005220 | 75005220 |
| 16 A plug + 1x(CH8) + 3 m cable FG7OM1* | 75005270 | 75005270 | 75005270 | 75005270 | 75005270 | 75005270 | 75005270 |
| THREE-PHASE TAP-OFF PLUGS (16 - 25 A) | | | | | | | |
| 16 A three-phase plugs | - | 75005005 | 75005005 | 75005005 | 75005005 | 75005005 | 75005005 |
| 25 A Three-phase Plug | - | 75007005 | 75007005 | 75007005 | 75007005 | 75007005 | 75007005 |
| 25 A Three-phase Plug with CH8 fuse | - | 75007205 | 75007205 | 75007205 | 75007205 | 75007205 | 75007205 |
| 25 A Three-phase Plug + CH8 fuse + 4 Din box | - | 75007206 | 75007206 | 75007206 | 75007206 | 75007206 | 75007206 |
| 25 A Three-phase Plug with 8 Din box | - | 75007207 | 75007207 | 75007207 | 75007207 | 75007207 | 75007207 |
| 25 A Three-phase Plug with 4 Din box | - | 75007006 | 75007006 | 75007006 | 75007006 | 75007006 | 75007006 |

* Fuses not included

**Available from second part of 2015

Note: RH - Right

LH - Left

Red codes: new items

| | 252 | 254 | 404 | 256 | 258 | 408 | 634 |
|---|----------|----------|----------|----------|----------|----------|----------|
| BRACKETS | | | | | | | |
| 60 kg suspension bracket (LB plus - TYPE A) | 75003000 | 75003000 | 75003000 | 75003000 | 75003000 | 75003000 | 75003000 |
| 60 kg suspension bracket (LB plus - TYPE B) | 75003004 | 75003004 | 75003004 | 75003004 | 75003004 | 75003004 | 75003004 |
| hook for lamp | 75003001 | 75003001 | 75003001 | 75003001 | 75003001 | 75003001 | 75003001 |
| ring | 75003002 | 75003002 | 75003002 | 75003002 | 75003002 | 75003002 | 75003002 |
| pigtail for chain | 75003005 | 75003005 | 75003005 | 75003005 | 75003005 | 75003005 | 75003005 |
| bracket for cable channel | 75003006 | 75003006 | 75003006 | 75003006 | 75003006 | 75003006 | 75003006 |
| 5m steel cable with self locking clamp | 75003008 | 75003008 | 75003008 | 75003008 | 75003008 | 75003008 | 75003008 |
| bracket with 3 m steel cable | 75003009 | 75003009 | 75003009 | 75003009 | 75003009 | 75003009 | 75003009 |
| spacer on brackets for floor installation | 75003007 | 75003007 | 75003007 | 75003007 | 75003007 | 75003007 | 75003007 |
| ACCESSORIES | | | | | | | |
| 16A mobile contact | - | 75105000 | 75105000 | 75105000 | 75105000 | 75105000 | 75105000 |
| window kit code | - | - | - | 75105001 | 75105001 | 75105001 | 75105001 |
| cable channel | 71000104 | 71000104 | 71000104 | 71000104 | 71000104 | 71000104 | 71000104 |

technical informations/specification

■ GENERAL FEATURES

LB PLUS can be used for supplying power to light fittings within the service sector, advanced service sector and in most manufacturing industries and wherever it is necessary to hang very heavy accessories and It can be used for supplying power to three-phase and single-phase devices: industrial refrigerators, lathes, handheld tools, etc.

LB PLUS is extremely fast and simple to install. In addition, its flexibility can be used during the planning stage, during installation and during every day use.

LB PLUS, is subdivided in two lines of product, **Type A** and **Type B**.

The IP55 degree of protection makes it suitable for false ceiling and raised floor installations.

LB PLUS, as with all Legrand products, is fully compliant with the **CEI EN 61439-6 Harmonized Standards; specifically, the rated current of the Legrand busbar trunking systems is always rated at the average ambient temperature of 40°C** (nb.: the Standard requires 35°C), thus offering the market suitably oversized products.

■ STRAIGHT LENGTHS

Used for distributing power, suspending and powering light fittings and for supplying low-powered loads.

LB PLUS straight lengths include the following components:

A closed and ribbed section casing for Type A (thickness 0,45 mm, dimension 35x46 mm), a "beam-type" section bar "I" (septum metal separator for the emergency circuits) for Type B (thickness 0,65 mm, dimension 35,2x77 mm including fins) made of galvanized steel which also serves as a protective conductor due to its cross-section and electrical continuity.

The straight lengths are also available in a painted version with RAL colors (optional) and in Stainless Steel version only for type B.

The conductors are separated from each other by a plastic insulating sheath PVC or Blend PC (Poli Carbonat) ABS HF (Halogen free) self-extinguishing V0 (according to UL94) and in compliance with the incandescent wire test (thickness 1,6mm) as per EN 60695-2-1 (CEI 50.11).

A series of tap-off outlets to accept plug-in units are located on the busbar.

The series outlets are equipped with unlosable outlet covers, in the phase of not using it maintain closed the outlets ensuring a degree of protection IP55 and in the phase of using of outlets, the outlet covers remain in open position on duct.

An electrical joint block for automatically connecting live conductors.

The connection between two straight lengths is quick: with only one operation to make both the electrical and mechanical connection and at the same time ensures a degree of protection IP55 without the use of additional accessories.

The continuity of the protective conductor (casing) is ensured by tightening the special connection screw.

All the duct has the characteristic of NOT Propagation to the flame, according to this aspect of our Product Standard 61439-6 requires this check by referring to the standard specification IEC 60332-3.

■ FEED UNITS + END COVERS (are supplied together)

These enable the LB PLUS range to be supplied by cable; the assembly is carried out with a quick joint arrangement as with the straight lengths.

a) Feed Unit 25A 4 conductors + End Cover

Feed unit is equipped with terminals for connection with copper cables rigid or flexible accessorized with tip lugs or without it, with sections up to 6 mm².

The entrance point for the cables is located in the back of feed unit and can accept maximum a cable diameter between 12 mm and 18 mm.

b) Feed Unit 40 A – 63 A + End Cover

Feed unit is equipped with terminals for connection with copper cables rigid or flexible accessorized with tip lugs or without it, with sections from 6 mm² to 25 mm².

Inside feed unit there's a small bridge gland cable anti-tearing.

The entrance point for the cables is located in the back of feed unit and can accept maximum a cable diameter till to 32 mm.

End covers ensure the IP55 degree of protection at the end of the run. Two versions are supplied, depending on the end feed unit used at the start of the run:

- the right (RH) end feed unit requires the use of a right (RH) end cover
- the left (LH) end feed unit requires a left (LH) end cover

■ FIXING SUPPORTS

In order to fix the run to the structure of the building, directly or with a steel chain, it is necessary to use a set of special components to achieve any type of suspension:

• bracket Type A:

allows a mounting of the duct to the ceiling and wall of a building, will be provided together with the spacer, which is to be removed when the bracket is inserted above the outlet.

The brackets could be mounted everywhere on the busbar, also in front of an outlet maintaining the IP55 degree of protection of the outlet

• bracket Type B:

allows a mounting of the duct to the ceiling and wall of a building, will be provided together with the spacer, which is to be removed when the bracket is inserted above the outlet.

The brackets could be mounted everywhere on the busbar, also in front of an outlet maintaining the IP55 degree of protection of the outlet

• methods of suspension

1. Suspension with the cable
2. The ring + The hook for light
3. Pigtail for chain
4. The hook

■ TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Legrand is able to offer different technical solutions:

- flexible joint:** used for changing direction or to avoid possible obstacles along the busbar run.
They have the same quick joint connection as the straight lengths. Similarly, they give a mechanical connection and an IP55 degree of protection with just one operation. The continuity of the protective conductor, made from the casing of the element itself, is ensured by tightening the special connection screw.
- cable channel with cover:** this accessory can be placed over the top of the busbar; it can be used to distribute auxiliary circuits, if any, and it is integral with the busbar using a suspension bracket for cable channel. The channel is 3 m long. Its dimensions are 28x28 mm.
- Cable tray (Cablofil):** this accessory is positioned in the upper part of the duct, it is useful to distribute auxiliary circuits and is integral with the duct through the use of an accessory for suspension. The cable tray is 3 m long and has dimensions of 35x35 mm.
- centre feed unit:** feeds the busbar trunking system from an intermediate point along the run, hence reducing the voltage drop at the end of the line and/or to simplify the installation when the power supply is near the middle of the run..

■ PLUG-IN UNITS

These are used for connecting, supplying light fittings and small single-phase and three-phase loads. They include the following features:

- the contacts of the phases are **clamp contacts**
- **they can be operated when energized;**
- the PE contact (protective conductor) is the first to make an electrical connection when plugged into the outlet, and the last to disconnect when unplugged;
- all insulating plastic components are in compliance with the incandescent wire test (EN 60695-2-1) and have a V0 self-extinguishing degree (UL94);
- the standard degree of protection is IP55 without using additional IP protection kits;
- the plugs could be encoded, which means that the plug installed on one side of the busbar cannot be installed on the other side due to a **pin consensus** (sold as accessory) without this one, the plugs can be mounted indistinctly on both side of duct;
- with this simple component, we can have a block for maximum mechanical security

The plug-in units are common for all offer LB PLUS, these include:

- 10 A fixed phase selection plug-in units**, pre-wired with 1 m, 3 m of FG70M1 and H05VV-F 3 x 1,5 mm² cable;
- 16 A phase selection plug-in units – single phase**, with automatic terminals (without bolts) for connecting a L+N+PE cable;
- 16 A phase selection plug-in units – single phase** with a **5x20 CH8** cylindrical ceramic with automatic terminals (without bolts) for connecting a L+N+PE cable;
- 16 A three-phase plug-in units**, with automatic terminals (without bolts) for connecting a 3L+N+PE cable.
- 25 A three-phase plug-in units**, with bolt terminals for connecting a 3L+N+PE cable;
- 25 A three-phase plug-in units**, with the set of three fuse holder cylindrical type CH8, with terminals (with bolts) for connecting a 3L+N+PE cable.
- 25 A three-phase plug-in units**, with Box with 4 or 8 DIN.

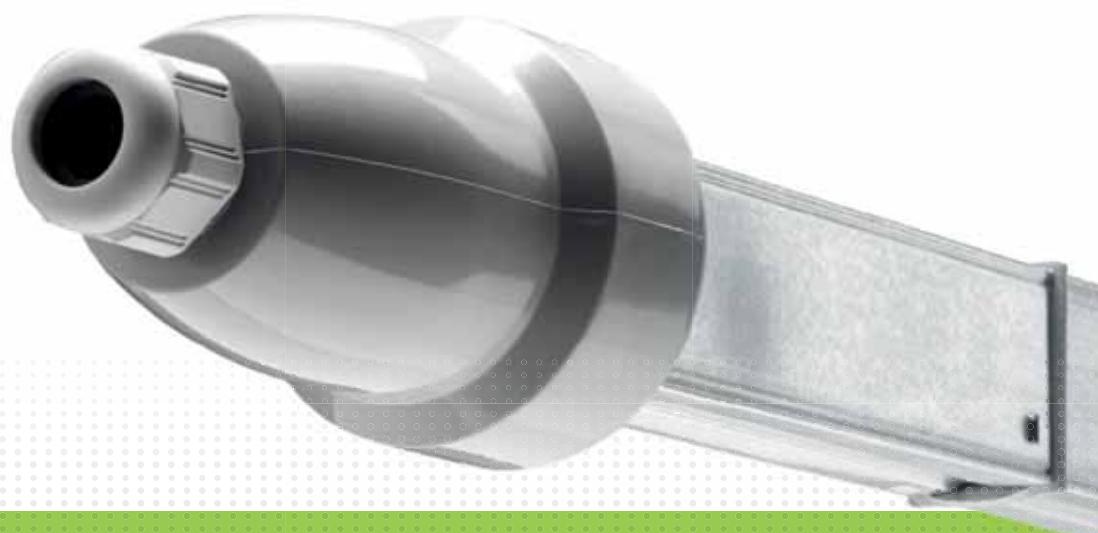
LB PLUS

technical data

| | | | LB PLUS TYPE A (LBA) | | | | | | | LB PLUS TYPE B (LBB) | | | | | | |
|---|--|---------------------------------------|----------------------|---------|---------|---------|-----------|-----------|---------|----------------------|---------|---------|---------|-----------|-----------|-----------|
| | | | 252 | 254 | 256 | 258 | 404 | 408 | 634 | 252 | 254 | 256 | 258 | 404 | 408 | 634 |
| Number of live conductors | | | 2 | 4 | 6 | 8 | 4 | 8 | 4 | 2 | 4 | 6 | 8 | 4 | 8 | 4 |
| Overall dimension of the busbars | LxH | [mm] | 35x46,3 | 35x46,3 | 35x46,3 | 35x46,3 | 35,2x77,5 | 35,2x77,5 | 35x46,3 | 35x46,3 | 35x46,3 | 35x46,3 | 35x46,3 | 35,2x77,5 | 35,2x77,5 | 35,2x77,5 |
| Rated current | I _n | [A] | 25 | 25 | 25 | 25 | 40 | 40 | 63 | 25 | 25 | 25 | 25 | 40 | 40 | 63 |
| Operational voltage | U _e | [V] | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Insulational voltage | U _i | [V] | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Frequency | f | [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (0,1 s) | ICW | [kArms] | 2,2 | 2,2 | 2,2 | 2,2 | 2,7 | 2,7 | 2,7 | 2,5 | 2,5 | 2,5 | 2,5 | 3,2 | 3,2 | 3,2 |
| Singlephase Peak current | I _{pk} | [kA] | 4,4 | 4,4 | 4,4 | 4,4 | 5,4 | 5,4 | 5,4 | 5,0 | 5,0 | 5,0 | 5,0 | 6,4 | 6,4 | 6,4 |
| Thermal limit | I ² t | [A ² s x 10 ⁶] | 0,484 | 0,484 | 0,484 | 0,484 | 0,729 | 0,729 | 0,729 | 0,625 | 0,625 | 0,625 | 0,625 | 1,024 | 1,024 | 1,024 |
| Phase resistance @ 20 °C | R ₂₀ | (mΩ/m) | 4,761 | 4,761 | 4,761 | 4,761 | 4,761 | 3,190 | 3,190 | 1,595 | 4,761 | 4,761 | 4,761 | 4,761 | 3,190 | 3,190 |
| Phase resistance at thermal conditions | R _t | (mΩ/m) | 5,656 | 5,656 | 5,656 | 5,656 | 3,802 | 3,802 | 1,901 | 5,656 | 5,656 | 5,656 | 5,656 | 3,802 | 3,802 | 1,901 |
| Phase reactance @ 50 Hz | X | (mΩ/m) | 0,229 | 0,229 | 0,229 | 0,229 | 0,236 | 0,236 | 0,118 | 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 | 4,767 | 4,767 | 4,767 | 4,767 | 3,199 | 3,199 | 1,599 |
| Resistance of protective conductor (sheet) | R _{PE'} | (mΩ/m) | 1,695 | 1,695 | 1,695 | 1,695 | 1,695 | 1,695 | 1,695 | 1,195 | 1,195 | 1,195 | 1,195 | 1,195 | 1,195 | 1,195 |
| Reactance of the protective bar @50 Hz | X _{PE} | (mΩ/m) | 0,222 | 0,222 | 0,222 | 0,222 | 0,222 | 0,222 | 0,222 | 0,274 | 0,274 | 0,274 | 0,274 | 0,274 | 0,274 | 0,274 |
| Resistance of the fault loop | R _O | (mΩ/m) | 6,456 | 6,456 | 6,456 | 6,456 | 4,885 | 4,885 | 3,290 | 5,956 | 5,956 | 5,956 | 5,956 | 4,385 | 4,385 | 2,790 |
| Reactance of the fault loop | X _O | (mΩ/m) | 0,451 | 0,451 | 0,451 | 0,451 | 0,458 | 0,458 | 0,340 | 0,503 | 0,503 | 0,503 | 0,503 | 0,510 | 0,510 | 0,392 |
| Impedance of the fault loop | Z _O | (mΩ/m) | 6,472 | 6,472 | 6,472 | 6,472 | 4,906 | 4,906 | 3,308 | 5,977 | 5,977 | 5,977 | 5,977 | 4,415 | 4,415 | 2,817 |
| Voltage drop with distributed load referred to ΔV3f (*) | Δv [V/m/A]10 ⁻³ cosφ = 0,7 | | 3,57 | 3,03 | 3,03 | 3,03 | 3,03 | 2,08 | 2,08 | 1,04 | 3,03 | 3,03 | 3,03 | 3,03 | 2,08 | 2,08 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,75 | | 3,80 | 3,22 | 3,22 | 3,22 | 3,22 | 2,21 | 2,21 | 1,10 | 3,22 | 3,22 | 3,22 | 3,22 | 2,21 | 2,21 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,8 | | 4,04 | 3,42 | 3,42 | 3,42 | 3,42 | 2,33 | 2,33 | 1,17 | 3,42 | 3,42 | 3,42 | 3,42 | 2,33 | 2,33 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,85 | | 4,27 | 3,61 | 3,61 | 3,61 | 3,61 | 2,46 | 2,46 | 1,23 | 3,61 | 3,61 | 3,61 | 3,61 | 2,46 | 2,46 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,9 | | 4,49 | 3,80 | 3,80 | 3,80 | 3,80 | 2,58 | 2,58 | 1,29 | 3,80 | 3,80 | 3,80 | 3,80 | 2,58 | 2,58 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,95 | | 4,72 | 3,98 | 3,98 | 3,98 | 3,98 | 2,69 | 2,69 | 1,34 | 3,98 | 3,98 | 3,98 | 3,98 | 2,69 | 2,69 |
| | Δv [V/m/A]10 ⁻³ cosφ = 1 | | 4,90 | 4,12 | 4,12 | 4,12 | 4,12 | 2,76 | 2,76 | 1,38 | 4,12 | 4,12 | 4,12 | 4,12 | 2,76 | 2,76 |
| Weight | p | [kg/m] | 1,00 | 1,04 | 1,25 | 1,28 | 1,19 | 1,56 | 1,56 | 1,80 | 1,83 | 2,02 | 2,02 | 1,98 | 2,33 | 2,33 |
| Fire load | | [kWh/m] | 1,03 | 1,03 | 1,91 | 1,91 | 1,0 | 1,9 | 1,9 | 1,1 | 1,1 | 2,1 | 2,1 | 1,1 | 2,1 | 2,1 |
| Degree of protection | IP | | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Losses for the Joule effect at nominal current | P | [W/m] | 11 | 10,6 | 10,6 | 10,6 | 18,2 | 18,2 | 22,6 | 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 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

(*) **THREE-PHASE:** $\Delta V_{3f} = \sqrt{3}/2 \times (R_t \cos\varphi + X \sin\varphi)$
 $\Delta V_{3f}(I_n) = I \times L \times \Delta V_{3f}$: (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:**
 $\Delta V_{1f} = 1/2 \times (2R_t \cos\varphi + 2X \sin\varphi)$
 $\Delta V_{1f}(I_n) = I \times L \times \Delta V_{1f}$: (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 = lenght (m)



LB PLUS DATA

The new busbar trunking system for LIGHTING MANAGEMENT

LB PLUS DATA, the new busbar conceived for distribution and lighting in the service sector, which integrates a BUS that can be used for Lighting Management.

Range

LB PLUS DATA may be used to manage the lighting in the service and industrial sectors, by associating it with BTICINO and LEGRAND LIGHTING MANAGEMENT solutions, and using the DALI and the 1-10 V protocols.

ENERGY SAVING

With **LB PLUS DATA** there is a reduction of both energy consumption due to artificial illumination (up to 75%, according to UNI EN 15193), and energy waste, thanks to the automatic management of lighting.

REDUCTION IN OPERATING COSTS

System maintenance and management costs are significantly reduced, providing an economic return on investments within periods between 6 months and 5 years

COMPLIANCE WITH THE STANDARDS

With **LB PLUS DATA**, compliance with the EU Directives on energy efficiency both for new and for refurbished buildings is ensured.

ENVIRONMENTAL SUSTAINABILITY

With the reduction of energy consumption, there is also an important reduction in the emission of polluting gases in the atmosphere. Renewable energy sources are not the only mean for reaching the environmental sustainability objectives: the starting point is certainly the reduction of existing consumptions.

SAME PERFORMANCES AND ACCESSORIES

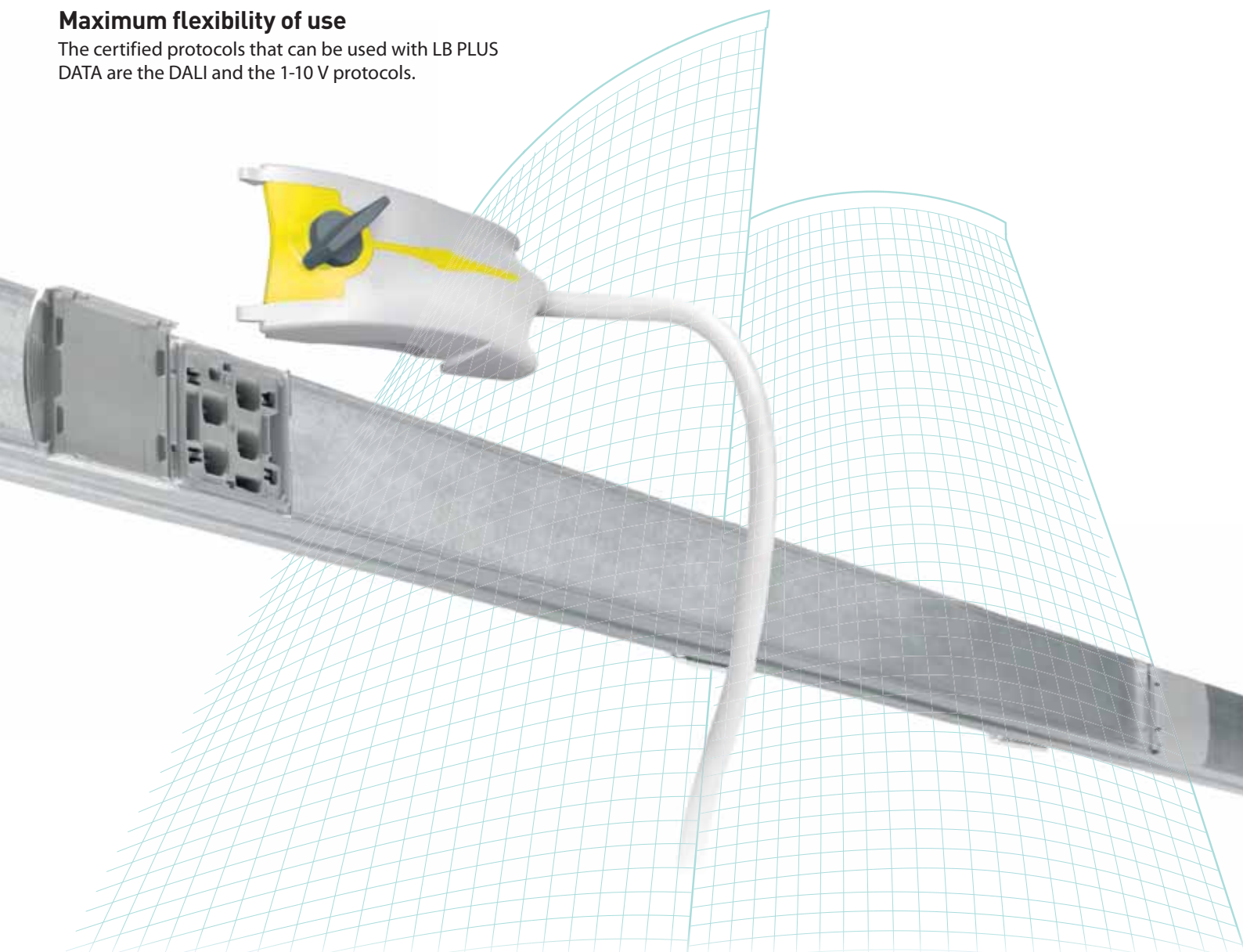
LB PLUS DATA has the same electrical and mechanical features of the standard range. It can distribute rated currents from 25 to 63A, and use the same installation accessories of LB PLUS. The particular characteristic of these new busbars is the presence of two specific conductors, which can be used as lighting management BUSES with LIGHTING MANAGEMENT systems.

NEW DEDICATED PLUGS

LB PLUS DATA has new plugs for drawing energy and for the connection of the BUS. The plugs can be used for the connection of both the various controls, and the lighting bodies for the management of the lighting.

Maximum flexibility of use

The certified protocols that can be used with LB PLUS DATA are the DALI and the 1-10 V protocols.



FULLY ADDRESSABLE DALI

All the lamps are connected to the same output of the DALI gateway and can be managed independently. It is also possible to manage all the lamps in the same way (ON, OFF, dimmed), and create independent sub-groups. The main advantage is the extreme versatility, and the configuration flexibility. This solution is suitable for offices, shopping centres with shops and display areas, supermarket corridors, and in those cases with specific lighting management and reconfiguration flexibility requirements.

BROADCAST DALI

All the lamps connected to the same DALI interface output are controlled in the same way (ON, OFF, dimmed). This does not allow single ballasts to be managed separately, and wiring groups with simplified configuration may be created. The system feedback functions are, however, maintained. This solution is suitable for installation in warehouses, or systems with corridors that do not need the management of lamp sub-groups or individual ballasts.

1-10V

This technology gives the possibility of adjusting lighting devices and dimmers using an analogue voltage signal between 1V, the minimum light level, and 10V, the maximum light level. The switching on and off of the devices is performed by adjusting the feed unit. All the lamps connected to the same 1-10V dimmer output are managed in the same way; it is not possible to have sub-groups, or to manage ballasts independently. This solution is suitable for installation in warehouses, or systems with corridors that do not need the management of lamp sub-groups or individual ballasts.

DALI is a uniform standard shared by the whole lighting sector, which defines a type of interface for digital communication between control modules and electronic feed units. Included in the EN 60929 standards, it ensures interchangeability of electronic feed units from different manufacturers. For further information on the DALI protocol visit the following website: www.dali-ag.org



LB PLUS DATA

In= 25-40-63A



75160102D



751601001D

75201002D

75201001D

| Cat.Nos | Straight lenghts with BUS | | | | | |
|------------------------|---------------------------|--------|------------|------------|---------|-------------|
| | Type | In (A) | Lenght (m) | Conductors | Outlets | Weight (kg) |
| 75160102D 75160104D | LBD252 | 25 | 3 | 2 | 4 | 3,2 |
| 75170102D 75170104D | LBD254 | | | 4 | 3 | 3,1 |
| 75180102D 75180104D | LBD256 | | | 6 | 4+4 | 3,2 |
| 75200102D 75200104D | LBD256 | | | 6 | 3+3 | 3,9 |
| 75200111D | LBD402 | 40 | 3 | 2 | 4 | 3,7 |
| 75220102D 75220104D | LBD402 | | 1,5 | 2 | 3 | 3,7 |
| 75220111D | LBD406 | | 3 | 6 | 2 | 2,0 |
| 75240102D 75240111D | LBD406 | | 1,5 | 6 | 4+4 | 4,8 |
| | | | | | 3+3 | 4,8 |
| | | | | | 1+1 | 2,5 |
| | | | | | 4+2 | 4,8 |
| | | | | | 1+1 | 2,5 |

Feed unit

Allows you to electrically power the LB PLUS line through a cable line.
With clamps for connection to rigid or flexible copper cables, and cable terminal.
The end feed units includes the corresponding end cover.
Right feed unit + right end cover
Left feed unit + left end cover
The intermediate feed unit can be used to power the busbar from the middle 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.

| | In (A) | Conductors | Description | Weight (kg) |
|-----------|--------|------------|-----------------------------|-------------|
| 75161001D | 25 | 4 | RH feed unit + RH end cover | 0,45 |
| 75201001D | | | RH feed unit + RH end cover | 0,85 |
| 75201002D | | 4 | LH feed unit + LH end cover | 1,2 |
| 75201151D | 40 | | Intermediate feed unit* | 4,0 |
| 75221001D | | | RH feed unit + RH end cover | 0,9 |
| 75221002D | | 8 | LH feed unit + LH end cover | 1,2 |
| 75221151D | | | Intermediate feed unit* | 4,15 |
| 75241001D | | | RH feed unit + RH end cover | 0,9 |
| 75241002D | 63 | 4 | LH feed unit + LH end cover | 1,2 |
| 75241151D | | | Intermediate feed unit* | 4,25 |

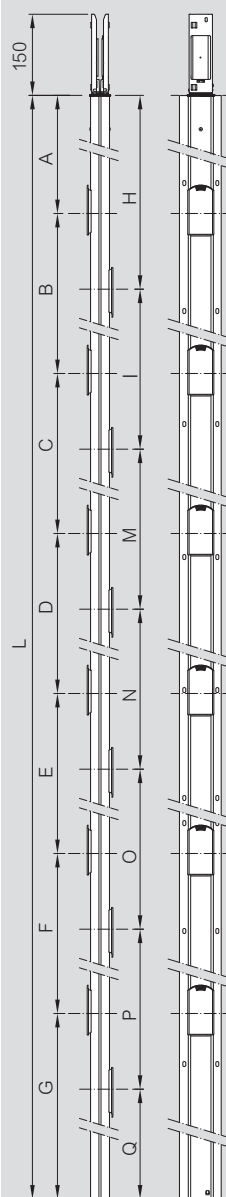
Note: RH-Right, LH-Left

*For every intermediate feed unit are included end covers (RH+LH)

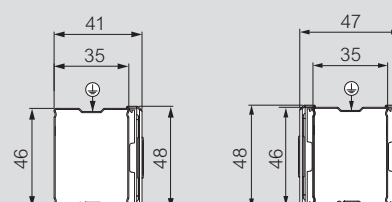
Finishes: LB PLUS DATA in a painted version is available on request from second part of 2015

Red codes: new items

Dimensional data



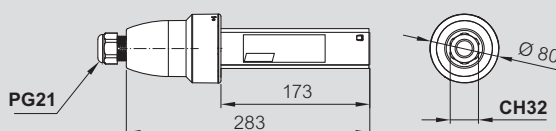
In compliance with standard IEC 61439-6
Degree of protection IP55
Impact resistance IK07
Rated current In 25-40-63 A
Straight lengths material:
LB PLUS - TYPE A Galvanised steel,
thickness 0,45 mm



| LB PLUS DATA | | | | | | | | |
|--------------|---------------------|------|------|------|----------------------|------|------|------|
| | Outlets (on 1 side) | | | | Outlets (on 2 sides) | | | |
| | 2 | 2 | 3 | 4 | 1+1 | 2+2 | 3+3 | 4+4 |
| L | 1500 | 3000 | 3000 | 3000 | 1500 | 3000 | 3000 | 3000 |
| A | 255 | 1155 | 705 | 705 | 255 | 1155 | 705 | 705 |
| B | 900 | 1350 | 900 | 450 | - | 1350 | 900 | 450 |
| C | - | - | 900 | 900 | - | - | 900 | 900 |
| D | - | - | - | 450 | - | - | - | 450 |
| E | - | - | - | - | - | - | - | - |
| F | - | - | - | - | - | - | - | - |
| G | 345 | 495 | 495 | 495 | 1245 | 495 | 495 | 495 |
| H | - | - | - | - | 1145 | 1295 | 395 | 845 |
| I | - | - | - | - | - | 1350 | 900 | 450 |
| M | - | - | - | - | - | - | 900 | 900 |
| N | - | - | - | - | - | - | - | 450 |
| O | - | - | - | - | - | - | - | - |
| P | - | - | - | - | - | - | - | - |
| Q | - | - | - | - | 355 | 355 | 805 | 355 |

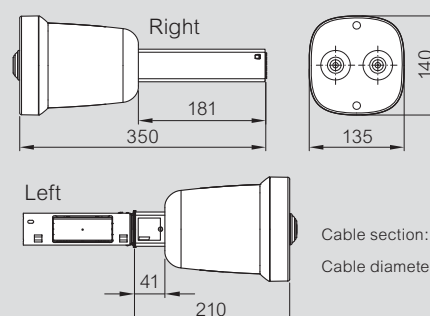
Dimensional data in mm

Feed unit 254



Cable section: max 6 mm²
Cable diameter: min 12 mm
max 18 mm

Feed unit 404 / 408 / 634



Cable section: min 6 mm²
max 25 mm²
Cable diameter: max 32 mm

LB PLUS DATA

In= 25-40-63A



75221261D



75005014D



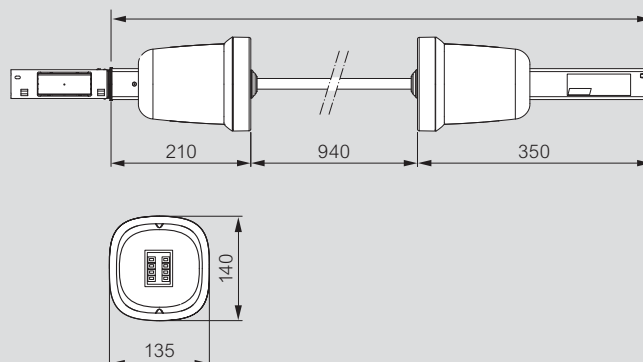
75005008D

Material Self extinguishing plastic: IEC 60695-2-12 glow wire test and V0 according to UL94. Loads In 10-16-25 A.

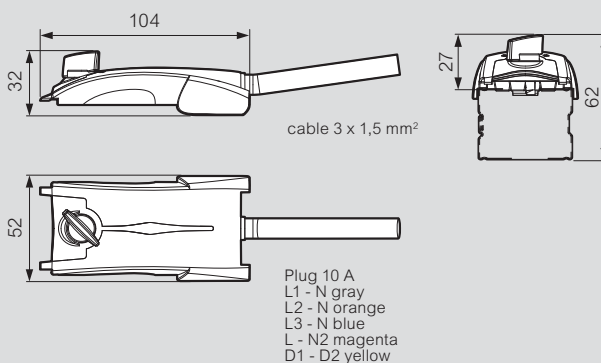
| Cat.Nos | Flexible joint | |
|----------------------------------|--|---------------------|
| 75201261D | version 25/40 A at 4 conductors | Weight (kg) 2,25 |
| 75221261D | version 25/40 A at 8 conductors | 2,35 |
| 75241261D | version 63 A at 4 conductors | 2,45 |
| Tap-off plugs with data bus only | | |
| 75005014D | 10 A plug DATA BUS only - cable 1 m D1-D2 H05VVF | Weight (kg) |
| 75005064D | 10 A plug DATA BUS only - cable 1 m D1-D2 FG7OM1 | 0,16 |
| Power and data tap-off plugs | | |
| 75005005D | Plug 16 A with BUS DALI - cable 1 m L1-N H05VVF | Weight (kg) |
| 75005006D | Plug 16 A with BUS DALI - cable 1 m L1-N FG7OM1 | 0,16 |
| 75005007D | Plug 16 A with selecting phase and BUS DALI - cable 1 m H05VVF | 0,16 |
| 75005008D | Plug 16 A with selecting phase and BUS DALI - cable 1 m FG7OM1 | |

Dimensional data

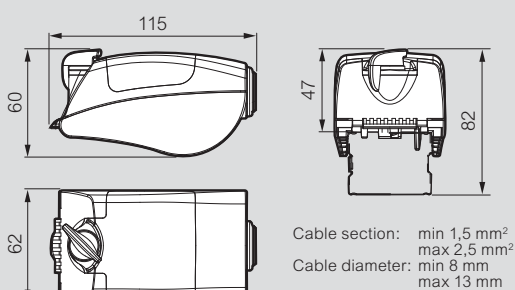
Flexible joint 404 / 408 / 634



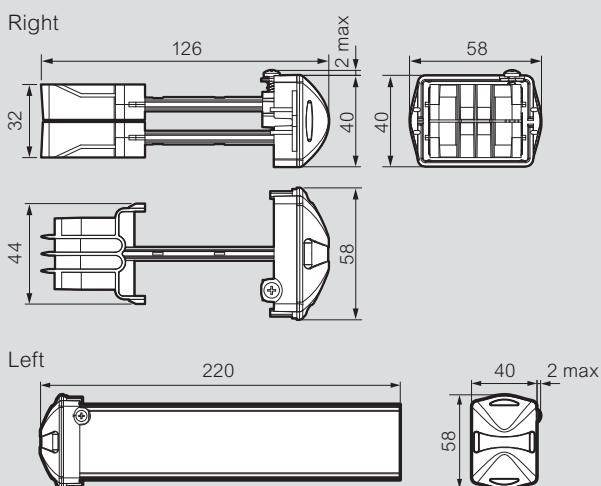
Plug 10 A



Plug 16 A

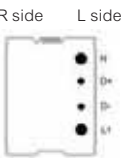
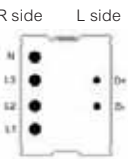
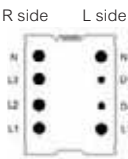
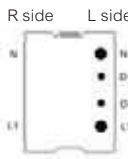
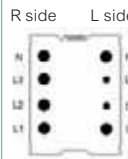
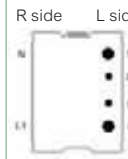


End cover (Supplied together with Feed Unit)



LB PLUS DATA

quick selection table

| |  R side L side |  R side L side |  R side L side |  R side L side |  R side L side |  R side L side |
|---|--|--|---|--|--|--|
| | 252 + DATA | 254 + DATA | 256 + DATA | 402 + DATA | 406 + DATA | 632 + DATA |
| STRAIGHT LENGTHS TYPE A WITH BUS | | | | | | |
| 3 m length - 4 outlets (4+4 and 4+2 outlets) | 75160102D | 75170102D | 75180102D | 75200102D | 75220102D | 75240102D |
| 3 m length - 3 outlets (3+3 outlets) | 75160104D | 75170104D | 75180104D | 75200104D | 75220104D | |
| 1,5 m length - 2 outlets (1+1 outlets) | 75200111D | 75220111D | 75220111D | 75200111D | 75220111D | 75240111D |
| FEED UNITS FOR POWER AND DATA BUS | | | | | | |
| RH feed unit + RH end cover | 75161001D | 75221001D | 75221001D | 75201001D | 75221001D | 75241001D |
| LH feed unit + LH end cover | 75201002D | 75221002D | 75221002D | 75201002D | 75221002D | 75241002D |
| Centre feed unit | 75201151D | 75221151D | 75221151D | 75201151D | 75221151D | 75241151D |
| FLEXIBLE ELEMENTS FOR PATH CHANGE | | | | | | |
| Flexible joint | 75201261D | 75221261D | 75221261D | 75201261D | 75221261D | 75241261D |
| POWER AND DATA TAP-OFF PLUGS | | | | | | |
| L1-N + DATA 16 A plug with 1 m cable 5G1,5 (H05VVF) | 75005005D | - | 75005005D | 75005005D | 75005005D | 75005005D |
| L1-N + DATA 16 A plug with 1 m cable 5G1,5 (FG7OM1) | 75005006D | - | 75005006D | 75005006D | 75005006D | 75005006D |
| Phase selection plug + DATA 16A plug with 1m cable 5G1,5 (H05VVF) | - | 75005007D | 75005007D | 75005007D | 75005007D | 75005007D |
| Phase selection plug + DATA 16A plug with 1m cable 5G1,5 (FG7OM1) | - | 75005008D | 75005008D | 75005008D | 75005008D | 75005008D |
| TAP-OFF PLUGS ONLY DATA | | | | | | |
| "DATA only" plug with 1m cable D1-D2 (H05VVF) | 75005014D | 75005014D | 75005014D | 75005014D | 75005014D | 75005014D |
| "DATA only" plug with 1m cable D1-D2 (FG7OM1) | 75005064D | 75005064D | 75005064D | 75005064D | 75005064D | 75005064D |
| BRACKETS | | | | | | |
| Suspension bracket 60 kg (LB PLUS - TYPE A) | 75003000 | 75003000 | 75003000 | 75003000 | 75003000 | 75003000 |
| Hook for lamp | 75003001 | 75003001 | 75003001 | 75003001 | 75003001 | 75003001 |
| Ring | 75003002 | 75003002 | 75003002 | 75003002 | 75003002 | 75003002 |
| Pigtail for chain | 75003005 | 75003005 | 75003005 | 75003005 | 75003005 | 75003005 |
| Bracket for cable channel | 75003006 | 75003006 | 75003006 | 75003006 | 75003006 | 75003006 |
| 5m steel cable with self locking clamp | 75003008 | 75003008 | 75003008 | 75003008 | 75003008 | 75003008 |
| Bracket with 3m steel cable | 75003009 | 75003009 | 75003009 | 75003009 | 75003009 | 75003009 |

LB PLUS DATA

technical data

| LB PLUS DATA | | | 252 DATA | 254 DATA | 256 DATA | 402 DATA | 406 DATA | 632 DATA |
|---|---------------------------------|---------------------------------------|----------|----------|----------|-----------|-----------|-----------|
| | | | 2+2 DATA | 4+2 DATA | 6+2 DATA | 2+2 DATA | 6+2 DATA | 2+2 DATA |
| Number of live conductors | | | | | | | | |
| Overall dimension of the busbars | LxH | [mm] | 35x46,3 | 35x46,3 | 35x46,3 | 35,2x77,5 | 35,2x77,5 | 35,2x46,3 |
| Rated current | I _n | [A] | 25 | 25 | 25 | 40 | 40 | 63 |
| Operational voltage | U _e | [V] | 400 | 400 | 400 | 400 | 400 | 400 |
| Insulational voltage | U _i | [V] | 500 | 500 | 500 | 500 | 500 | 500 |
| Frequency | f | [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (0.1 s) | I _{CW} | [kArms] | 2,2 | 2,2 | 2,2 | 2,7 | 2,7 | 2,7 |
| Singlephase Peak current | I _{pk} | [kA] | 4,4 | 4,4 | 4,4 | 5,4 | 5,4 | 5,4 |
| Thermal limit | I ² t | [A ² s x 10 ⁶] | 0,484 | 0,484 | 0,484 | 0,729 | 0,729 | 0,729 |
| Phase resistance (20 °C) | R ₂₀ | mΩ/m | 4,761 | 4,761 | 4,761 | 3,190 | 3,190 | 1,595 |
| Phase resistance at thermal conditions | R _t | mΩ/m | 5,656 | 5,656 | 5,656 | 3,802 | 3,802 | 1,901 |
| Phase reactance (50 Hz) | X | mΩ/m | 0,229 | 0,229 | 0,229 | 0,236 | 0,236 | 0,118 |
| Phase impedance | Z | mΩ/m | 4,767 | 4,767 | 4,767 | 3,199 | 3,199 | 1,599 |
| Resistance of protective conductor (sheet) | R _{PE} | mΩ/m | 1,695 | 1,695 | 1,695 | 1,695 | 1,695 | 1,695 |
| Reactance of the protective bar (50 Hz) | X _{PE} | mΩ/m | 0,222 | 0,222 | 0,222 | 0,222 | 0,222 | 0,222 |
| Resistance of the fault loop | R ₀ | mΩ/m | 6,456 | 6,456 | 6,456 | 4,885 | 4,885 | 3,290 |
| Reactance of the fault loop (50 Hz) | X ₀ | mΩ/m | 0,451 | 0,451 | 0,451 | 0,458 | 0,458 | 0,340 |
| Impedance of the fault loop | Z ₀ | mΩ/m | 6,472 | 6,472 | 6,472 | 4,906 | 4,906 | 3,308 |
| Voltage drop with distributed load referred to ΔV3f (*) | ΔV 10 ⁻³ cosφ = 0,7 | | 3,03 | 3,03 | 3,03 | 2,08 | 2,08 | 1,04 |
| | ΔV 10 ⁻³ cosφ = 0,75 | | 3,22 | 3,22 | 3,22 | 2,21 | 2,21 | 1,10 |
| | ΔV 10 ⁻³ cosφ = 0,8 | | 3,42 | 3,42 | 3,42 | 2,33 | 2,33 | 1,17 |
| | ΔV 10 ⁻³ cosφ = 0,85 | | 3,61 | 3,61 | 3,61 | 2,46 | 2,46 | 1,23 |
| | ΔV 10 ⁻³ cosφ = 0,9 | | 3,80 | 3,80 | 3,80 | 2,58 | 2,58 | 1,29 |
| | ΔV 10 ⁻³ cosφ = 0,95 | | 3,98 | 3,98 | 3,98 | 2,69 | 2,69 | 1,34 |
| | ΔV 10 ⁻³ cosφ = 1 | | 4,12 | 4,12 | 4,12 | 2,76 | 2,76 | 1,38 |
| Weight | p | [kg/m] | 1,04 | 1,25 | 1,28 | 1,19 | 1,56 | 1,56 |
| Fire load | | [kWh/m] | 1,03 | 1,91 | 1,91 | 1,0 | 1,9 | 1,9 |
| Degree of protection | IP | | 55 | 55 | 55 | 55 | 55 | 55 |
| Degree of impact resistance | IK | | 07 | 07 | 07 | 07 | 07 | 07 |
| Losses for the Joule effect at nominal current | P | [W/m] | 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 |

(*) **THREE-PHASE:** $\Delta V_{3f} = \sqrt{3}/2 \times (R_t \cos\phi + X \sin\phi)$
 $\Delta V_{3f}(I_n) = I \times L \times \Delta V_{3f}$: (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:**
 $\Delta V_{1f} = 1/2 \times (2R_t \cos\phi + 2X \sin\phi)$
 $\Delta V_{1f}(I_n) = I \times L \times \Delta V_{1f}$: (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 = lenght (m)

Protection from short circuit (I_n ≤ 100 A).

Legrand busbar trunking systems with a rated current lower than or equal to 100 A (LB PLUS - MS 63 e 100) are properly protected through an MCB (Modular 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 the standard: IEC 61439-6, CEI EN 61439-6

Temperature rating schedule according to the room temperature

| Room temperature [°C] | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|-------------------------|------|------|------|------|-------|----|-------|------|------|------|
| Kt 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 DATA | Concentrated load | | Distributed load | |
|--------------|--------------------------------------|-------|------------------|-----------|
| | Distance between suspension brackets | | | |
| | 1,5 m | 40 kg | 50 kg/m | (75 kg)** |
| | 2 m | 30 kg | 30 kg/m | (60 kg)** |
| | 3 m | 20 kg | 13 kg/m | (39 kg)** |

** Distributed load total weight



MINISBARRE (MS)

The compact solution for medium power distribution

BUSBAR 63, 100 AND 160 A

MS (Mini busbar) is the smallest range of the medium power range, ideal for the powering of lighting bodies in small-medium companies. Thanks to its characteristics, and the wide range of accessories and tap-off boxes available, the MS range is the best compromise in all the medium power applications of the service sector. With the MS range, there is absolute confidence that the power is distributed in a safe way, with the best performance.

Range

The main features of the **MS range** are:

- speed, simplicity, and flexibility during the installation and the design of the paths;
- strength, in spite of the compact sizes;
- availability of tap-off boxes with internal room for up to 16 DIN modules;
- compliance with the IEC 61439-6 standard;
- reference room temperature 40 °C.
- the whole busbar is "fire retardant" in accordance with EN 60332-3.

WIDE RANGE OF TAP-OFF BOXES

The range of tap-off boxes of the MS busbar family is capable of meeting all the needs of the customer.

SIMPLE INSTALLATION

The busbars and the accessories making up the system can be installed very easily.

QUALITY MATERIAL

Each system component is made using high quality materials, in compliance with the technical and safety requirements of the standards. During each manufacturing process stage, maximum attention is given to each and every element.

FAST AND SIMPLE CONNECTION

The connection between straight elements is simple and quick. With one simple operation, it is possible to obtain both the electrical and the mechanical connection, ensuring at the same time an IP40 protection degree. The application of a sleeve on the joint and a shutter for each window (without box), gives the possibility to increase the protection degree to IP55.



LABORATORIES



SMALL OR MEDIUM FACTORIES

Installation fields

The **MS range** is widely used in labs, small to medium companies, warehouses, and in all the service sector structures, where there is a need for electric power distribution for medium power systems.

Installation accessories



Intermediate feed unit



Flexible joint



Tap-off boxes



IP55 kit sets



Tap-off boxes

TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS



Feed units.

Joint cover.
It ensures the IP55
degree of protection
of the junction.

Tap-off box complete with terminals
for cables of up to 25 mm². Made from
self-extinguishing plastic material, high
mechanical resistance and resistance
to static currents. The Box can be
connected and disconnected when
energized. Capacities from 16A to 32A.

Depending on the different installation requirements Legrand range can provide various technical solutions:

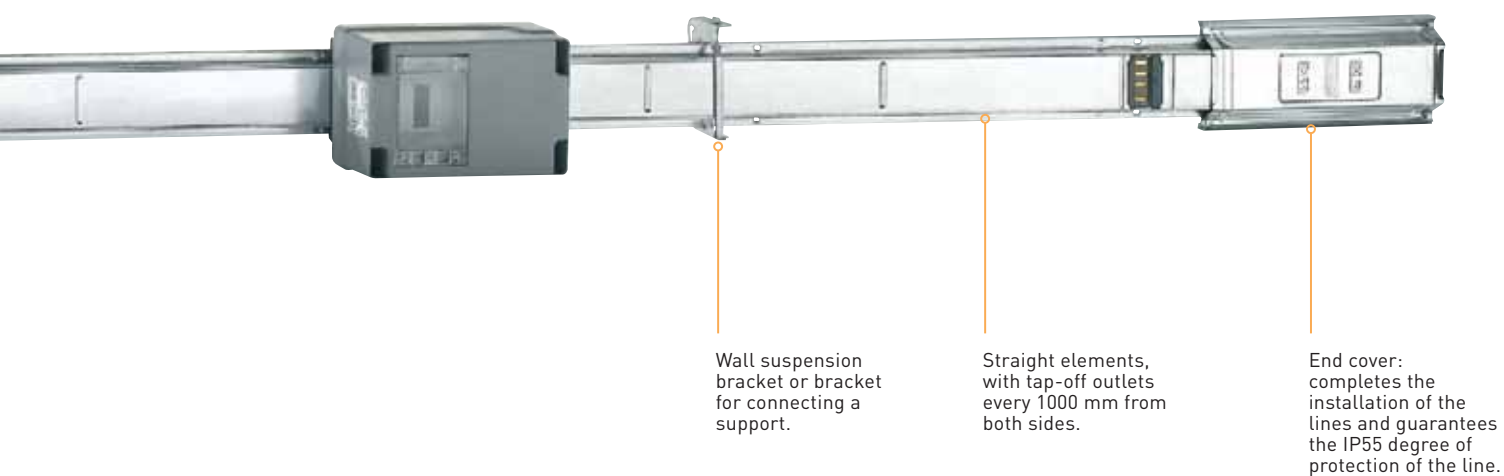
- a) 90° angles: available for carrying out changes of direction both horizontally and vertically. There is a quick connection, as with the straight elements. The standard is IP40 degree of protection (to reach IP55 is necessary include the specific accessory);
- b) T-type and X-type elements: available on request for special applications;
- c) flexible angle: available for 63A, 100A and 160A capacities and allows changes of direction with angles different, horizontal and vertical, from 90°;

- d) straight elements with flame barrier (internal + external). These elements - used when it is necessary to move through fire-resistant walls - have been tested in laboratories (in compliance with DIN Standards 4102-9 and EN 1366-3) to confirm that, if correctly installed, they can maintain the intrinsic fire-resistant properties of the wall;

e) Vertical Installation (riser mains)*

straight elements with bar lock: when the busbar is installed vertically (riser mains) these elements are equipped with a device that prevents the conductors from sliding due to the weight of the portion of column over it. This type of element is required at about every 10 m of column.

*** For this quotation please contact Legrand**



MINISBARRE (MS) 63, 100, 160 A

trunking components



Reference standard: IEC 61439-6
Reference temperature: 40 °C
Degree of Protection: IP 40/55
Thickness: 0,8 mm;
Dimension: 39x97mm;
N° of conductors: 4 with equal section 3P+N
Conducting «fire retardant» in accordance with EN 60332-3
Separation between the conductors by plastic insulators reinforced with 20% glass fiber, which guarantees a degree of V1 self-extinguishing (according to UL94) and conform to the glow-wire test according to IEC 60695-2-10

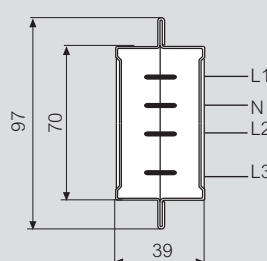
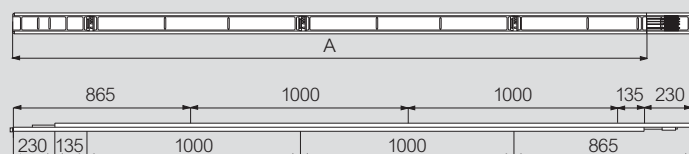
| Cat.Nos | | | Straight elements | |
|------------|--------------|--------------|-------------------|---------|
| MS63 (63A) | MS100 (100A) | MS160 (160A) | L (m) | Outlets |
| 51530101 | 51510101 | 51520101 | 3 | 3+3 |
| 51530116 | 51510116 | 51520116 | 2 | 2+2 |
| 51530115 | 51510115 | 51520115 | 1,5 | 1+1 |
| 51530114 | 51510114 | 51520114 | 1 | 1+1 |
| 51530112 | 51510112 | 51520112 | <1,5 | * |
| 51530113 | 51510113 | 51520113 | >1,5 | * |

| MS63 | MS100 | MS160 | Flexible joint (elbow) - IP55 | |
|----------|----------|----------|-------------------------------|--|
| 51511261 | 51511261 | 51521261 | flexible joint | |

| MS63 | MS100 | MS160 | Elbows - IP55 | |
|----------|----------|----------|---------------|-------|
| | | | | Type |
| 51530351 | 51500361 | 51520351 | horizontal | Right |
| 51530361 | 51500362 | 51520361 | | Left |
| 51530451 | 51500461 | 51520451 | vertical | Right |
| 51530461 | 51500462 | 51520461 | | Left |

*Outlets to be defined in base of the length of element

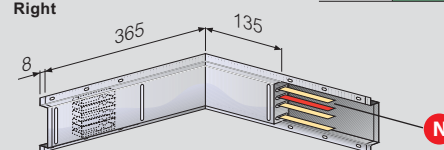
Dimensional data



| In (A) | Item code | A (m) | Weight (kg) |
|--------|-----------|-------|-------------|
| 63 | 51530101 | 3 | 7,890 |
| | 51530116 | 2 | 5,260 |
| | 51530115 | 1,5 | 3,945 |
| | 51530114 | 1 | 2,630 |
| | 51530112 | < 1,5 | - |
| | 51530113 | > 1,5 | - |
| 100 | 51510101 | 3 | 7,890 |
| | 51510116 | 2 | 5,260 |
| | 51510115 | 1,5 | 3,945 |
| | 51510114 | 1 | 2,630 |
| | 51510112 | < 1,5 | - |
| | 51510113 | > 1,5 | - |
| 160 | 51520101 | 3 | 9,290 |
| | 51520116 | 2 | 6,190 |
| | 51520115 | 1,5 | 4,645 |
| | 51520114 | 1 | 3,100 |
| | 51520112 | < 1,5 | - |
| | 51520113 | > 1,5 | - |

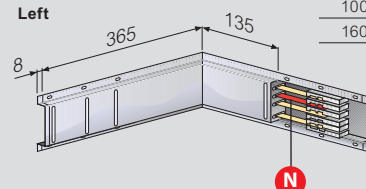
Horizontal elbow

Right



| In (A) | Right | Left | Weight (kg) |
|--------|----------|----------|-------------|
| 63 | 51530351 | 51530361 | 1,600 |
| 100 | 51500361 | 51500362 | 1,600 |
| 160 | 51520351 | 51520361 | 2,600 |

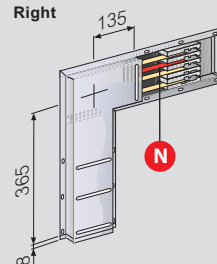
Left



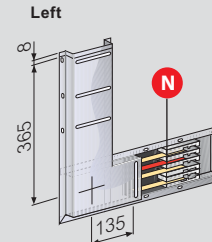
RH and LH elbows are different in the position of the joining block.

Vertical elbow

Right

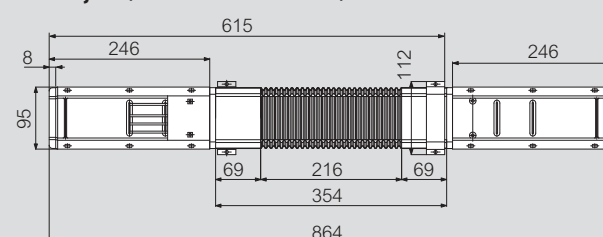


Left



| In (A) | Right | Left | Weight (kg) |
|--------|----------|----------|-------------|
| 63 | 51530451 | 51530461 | 1,600 |
| 100 | 51500461 | 51500462 | 1,700 |
| 160 | 51520451 | 51520461 | 2,700 |

Flexible joint (Art. 51511261 and 51521261)



MINISBARRE (MS) 63, 100, 160 A

feed unit



51511052



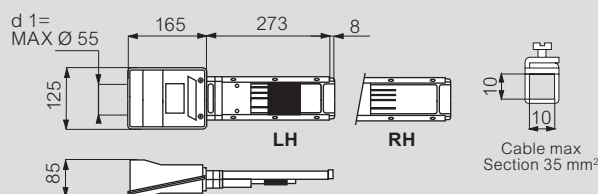
51511151

| Cat.Nos | | | Feed unit | |
|-------------|---------------|---------------|--------------|-------|
| MS63 (63 A) | MS100 (100 A) | MS160 (160 A) | Description | Type |
| 51511051 | 51511051 | 51521051 | head | Right |
| 51511052 | 51511052 | 51521052 | | Left |
| 51511151 | 51511151 | 51521151 | intermediate | |

Note: RH-Right, LH-Left

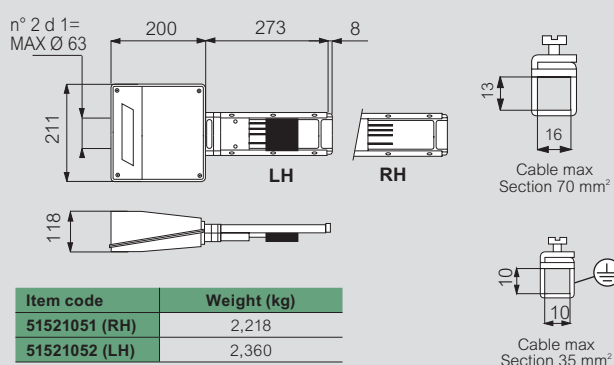
Dimensional data

MS63 - MS100



| Item code | Weight (kg) |
|---------------|-------------|
| 51511051 (RH) | 1,732 |
| 51511052 (LH) | 1,874 |

MS160

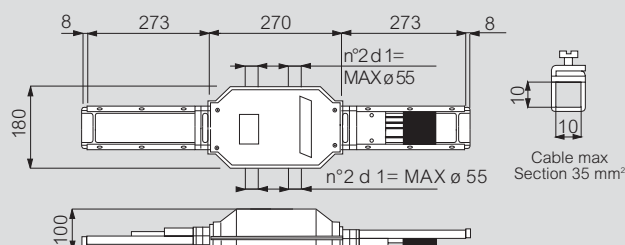


| Item code | Weight (kg) |
|---------------|-------------|
| 51521051 (RH) | 2,218 |
| 51521052 (LH) | 2,360 |

Versions with switch disconnector are also available on request.

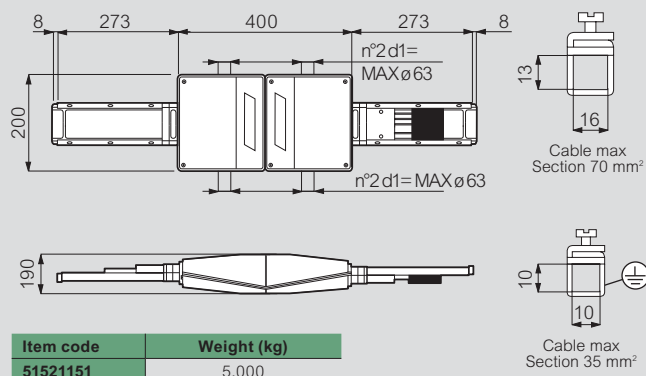
Intermediate feed unit

MS63 - MS100



| Item code | Weight (kg) |
|-----------|-------------|
| 51511151 | 3,500 |

MS160



| Item code | Weight (kg) |
|-----------|-------------|
| 51521151 | 5,000 |

MINISBARRE (MS) 63, 100, 160 A

tap-off boxes



51515071

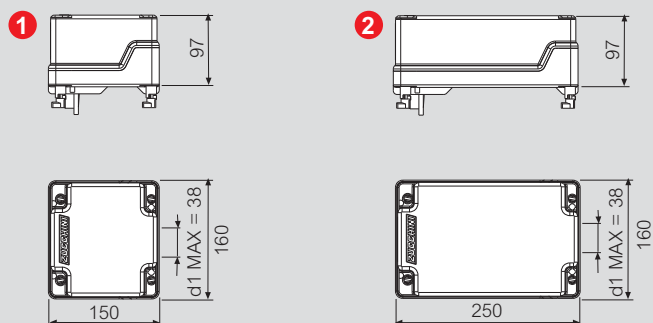


51515074

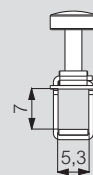
| Cat.Nos | Type | Description | In (A) |
|-----------|------|---------------------------------------|--------|
| 51515071 | 1 | empty with 4 module DIN rail | 32 |
| 51515076* | 1 | with fuse carrier CH10 (10,3x38mm) | 32 |
| 51515077* | 1 | with D01 fuse carrier | 16 |
| 51515078* | 1 | with D02 fuse carrier | 32 |
| 51515072 | 1 | for 4 DIN rail modules cover junction | 32 |
| 51515073 | 2 | empty with 8 module DIN rail | 32 |
| 51515074 | 2 | with 4 module DIN rail (long version) | 32 |
| 51515075 | 2 | with 8 module DIN rail (long version) | 32 |

* Fuses not provided

Dimensional data



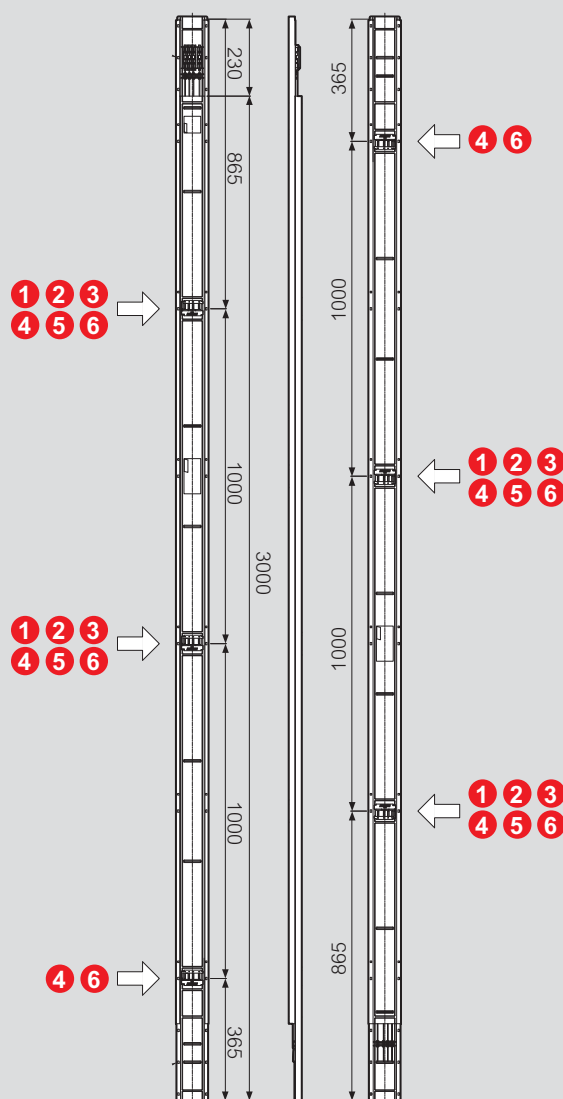
| Item code | Weight (kg) |
|------------|-------------|
| 51515071 | 0,680 |
| 51515076 | 0,680 |
| 51515077 | 0,950 |
| 51515078 | 0,950 |
| 51515072 | 0,730 |
| 51515073 * | 0,930 |
| 51515074 * | 0,960 |
| 51515075 * | 0,990 |



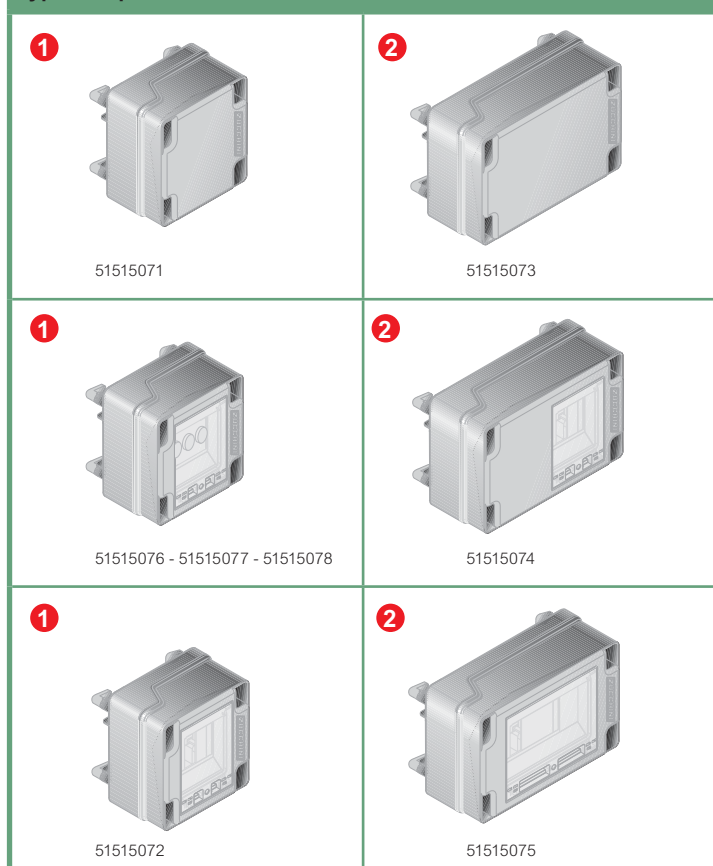
Cable max
Section 16 mm²

Energy withstand 400.000 A2s
Power loss 10 W
Total insulating Tap-off box
* Power loss 16 W

Types of installable boxes



Type of tap-off boxes



MINISBARRE (MS) 63, 100, 160 A

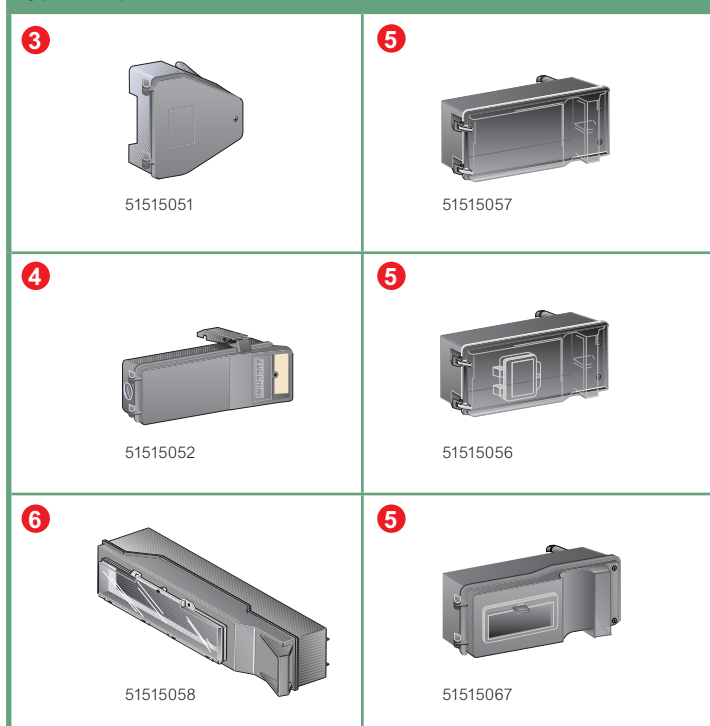
tap-off boxes



| Cat.Nos | Tap-off boxes with disconnecting device on cover | | |
|-----------|--|--|--------|
| | Type | Description | In (A) |
| 51515051* | 3 | with fuses carrier CH10 (10,3x38mm) | 16 |
| 51515052* | 4 | with fuses carrier CH14 (14x51mm) | 50 |
| 51515057 | 5 | with transparent cover | 63 |
| 51515056 | 5 | with transparent cover and hinged window (4 modules) | 63 |
| 51515067 | 5 | with hinged window (7 modules) | 63 |
| 51515058 | 6 | with hinged window (16 modules) | 63 |

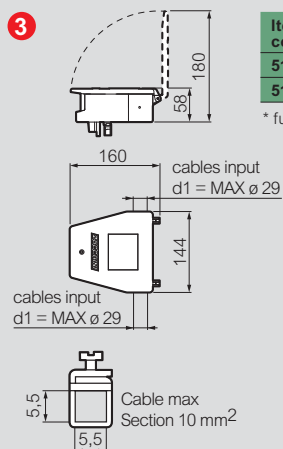
* Fuses not provided

Type of tap-off boxes

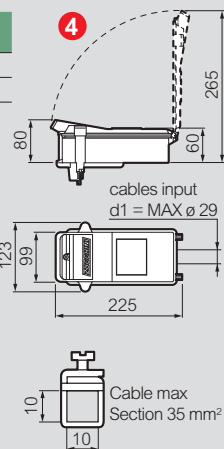


Dimensional data

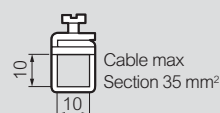
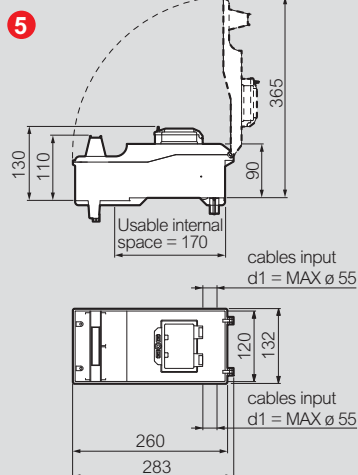
Art. 51515051
In= 16 A



Art. 51515052
In= 50 A



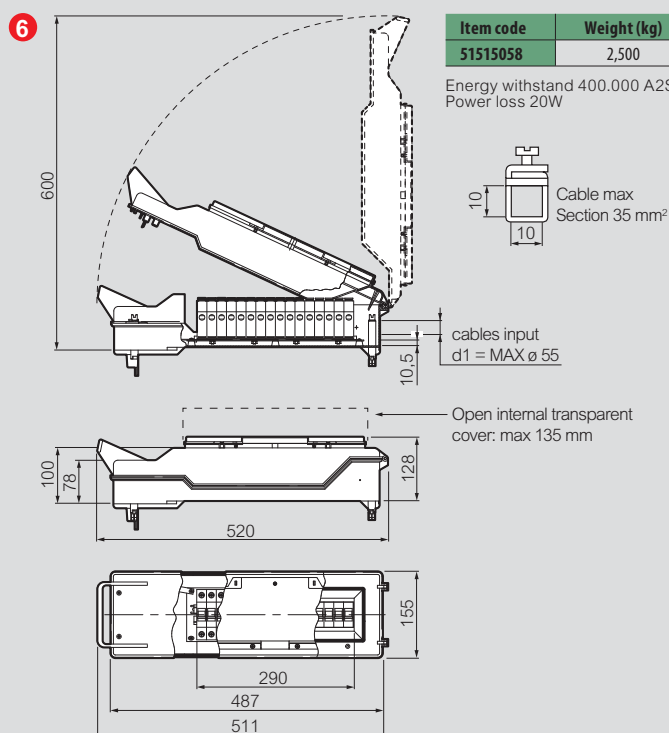
In= 63 A



| Item code | Weight (kg) |
|-----------|-------------|
| 51515057 | 1,100 |
| 51515056 | 1,200 |
| 51515067 | 1,100 |

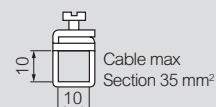
Energy withstand 400.000 A²S
Power loss 20W

In= 63 A



| Item code | Weight (kg) |
|-----------|-------------|
| 51515058 | 2,500 |

Energy withstand 400.000 A²S
Power loss 20W



MINISBARRE (MS) 63, 100, 160 A

tap-off boxes



51501351



51002002



51500161



51500160

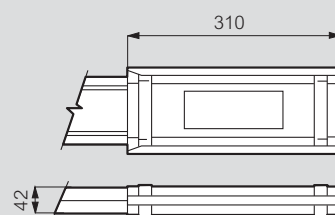
Cat.Nos

Installation accessories

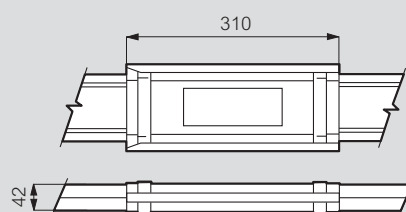
| | |
|----------|---|
| 51501351 | End cover |
| 51500161 | IP55 joint cover (one set for each junction) |
| 51500160 | IP55 outlet cover (6 every 3m straight element) |
| 51002002 | suspension bracket (1 bracket every 2 metres) |

Dimensional data

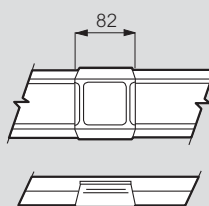
End cover 51501351



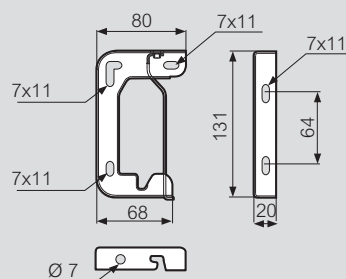
IP55 joint cover 51500161



Outlet cover 51500160



Suspension bracket 51002002



MS - MINI SBARRA

technical informations

STRAIGHT ELEMENTS

The components and the features of the MS straight elements are:

- a casing made of quality galvanized 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;
- overall busbar dimensions: 39x97mm;
- number of conductors: 4 with the same cross section 3P+N available for capacities 63A, 100A and 160A;
- separation between the conductors using plastic insulating devices, reinforced with 20% of glass fibres, which are able to ensure a V1 selfextinguishing 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 windows every 3m), set up for being connected to tap-off boxes;
- an electric joint block, with silver-plated copper contacts for automatically connecting live parts and the PE (protective conductor). The connection between two straight elements is quick; with one operation it is possible to have an electric and a mechanical connection; hence, at the same time, an IP40 degree of protection is guaranteed. The upgrade to IP55 is easily obtained by adding joint covers and outlet covers. The whole duct is fire retardant in compliance with the IEC 60332-3 standard.

FIXING SUPPORT

In order to attach the line to the structure of the building, directly or with wall supports, it is necessary to use a bracket which serves as a collar around the busbar. The bracket has holes to be easily paired with the available supports.

TAP-OFF BOXES

Used to connect and energize one-phase and three-phase loads up to 63A; their 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 pulling it out;
- compliance with all insulating plastic components according to the glow-wire test (IEC 60695-2-10) with V1 self-extinguishing degree (UL94);
- standard IP55 degree of protection without using additional accessories;
- can be inserted and removed when the busbar is energized and when the fixture is under load, up to a capacity of 32A. These boxes are available in a wide range of versions:
- 63A empty boxes (only with a terminal board for connecting cables), with an internal DIN rail and transparent door;
- 16A - available with a set of three cylindrical fuse carriers CH10 (10.3x38mm);
- 16/32A - available with a set of three cylindrical fuse carriers - DIAZED (D01: 16A; D02: 32A);
- 50A - available with cylindrical fuse carriers (14x51mm);
- 63A - available with 4-7-16 DIN modules;
- 16 to 63A - available with a disconnection device integral with the cover.

FEED UNIT

Allows you to electrically power the MS line through a cable line; the installation is carried out with a quick junction connection as with the straight elements. The feed units have terminals for the connection of copper cables for sections of up to 35 mm² for the 63/100A feed unit and 70 mm² for the 160A feed unit. The entrance point of the cables is positioned on the back side of the feed unit. The MS line offers also central feed units as well as power supply boxes with a switch-disconnector which allows you to select the whole line for carrying out maintenance operations or layout changes, if required.

END COVER

The end cover ensures the IP55 protection degree at the end of the line.

MINISBARRA (MS)

| | | 63 | 100 | 160 |
|---|--|--------|-------|-------|
| Number of live conductors | | 4 | | |
| Casing overall dimensions | A x B [mm] | 39x97 | | |
| Rated current | I _n [A] | 63 | 100 | 160 |
| Operating voltage | U _e (V) | 400 | | |
| Insulation voltage | U _i (V) | 750 | | |
| Rated frequency | f (Hz) | 50/60 | | |
| Rated short-time current (0,1 s) | I _{cw} [kA]rms | 2,3 | 4,5 | 5,5 |
| Allowable peak current I _{pk} | I _{pk} [kA] | 10 | | |
| Thermal limit | I ² t [A ² s x 10 ⁶] | 5,29 | 20,25 | 30,25 |
| Phase resistance | R ₂₀ [mΩ/m] | 1,250 | 0,837 | 0,478 |
| Phase reactance at 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 conductor | R _{PE} [mΩ/m] | 0,857 | 0,857 | 0,857 |
| Reactance of the protective conductor at 50Hz | X _{PE} [mΩ/m] | 0,090 | 0,102 | 0,102 |
| Resistance of the fault loop | R ₀ [mΩ/m] | 2,11 | 1,69 | 1,34 |
| Reactance of the fault loop at 50Hz | X ₀ [mΩ/m] | 0,456 | 0,349 | 0,349 |
| Impedance of the fault loop | Z ₀ [mΩ/m] | 2,16 | 1,73 | 1,38 |
| Voltage drop with distributed load referred to ΔV _{3f} (*) | Δv [V/m/A]10 ⁻³ cosφ = 0,7 | 0,98 | 0,66 | 0,44 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,75 | 1,02 | 0,69 | 0,45 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,8 | 1,06 | 0,71 | 0,46 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,85 | 1,09 | 0,73 | 0,46 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,9 | 1,11 | 0,75 | 0,47 |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,95 | 1,13 | 0,76 | 0,46 |
| Straight element weight p | [kg/m] | 2,0 | 2,5 | 2,8 |
| | [kWh/m] | 1,64 | | |
| Fire load | IP | 40/55 | | |
| Joule effect losses at I _n | P [W/m] | 14,9 | 25,1 | 36,7 |
| Ambient temperature | t [°C] | -5/+50 | | |

(*) **THREE-PHASE:** $\Delta V_{3f} = \sqrt{3}/2 \times (R_i \cos\varphi + X \sin\varphi)$

$\Delta V_{3f}(I_n) = I \times L \times \Delta V_{3f}$: (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 **ΔV_{1f} (SINGLE-PHASE) on distributed load:**

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

$\Delta V_{1f}(I_n) = I \times L \times \Delta V_{1f}$: (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 = lenght (m)





MEDIUM RATING (MR)

Performance
and functionality in
medium power

BUSBAR FROM 160 TO 1000 A

MR (Medium Rating) is the range dedicated to the distribution of power in medium to large companies, in riser power supplies (light wells), in service sector buildings (banks, insurance companies, offices, etc.).

Range

The main features of the **MR range** are:

- speed, simplicity, and flexibility during the installation and the design of the paths;
- availability in various sizes: from 160 A up to 1000 A with aluminium alloy conductors, and from 250 A to 1000 A with 99.9% electrolytic copper conductors;
- compliance with the IEC 61439-6 standard;
- reference room temperature 40 °C.

WIDE RANGE OF TAP-OFF BOXES

The range of tap-off boxes of the MR busbar family is capable of meeting all the needs of the customer. Tap-off boxes from 16 A to 1000 A are available, inside which it is possible to house protection devices, such as fuses, small size circuit breakers, and/or boxed circuit breakers

QUALITY MATERIAL

Each system component is made using high quality materials, in compliance with the technical and safety requirements of the standards. During each manufacturing process stage, maximum attention is given to each and every element.

STURDINESS AND FUNCTIONALITY

MR busbars guarantee maximum system functionality thanks to careful design of the components, easy to install, and the construction characteristics, which make MR busbars among the strongest on the market.

MAXIMUM ADVANTAGE IN DISTRIBUTION

The MR range is even more advantageous in Data Center and Vertical (riser column) applications, which do not require busbar blocking elements, or thermal expansion elements. The monobloc that distinguishes the MR range compensates the thermal expansion of conductors.

Installation fields

The typical applications where the **MR busbars** can be used are:

- industry,
- skyscrapers,
- hospitals,
- data center,
- shopping centres...

and everywhere there is the need for power distribution (up to 1000 A)



HIGH-RISE BUILDINGS



DATA CENTER



INDUSTRIES

Installation accessories



Feed unit



Feed unit for cabinets



Horizontal elbow



Vertical elbow



End cover



Outlet cover



Tap-off box

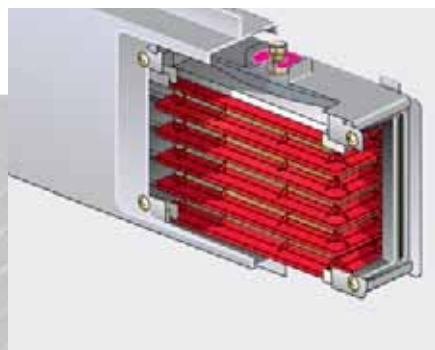


Tap-off box for MCB's

FEATURES

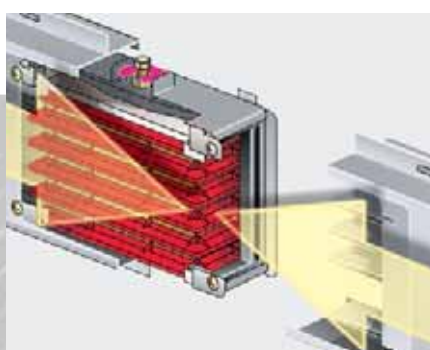
PRE-ASSEMBLED MONOBLOC

All trunking components (straight elements, angles, etc.) are provided with a pre-assembled monobloc which considerably speeds up the installation of the system and makes transportation and storage operations easier.



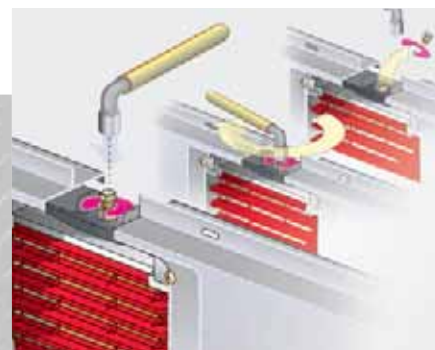
EXTREMELY FAST INSTALLATION

The monobloc and the "dynamometric" nut allow a very fast installation of the whole line



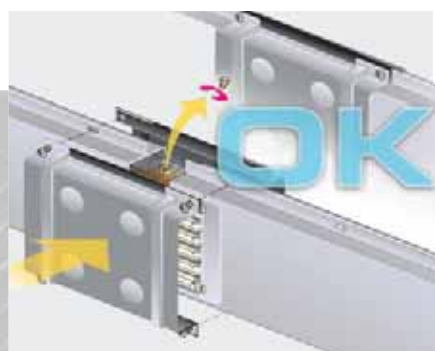
DYNAMOMETRIC MONOBLOC

Tighten the "dynamometric" bolt on the monobloc until the head breaks to electrically connect the elements. The breakage of the nut head guarantees long-lasting reliability and safety. The connection is maintenance free. In case of a future intervention on the line, the monobloc must be retightened using the second nut head with a torque wrench at the correct settings (see installation manual).



CONNECTION FLANGES

If the monobloc has been tightened improperly, the head of the dynamometric nut will prevent the mechanical coupling from closing. The connection flanges and the seals serve as a protection for the element during transportation and ensure their degree of protection as well as their mechanical rigidity when being installed.



PROTECTION DEGREE

The MR line position has a standard IP55 protection degree.



EXCELLENT FIRE RESISTANCE

The MR line has elements provided with a flame barrier (S120 according to IEC EN 1366) and structures which guarantee that the bus-line continues to function in case of fire (E120 according to IEC EN 1366). The fire load of the MR line is extremely low compared to the quantity of plastic materials needed to insulate cables with the same capacity.



GLOW-WIRE TEST

All plastic materials are resistant and in compliance with the "glow-wire" test (IEC EN61439-6).

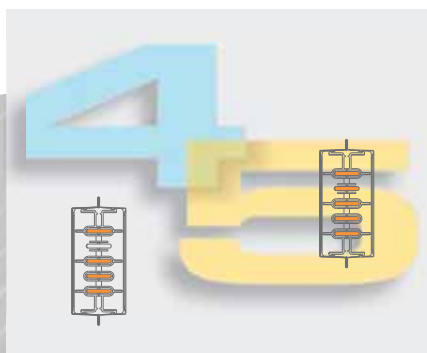


VERSIONS

The MR symbol indicates a busbar with 4 conductors with an equal cross section (3L+N), and the casing acts as the protective earth conductor (PE); the MRf (full) line has 5 conductors with an equal cross section (3L+N+PE).

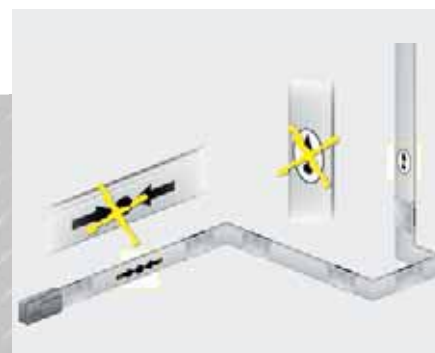
The MR and MRf lines are also available on request in a painted version (RAL to be defined by the customer).

*MR/MRf 1000A Al is painted with RAL 7035



SIMPLE AND RELIABLE

The "monobloc" connection of the MR line is able to compensate for any heat expansion affecting the conductors, thus avoiding the need to insert special expansion elements even in considerably long systems. If the MR line is installed vertically (riser main) there is no need to install busbar thrust units because the monobloc prevents the conductors from sliding.



MAXIMUM STRENGTH

The MR range has been designed and manufactured for heavy industrial environments. The degree of impact-resistance of the casing which houses this line is the maximum stated in IEC EN60068-2-62: IK10.

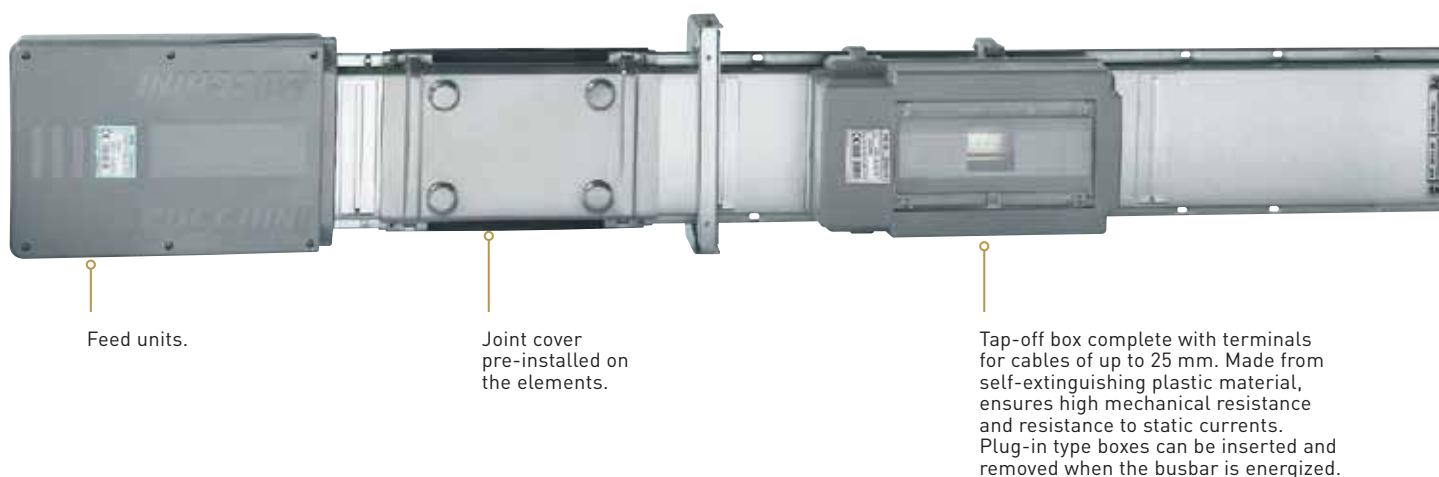


ALUMINIUM AND COPPER RATING

| | | | | | | | | |
|-----------|-----|-----|-----|-----|-----|-----|-----|------|
| Al | 160 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 |
| Cu | - | 250 | 315 | 400 | - | 630 | 800 | 1000 |



TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS



Depending on the different installation requirements Legrand can provide various technical solutions:

- a) 90° elbows: available for carrying out changes of direction both horizontally and vertically. There is a quick connection, as for the straight elements. The standard degree of protection is IP55;
- b) T-type and X-type elements, Z-type double elbows available. The standard degree of protection is IP55;
- c) straight elements with fire barrier (internal + external) S120 (certified for 120min). Tested in laboratories (in compliance with DIN Standards 4102-9 and EN 1366-3) to confirm that, correctly installed, they maintain the intrinsic fire-resistant properties of the wall;

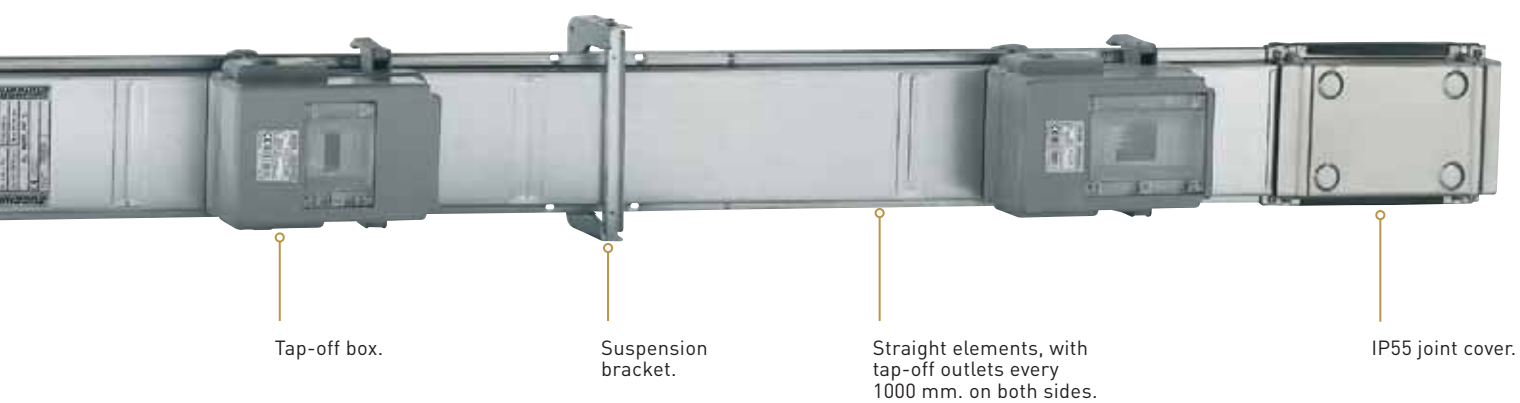
d) straight elements with 5 outlets on one side; they are ideal for riser mains or segments with a large number of derivations;

e) straight elements with 5+5 outlets on two side; they are ideal for data center solutions;

f) straight elements with no outlets, used for energy transport only.

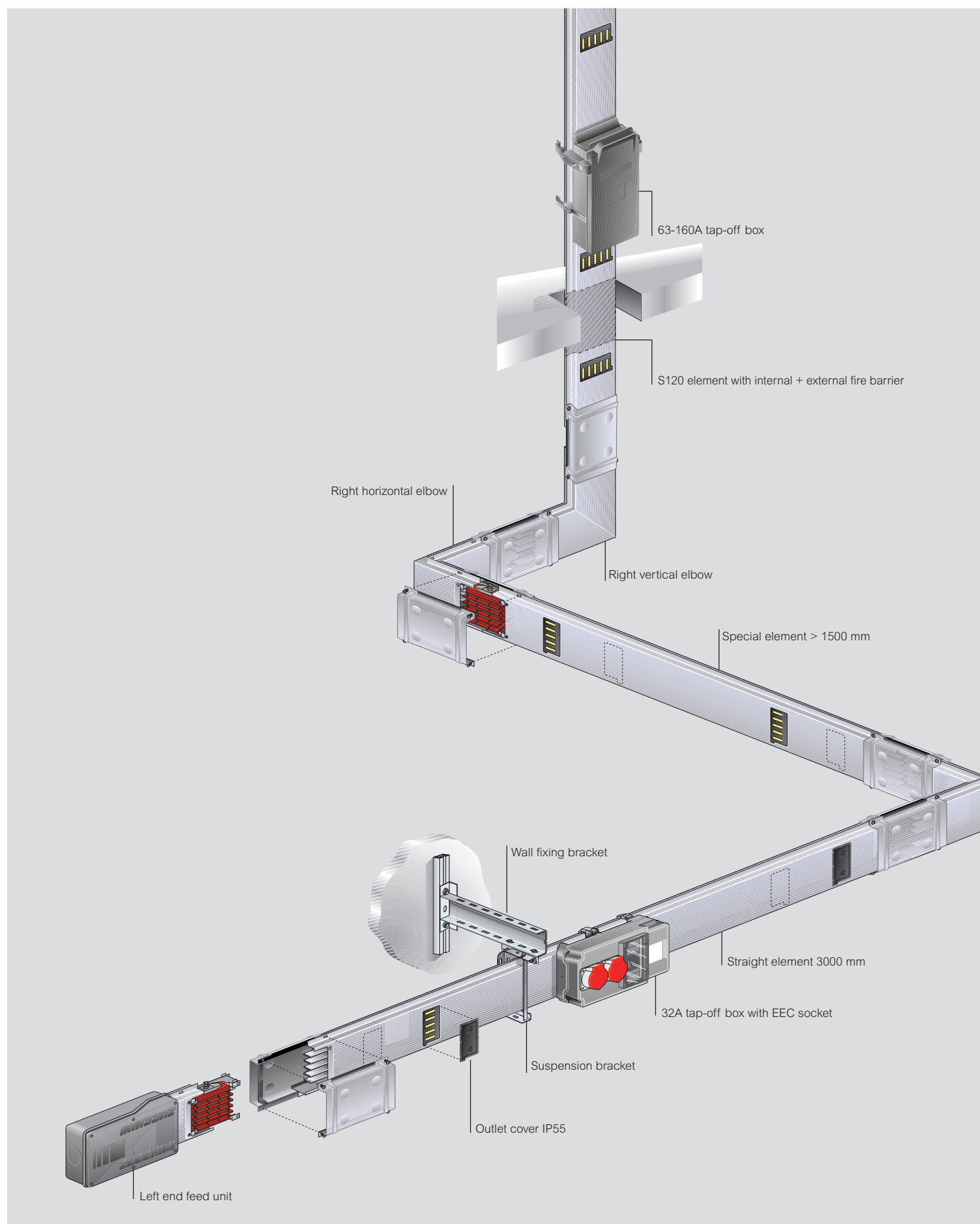
The MR line is even more advantageous in vertical applications (riser mains) as no thrust unit or thermal expansion element is necessary.

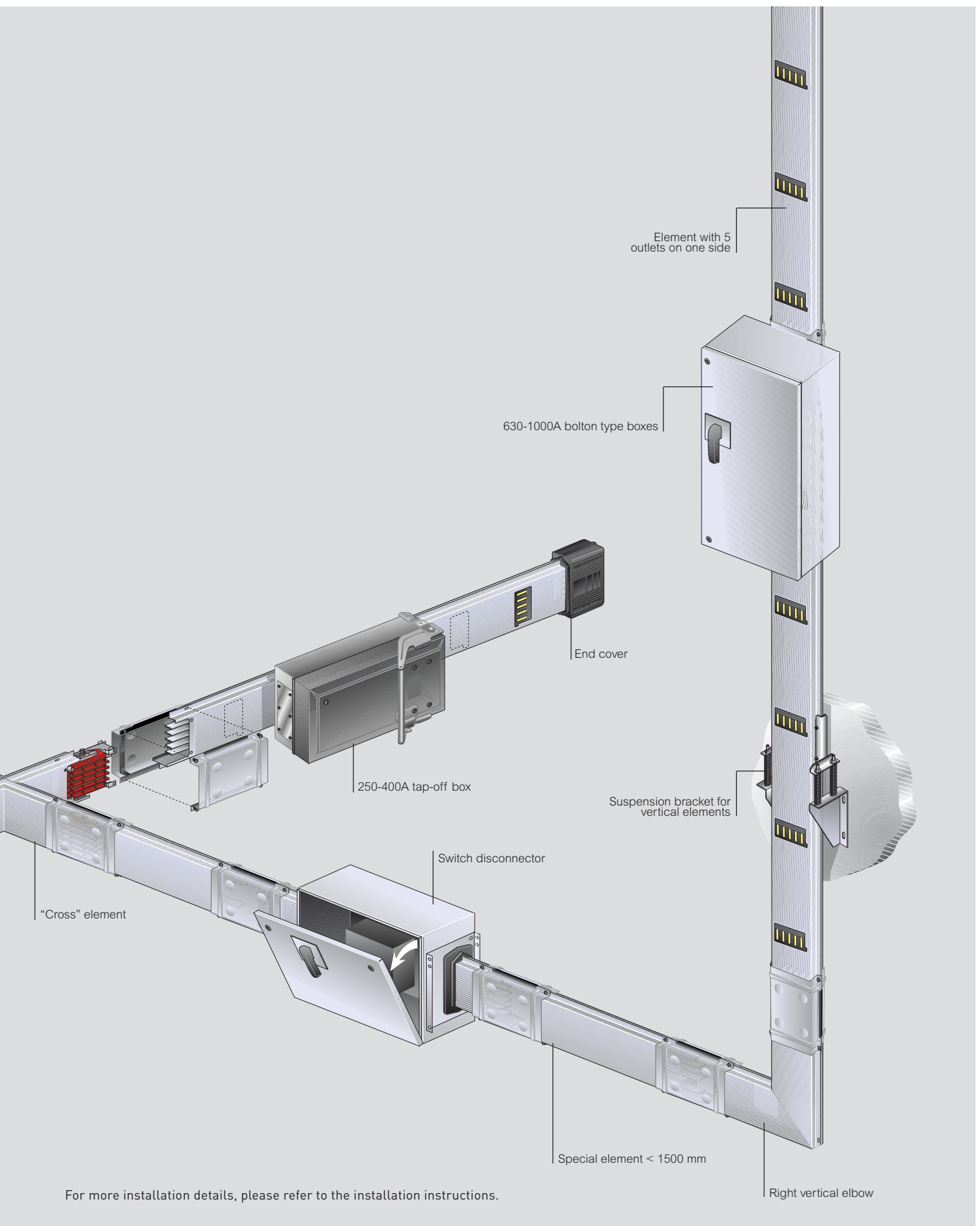
The MR monobloc is designed to compensate the thermal expansions of the conductors.



MEDIUM RATING (MR) 160 - 1000A

line route





MEDIUM RATING (MR) 160 - 1000A

straight elements

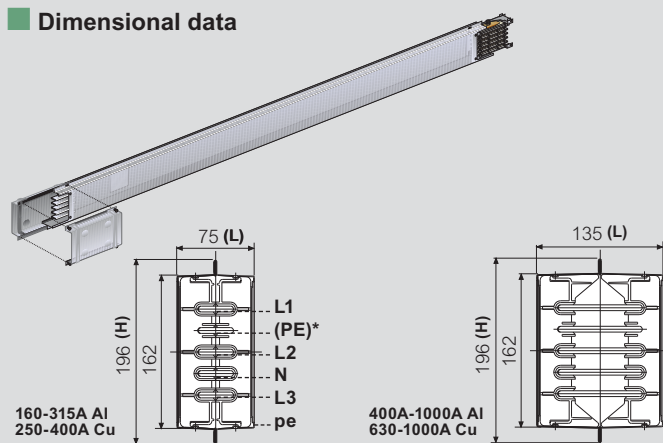


Reference standard: IEC 61439-6
 Reference temperature: 40 °C
 Protection degree: IP55
 Thickness: 0,8 mm;
 Dimension (LxH): 75-135x196mm;
 N° of conductors: 4 with equal section 3P+N or 5 when using MRfull (3P+N+PE)
 Conducting «fire retardant» in accordance with EN 60332-3
 Separation between the conductors by plastic insulators reinforced with 20% glass fiber, which guarantees a degree of V1 self-extinguishing (according to UL94) and conform to the glow-wire test according to IEC 60695-2-10

| Cat.Nos | | Straight elements without windows | |
|----------|----------|-----------------------------------|-------------|
| Al | Cu | In (A) | L (mm) |
| 50400111 | - | 160 | 600 ÷ 1500 |
| 50400112 | 55400112 | 250 | |
| 50400113 | 55400113 | 315 | |
| 50400114 | 55400114 | 400 | |
| 50400118 | - | 500 | |
| 50400115 | 55400115 | 630 | |
| 50400116 | 55400116 | 800 | |
| 50400117 | 55400117 | 1000 | |
| 50400121 | - | 160 | 1501 ÷ 2999 |
| 50400122 | 55400122 | 250 | |
| 50400123 | 55400123 | 315 | |
| 50400124 | 55400124 | 400 | |
| 50400128 | - | 500 | |
| 50400125 | 55400125 | 630 | |
| 50400126 | 55400126 | 800 | |
| 50400127 | 55400127 | 1000 | |
| 50400241 | - | 160 | 3000 |
| 50400242 | 55400242 | 250 | |
| 50400243 | 55400243 | 315 | |
| 50400244 | 55400244 | 400 | |
| 50400248 | - | 500 | |
| 50400245 | 55400245 | 630 | |
| 50400246 | 55400246 | 800 | |
| 50400247 | 55400247 | 1000 | |

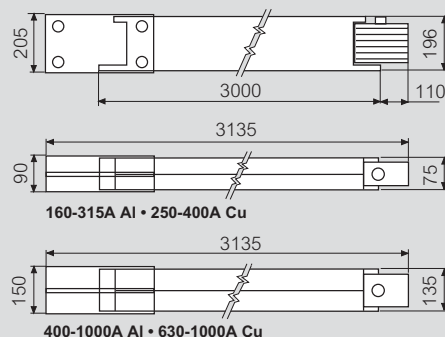
0 - 4 Conductors, galvanized (MR)
 1 - 5 Conductors, galvanized (MRf)
 2 - 4 Conductors, painted (MR-P)
 3 - 5 Conductors, painted (MRf-P)

Dimensional data

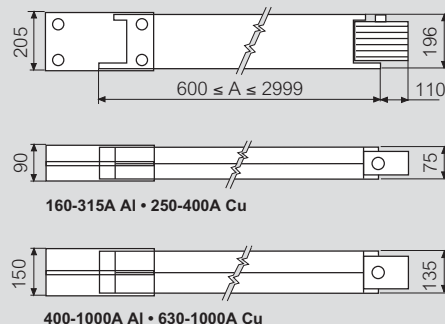


* only on MRf

For straight elements = 3000 mm



For straight elements at measurement from 600 mm to 2999 mm



In your Purchase Order please specify the required length (see page: How to take measurements)

| Al | Weight (kg) | Cu | Weight (kg) | In (A) |
|------------|-------------|------------|-------------|--------|
| 5040 01 11 | 13,6 | - | - | 160 |
| 5040 01 12 | 14,1 | 5540 01 12 | 16,5 | 250 |
| 5040 01 13 | 14,9 | 5540 01 13 | 17,7 | 315 |
| 5040 01 14 | 23,3 | 5540 01 14 | 22,0 | 400 |
| 5040 01 18 | 25,2 | - | - | 500 |
| 5040 01 15 | 26,9 | 5540 01 15 | 34,3 | 630 |
| 5040 01 16 | 28,0 | 5540 01 16 | 42,2 | 800 |
| 5040 01 17 | 30,1 | 5540 01 17 | 47,8 | 1000 |
| 5040 01 21 | 13,6 | - | - | 160 |
| 5040 01 22 | 14,1 | 5540 01 22 | 16,5 | 250 |
| 5040 01 23 | 14,9 | 5540 01 23 | 17,7 | 315 |
| 5040 01 24 | 23,3 | 5540 01 24 | 22,0 | 400 |
| 5040 01 28 | 25,2 | - | - | 500 |
| 5040 01 25 | 26,9 | 5540 01 25 | 34,3 | 630 |
| 5040 01 26 | 28,0 | 5540 01 26 | 42,2 | 800 |
| 5040 01 27 | 30,1 | 5540 01 27 | 47,8 | 1000 |
| 5040 02 41 | 19,9 | - | - | 160 |
| 5040 02 42 | 20,9 | 5540 02 42 | 25,7 | 250 |
| 5040 02 43 | 22,8 | 5540 02 43 | 28,1 | 315 |
| 5040 02 44 | 33,8 | 5540 02 44 | 36,9 | 400 |
| 5040 02 48 | 37,5 | - | - | 500 |
| 5040 02 45 | 41,7 | 5540 02 45 | 56,0 | 630 |
| 5040 02 46 | 44,3 | 5540 02 46 | 72,1 | 800 |
| 5040 02 47 | 46,8 | 5540 02 47 | 83,7 | 1000 |

In the case of **transport of electric energy** is recommended to use SCP busbar duct

MEDIUM RATING (MR) 160 - 1000A

straight elements

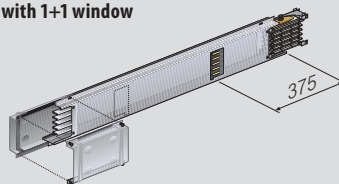


50400104

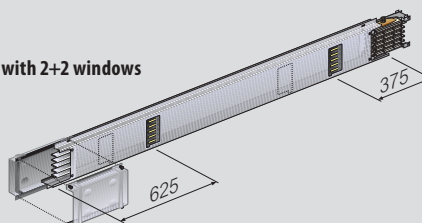
| Cat.Nos | | Straight elements with windows | | |
|----------|----------|--------------------------------|-----------|------------|
| Al | Cu | In (A) | L (mm) | N° windows |
| 50400141 | - | 160 | 1000÷1500 | 1+1 |
| 50400142 | 55400142 | 250 | | |
| 50400143 | 55400143 | 315 | | |
| 50400144 | 55400144 | 400 | | |
| 50400148 | - | 500 | | |
| 50400145 | 55400145 | 630 | | |
| 50400146 | 55400146 | 800 | | |
| 50400147 | 55400147 | 1000 | | |
| 50400151 | - | 160 | 1501÷2999 | 2+2 |
| 50400152 | 55400152 | 250 | | |
| 50400153 | 55400153 | 315 | | |
| 50400154 | 55400154 | 400 | | |
| 50400158 | - | 500 | | |
| 50400155 | 55400155 | 630 | | |
| 50400156 | 55400156 | 800 | | |
| 50400157 | 55400157 | 1000 | | |
| 50400101 | - | 160 | 3000 | 3+3 |
| 50400102 | 55400102 | 250 | | |
| 50400103 | 55400103 | 315 | | |
| 50400104 | 55400104 | 400 | | |
| 50400108 | - | 500 | | |
| 50400105 | 55400105 | 630 | | |
| 50400106 | 55400106 | 800 | | |
| 50400107 | 55400107 | 1000 | | |
| 50400251 | - | 160 | 3000 | 5 |
| 50400252 | 55400252 | 250 | | |
| 50400253 | 55400253 | 315 | | |
| 50400254 | 55400254 | 400 | | |
| 50400258 | - | 500 | | |
| 50400255 | 55400255 | 630 | | |
| 50400256 | 55400256 | 800 | | |
| 50400257 | 55400257 | 1000 | | |

Dimensional data

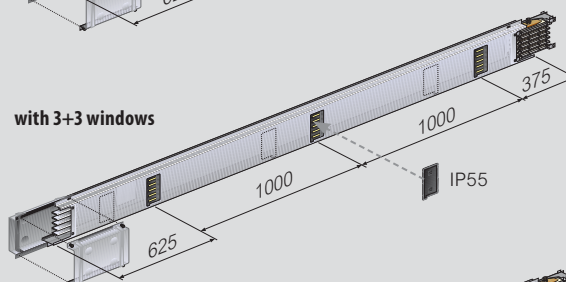
with 1+1 window



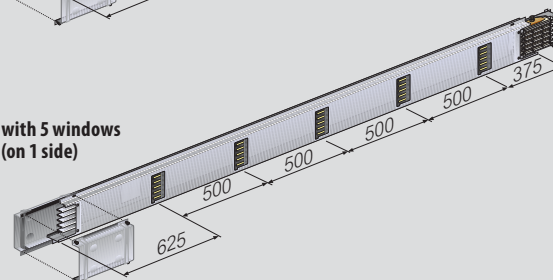
with 2+2 windows



with 3+3 windows



with 5 windows
(on 1 side)



| 1+1 windows | | | | 2+2 windows | | | |
|-------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| Al | Weight (kg) | Cu | Weight (kg) | Al | Weight (kg) | Cu | Weight (kg) |
| 5040 01 41 | 13,6 | - | - | 5040 01 51 | 13,6 | - | - |
| 5040 01 42 | 14,1 | 5540 01 42 | 16,5 | 5040 01 52 | 14,1 | 5540 01 52 | 16,5 |
| 5040 01 43 | 14,9 | 5540 01 43 | 17,7 | 5040 01 53 | 14,9 | 5540 01 53 | 17,7 |
| 5040 01 44 | 23,3 | 5540 01 44 | 22,0 | 5040 01 54 | 23,3 | 5540 01 54 | 22,0 |
| 5040 01 48 | 25,2 | - | - | 5040 01 58 | 25,2 | - | - |
| 5040 01 45 | 26,9 | 5540 01 45 | 34,3 | 5040 01 55 | 26,9 | 5540 01 55 | 34,3 |
| 5040 01 46 | 28,0 | 5540 01 46 | 42,2 | 5040 01 56 | 28,0 | 5540 01 56 | 42,2 |
| 5040 01 47 | 30,1 | 5540 01 47 | 47,8 | 5040 01 57 | 30,1 | 5540 01 57 | 47,8 |

| 3+3 windows | | | | 5 windows on 1 side | | | |
|-------------|-------------|------------|-------------|---------------------|-------------|------------|-------------|
| Al | Weight (kg) | Cu | Weight (kg) | Al | Weight (kg) | Cu | Weight (kg) |
| 5040 01 01 | 19,9 | - | - | 5040 02 51 | 19,9 | - | - |
| 5040 01 02 | 20,9 | 5540 01 02 | 25,7 | 5040 02 52 | 20,9 | 5540 02 52 | 25,7 |
| 5040 01 03 | 22,8 | 5540 01 03 | 28,1 | 5040 02 53 | 22,8 | 5540 02 53 | 28,1 |
| 5040 01 04 | 33,8 | 5540 01 04 | 36,9 | 5040 02 54 | 33,8 | 5540 02 54 | 36,9 |
| 5040 01 08 | 37,5 | - | - | 5040 02 58 | 37,5 | - | - |
| 5040 01 05 | 41,7 | 5540 01 05 | 56,0 | 5040 02 55 | 41,7 | 5540 02 55 | 56,0 |
| 5040 01 06 | 44,3 | 5540 01 06 | 72,1 | 5040 02 56 | 44,3 | 5540 02 56 | 72,1 |
| 5040 01 07 | 46,8 | 5540 01 07 | 83,7 | 5040 02 57 | 46,8 | 5540 02 57 | 83,7 |

0 - 4 Conductors, galvanized (MR)
1 - 5 Conductors, galvanized (MRf)
2 - 4 Conductors, painted (MR-P)
3 - 5 Conductors, painted (MRf-P)

MEDIUM RATING (MR) 160 - 1000A

indoor applications - Data Center straight elements (IP40)



| Cat.Nos | | Straight elements with IP40 degree protection | | |
|----------|----------|---|--------|------------|
| Al | Cu | In (A) | L (mm) | N° windows |
| 50400261 | - | 160 | 3000 | 5+5 |
| 50400262 | 55400262 | 250 | | |
| 50400263 | 55400263 | 315 | | |
| 50400264 | 55400264 | 400 | | |
| 50400268 | - | 500 | | |
| 50400265 | 55400265 | 630 | | |
| 50400266 | 55400266 | 800 | | |
| 50400267 | 55400267 | 1000 | | |

| | | End cover IP40 | |
|----------|------------------------|----------------|-------------|
| | | | Weigth (kg) |
| 50403103 | MR end cover IP40 LOW | | 0,77 |
| 50403104 | MR end cover IP40 HIGH | | 1,13 |

For the FEED UNIT look at dedicated page

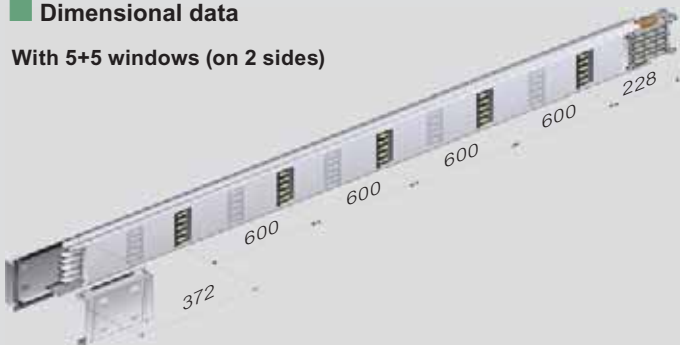
- Low: from 160A to 315A Al
from 250A to 400A Cu
High: from 400A to 1000A Al
from 630A to 1000A Cu

- 0 - 4 Conductors, galvanized (MR)
1 - 5 Conductors, galvanized (MRf)
2 - 4 Conductors, painted (MR-P)
3 - 5 Conductors, painted (MRf-P)

Red codes: new items

Dimensional data

With 5+5 windows (on 2 sides)

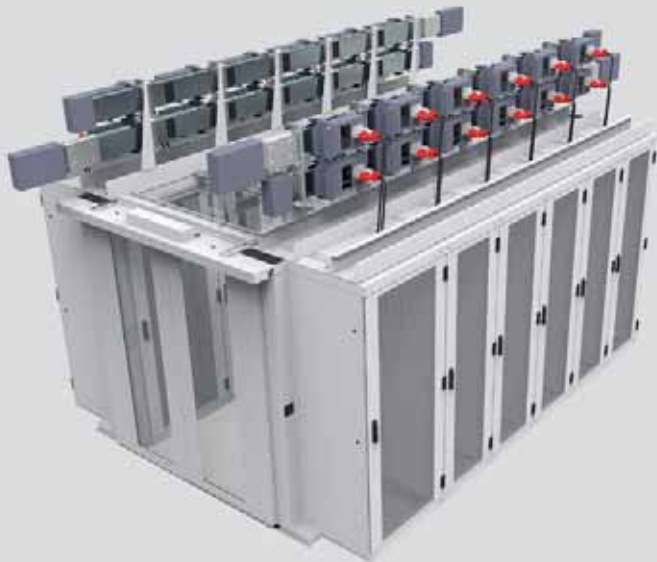
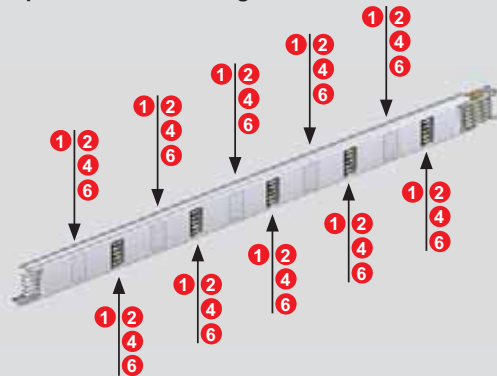


Element 5+5 windows (on 2 sides)
wheelbase of 600 mm

 The 600 mm fixing centre 5+5 windows element is available with an IP40 protection degree

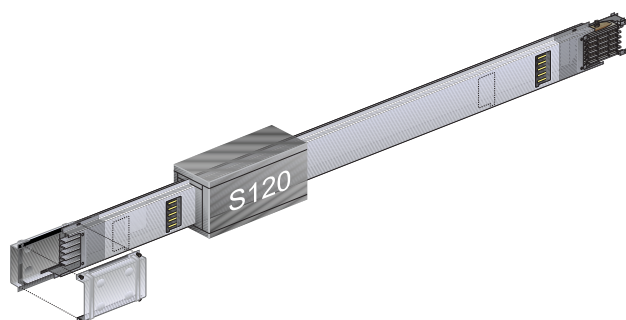
| 5+5 windows on 2 side | | | |
|-----------------------|-------------|------------|-------------|
| Al | Weight (kg) | Cu | Weight (kg) |
| 5040 02 61 | 20,1 | - | - |
| 5040 02 62 | 22 | 5540 02 62 | 26,8 |
| 5040 02 63 | 23,9 | 5540 02 63 | 29,2 |
| 5040 02 64 | 34,9 | 5540 02 64 | 38 |
| 5040 02 68 | 38,6 | - | - |
| 5040 02 65 | 42,8 | 5540 02 65 | 57,1 |
| 5040 02 66 | 45,4 | 5540 02 66 | 73,2 |
| 5040 02 67 | 47,9 | 5540 02 67 | 84,8 |

Tap-off boxes mounting



MEDIUM RATING (MR) 160 - 1000A

straight elements



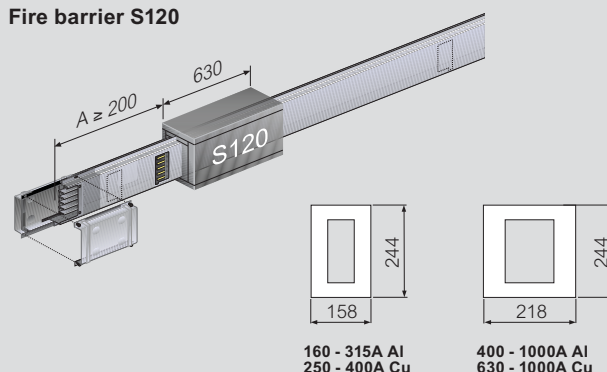
| Cat.Nos | | | | Fire barrier S120 |
|----------|----------|----------|----------|-------------------|
| Al | | Cu | | |
| External | Internal | External | Internal | |
| 554EFB01 | 554IFB01 | - | | 160 |
| 554EFB01 | 554IFB02 | 554EFB01 | 554IFB01 | 250 |
| 554EFB01 | 554IFB03 | 554EFB01 | 554IFB02 | 315 |
| 554EFB02 | 554IFB04 | 554EFB01 | 554IFB05 | 400 |
| 554EFB02 | 554IFB06 | - | | 500 |
| 554EFB02 | 554IFB07 | 554EFB02 | 554IFB04 | 630 |
| 554EFB02 | 554IFB08 | 554EFB02 | 554IFB06 | 800 |
| 554EFB02 | 554IFB09 | 554EFB02 | 554IFB07 | 1000 |

| | Conductors | Code |
|-----|------------|---------|
| MR | 4 | -----0- |
| MRf | 5 | -----1- |

0 - 4 Conductors, galvanized (MR)
1 - 5 Conductors, galvanized (MRf)
2 - 4 Conductors, painted (MR-P)
3 - 5 Conductors, painted (MRf-P)

Dimensional data

Fire barrier S120



When ordering, specify the dimension A = mm of the element that will be equipped with the fire barrier.

In your Purchase Order please specify the required position of the internal fire barrier. Take the measurement as shown in the Figure. The internal fire barrier is 630mm long.

MEDIUM RATING (MR)

elbows

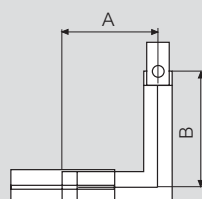


| Cat.Nos | | | | Elbows | |
|-------------------------|----------|---|----------|--------|---------------------|
| Standard (300+300mm) | | At measure * see dimension (mm) MIN & MAX | | In (A) | Type |
| Al | Cu | Al | Cu | | |
| 50400301 | - | 50400321 | - | 160 | Horizontal Right |
| 50400302 | 55400302 | 50400322 | 55400322 | 250 | |
| 50400303 | 55400303 | 50400323 | 55400323 | 315 | |
| 50400304 | 55400304 | 50400324 | 55400324 | 400 | |
| 50400308 | - | 50400328 | - | 500 | |
| 50400305 | 55400305 | 50400325 | 55400325 | 630 | |
| 50400306 | 55400306 | 50400326 | 55400326 | 800 | |
| 50400307 | 55400307 | 50400327 | 55400327 | 1000 | Horizontal Left |
| 50400311 | - | 50400331 | - | 160 | |
| 50400312 | 55400312 | 50400332 | 55400332 | 250 | |
| 50400313 | 55400313 | 50400333 | 55400333 | 315 | |
| 50400314 | 55400314 | 50400334 | 55400334 | 400 | |
| 50400318 | - | 50400338 | - | 500 | |
| 50400315 | 55400315 | 50400335 | 55400335 | 630 | |
| 50400316 | 55400316 | 50400336 | 55400336 | 800 | Vertical Right |
| 50400317 | 55400317 | 50400337 | 55400337 | 1000 | |
| 50400401 | - | 50400421 | - | 160 | |
| 50400402 | 55400402 | 50400422 | 55400422 | 250 | |
| 50400403 | 55400403 | 50400423 | 55400423 | 315 | |
| 50400404 | 55400404 | 50400424 | 55400424 | 400 | |
| 50400408 | - | 50400428 | - | 500 | |
| 50400405 | 55400405 | 50400425 | 55400425 | 630 | |
| 50400406 | 55400406 | 50400426 | 55400426 | 800 | Vertical Left |
| 50400407 | 55400407 | 50400427 | 55400427 | 1000 | |
| 50400411 | - | 50400431 | - | 160 | |
| 50400412 | 55400412 | 50400432 | 55400432 | 250 | |
| 50400413 | 55400413 | 50400433 | 55400433 | 315 | |
| 50400414 | 55400414 | 50400434 | 55400434 | 400 | |
| 50400418 | - | 50400438 | - | 500 | |
| 50400415 | 55400415 | 50400435 | 55400435 | 630 | |
| 50400416 | 55400416 | 50400436 | 55400436 | 800 | |
| 50400417 | 55400417 | 50400437 | 55400437 | 1000 | |

0 - 4 Conductors, galvanized (MR)
1 - 5 Conductors, galvanized (MRf)
2 - 4 Conductors, painted (MR-P)
3 - 5 Conductors, painted (MRf-P)

Dimensional data

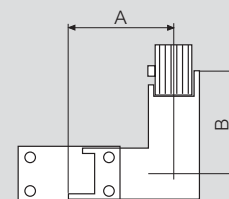
Horizontal Elbow



| Dimension (mm) | |
|----------------|-----|
| A | B |
| 250 | 899 |
| 250 | 899 |

Elbows standard:
A = 300 mm
B = 300 mm

Vertical Elbow

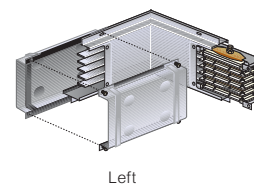
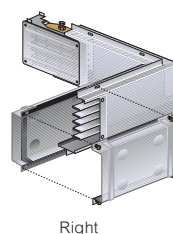


| Dimension (mm) | |
|----------------|-----|
| A | B |
| 300 | 899 |
| 300 | 899 |

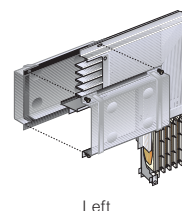
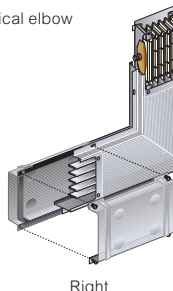
| Portata (A) | Al Weight (kg) | Cu Weight (kg) |
|----------------|-------------------|-------------------|
| 160 | 8,1 | - |
| 250 | 8,2 | 9,2 |
| 315 | 8,4 | 9,6 |
| 400 | 14,5 | 11,0 |
| 500 | 14,9 | - |
| 630 | 15,4 | 18,7 |
| 800 | 15,7 | 21,4 |
| 1000 | 16,0 | 23,3 |

Type of elbows

Horizontal elbow



Vertical elbow



* For all the non standard angles, it is possible to have only one of the two sides in size exceeding 600 mm. For example, when ordering an horizontal angle with size A=650 mm, the B size will have to be ≤ 600 mm

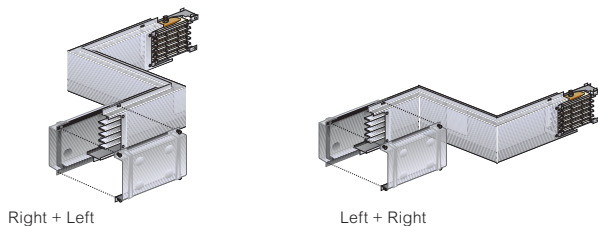
In your purchase order please specify the required lenght
(see page: How to take measurements).

MEDIUM RATING (MR)

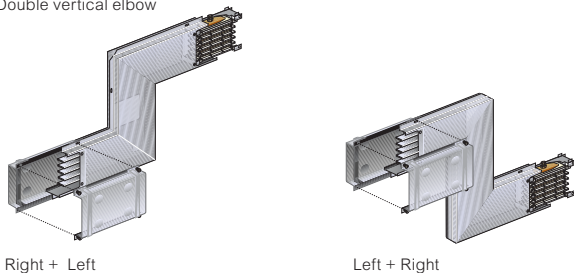
elbows

Type of double elbows on request

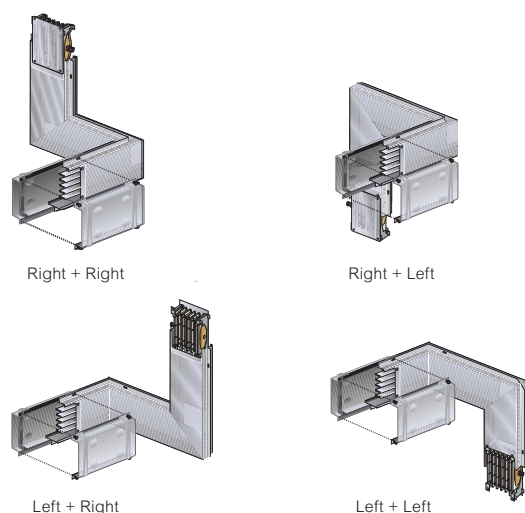
Double horizontal elbow



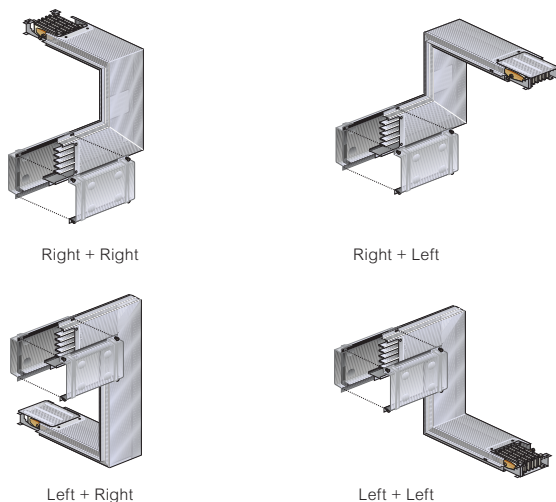
Double vertical elbow



Double horizontal elbow + vertical elbow

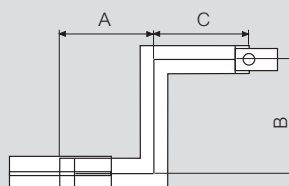


Double vertical elbow + horizontal elbow



Dimensional data

Double Horizontal

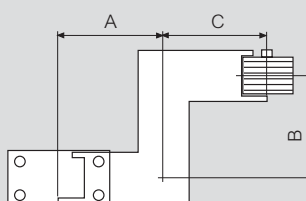


Dimension (mm)

| | MIN | MAX |
|---|-----|-----|
| A | 250 | 899 |
| B | 100 | 599 |
| C | 250 | 899 |

| In (A) | Weight (kg) for Double Horizontal Double Vertical | |
|--------|---|-------|
| | Al | Cu |
| 160 | 10,29 | - |
| 250 | 10,55 | 12,23 |
| 315 | 11,06 | 12,97 |
| 400 | 18,37 | 15,72 |
| 500 | 19,50 | - |
| 630 | 20,55 | 25,77 |
| 800 | 21,20 | 30,88 |
| 1000 | 21,80 | 34,55 |

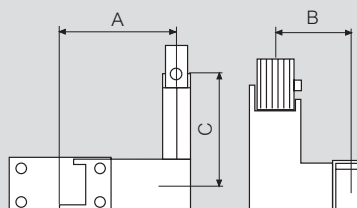
Double Vertical



Dimension (mm)

| | MIN | MAX |
|---|-----|-----|
| A | 300 | 899 |
| B | 100 | 599 |
| C | 300 | 899 |

Double Horizontal + Vertical

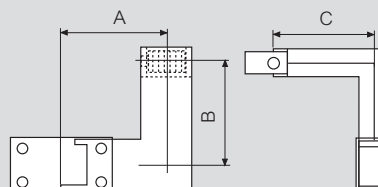


Dimension (mm)

| | MIN | MAX |
|---|-----|-----|
| A | 250 | 899 |
| B | 200 | 599 |
| C | 300 | 899 |

| In (A) | Weight (kg) for Double Horizontal+Vertical and Double Vertical+Horizontal | |
|--------|---|-------|
| | Al | Cu |
| 160 | 10,29 | - |
| 250 | 10,55 | 12,23 |
| 315 | 11,06 | 12,97 |
| 400 | 18,37 | 15,72 |
| 500 | 19,50 | - |
| 630 | 20,55 | 25,77 |
| 800 | 21,20 | 30,88 |
| 1000 | 21,80 | 34,55 |

Double Vertical + Horizontal



Dimension (mm)

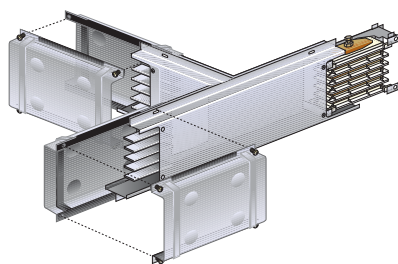
| | MIN | MAX |
|---|-----|-----|
| A | 300 | 899 |
| B | 200 | 599 |
| C | 250 | 899 |

* For all the non standard elbow, it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering a double horizontal angle with size A=650 mm, the B and C size will have to be ≤ 600 mm

Special dimensions are available on request, please contact Legrand.

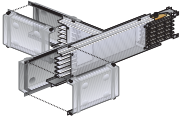
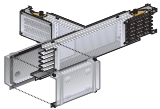


MEDIUM RATING (MR)

horizontal "T" elements



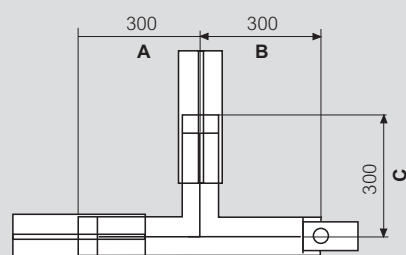
50400704

The various versions allow any type of path and are different from the monoblocs position and branch point. Special dimensions are available on request.

| Cat.Nos | | Horizontal standard T elements (300+300+300mm) | |
|------------|------------|---|--|
| Al | Cu | In (A) | Type |
| 5040 07 01 | - | 160 |  Right 1 |
| 5040 07 02 | 5540 07 02 | 250 | |
| 5040 07 03 | 5540 07 03 | 315 | |
| 5040 07 04 | 5540 07 04 | 400 | |
| 5040 07 08 | - | 500 | |
| 5040 07 05 | 5540 07 05 | 630 | |
| 5040 07 07 | 5540 07 06 | 800 | |
| 5040 07 07 | 5540 07 07 | 1000 | |
| 5040 07 11 | - | 160 |  Right 2 |
| 5040 07 12 | 5540 07 12 | 250 | |
| 5040 07 13 | 5540 07 13 | 315 | |
| 5040 07 14 | 5540 07 14 | 400 | |
| 5040 07 18 | - | 500 | |
| 5040 07 15 | 5540 07 15 | 630 | |
| 5040 07 17 | 5540 07 16 | 800 | |
| 5040 07 17 | 5540 07 17 | 1000 | |
| 5040 07 21 | - | 160 |  Left 1 |
| 5040 07 22 | 5540 07 22 | 250 | |
| 5040 07 23 | 5540 07 23 | 315 | |
| 5040 07 24 | 5540 07 24 | 400 | |
| 5040 07 28 | - | 500 | |
| 5040 07 25 | 5540 07 25 | 630 | |
| 5040 07 27 | 5540 07 26 | 800 | |
| 5040 07 27 | 5540 07 27 | 1000 | |
| 5040 07 31 | - | 160 |  Left 2 |
| 5040 07 32 | 5540 07 32 | 250 | |
| 5040 07 33 | 5540 07 33 | 315 | |
| 5040 07 34 | 5540 07 34 | 400 | |
| 5040 07 38 | - | 500 | |
| 5040 07 35 | 5540 07 35 | 630 | |
| 5040 07 37 | 5540 07 36 | 800 | |
| 5040 07 37 | 5540 07 37 | 1000 | |

0 - 4 Conductors, galvanized (MR)
 1 - 5 Conductors, galvanized (MRf)
 2 - 4 Conductors, painted (MR-P)
 3 - 5 Conductors, painted (MRf-P)

Dimensional data



Dimension (mm)
MIN MAX
A 300 899
B 300 899
C 300 899

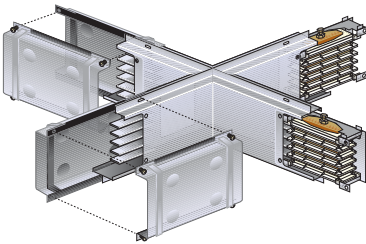
| In (A) | Weight (kg) | |
|--------|-------------|------|
| | Al | Cu |
| 160 | 11,2 | - |
| 250 | 11,4 | 12,8 |
| 315 | 11,8 | 13,4 |
| 400 | 18,4 | 15,7 |
| 500 | 19,5 | - |
| 630 | 20,0 | 24,4 |
| 800 | 20,5 | 28,5 |
| 1000 | 20,5 | 31,3 |

* For non standard T elements, it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering an horizontal T element with size A=650 mm, B and C sizes will have to be ≤ 600 mm

For horizontal "T" special dimensions (not standard) and vertical "T" elements, please contact Legrand.

MEDIUM RATING (MR)

cross elements



50403008

| Cat.Nos | |
|----------|----------|
| Al | Cu |
| 50403001 | - |
| 50403002 | 55403002 |
| 50403003 | 55403003 |
| 50403004 | 55403004 |
| 50403008 | - |
| 50403005 | 55403005 |
| 50403006 | 55403006 |
| 50403007 | 55403007 |

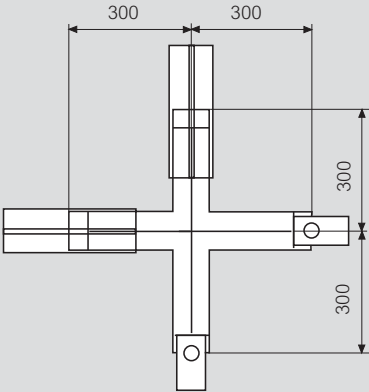
Cross standard elements
(300+300+300+300mm)

In (A)

160
250
315
400
500
630
800
1000

Special dimensions (not standard) are available on request, please contact Legrand.

Dimensional data

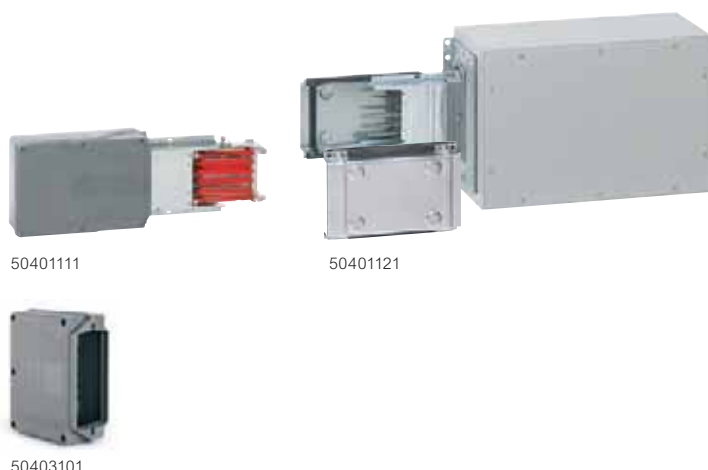


| In (A) | Weight (kg) | |
|--------|-------------|------|
| | Al | Cu |
| 160 | 15,5 | - |
| 250 | 15,7 | 17,6 |
| 315 | 16,1 | 18,4 |
| 400 | 27,5 | 21,1 |
| 500 | 29,1 | - |
| 630 | 29,3 | 35,2 |
| 800 | 29,5 | 40,2 |
| 1000 | 29,9 | 43,7 |

0 - 4 Conductors, galvanized (MR)
1 - 5 Conductors, galvanized (MRf)
2 - 4 Conductors, painted (MR-P)
3 - 5 Conductors, painted (MRf-P)

MEDIUM RATING (MR)

feed unit



| Cat.Nos | | Feed unit | | |
|----------|----------|-----------|-------------|--------------|
| Al | Cu | In (A) | Description | Type |
| 50401101 | - | 160 | | Right |
| 50401102 | 55401102 | 250 | | |
| 50401111 | - | 160 | | |
| 50401112 | 55401112 | 250 | | |
| 50401121 | - | 160 | | Left |
| 50401122 | 55401122 | 250 | | |
| 50401123 | 55401123 | 315 | | |
| 50401124 | 55401124 | 400 | | |
| 50401128 | - | 500 | | |
| 50401125 | 55401125 | 630 | | |
| 50401126 | 55401126 | 800 | | |
| 50401127 | 55401127 | 1000 | | Right |
| 50401131 | - | 160 | | |
| 50401132 | 55401132 | 250 | | |
| 50401133 | 55401133 | 315 | | |
| 50401134 | 55401134 | 400 | | |
| 50401138 | - | 500 | | |
| 50401135 | 55401135 | 630 | | |
| 50401136 | 55401136 | 800 | | Left |
| 50401137 | 55401137 | 1000 | | |
| 50401201 | - | 160 | | Intermediate |
| 50401202 | 55401202 | 250 | | |
| 50401203 | 55401203 | 315 | | |
| 50401204 | 55401204 | 400 | | |
| 50401208 | - | 500 | | |
| 50401205 | 55401205 | 630 | | |
| 50401206 | 55401206 | 800 | | |
| 50401207 | 55401207 | 1000 | | |

The box is shipped with its body part positioned on the inside to reduce its overall dimensions. Take it out and screw it into the position shown here. The dimensions of the bars and holes are described in the corresponding rating of the Board/Transformer on the next page.

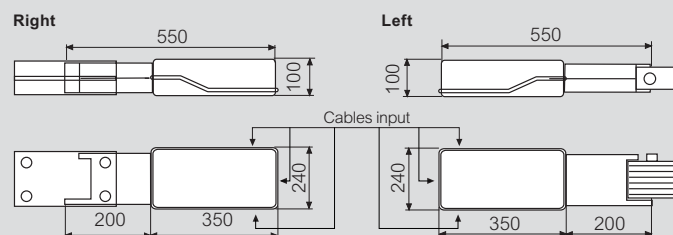
| | |
|----------|---|
| 50403101 | End cover IP55* for bars in Cu of 250-315-400A and Al 160-250-315A |
| 50403102 | for bars in Cu of 630-800-1000A and Al 400-500-630-800-1000A |

*Suitable for all MR versions.

Ensures the closure and the IP55 degree of protection (EN 60529).

Dimensional data

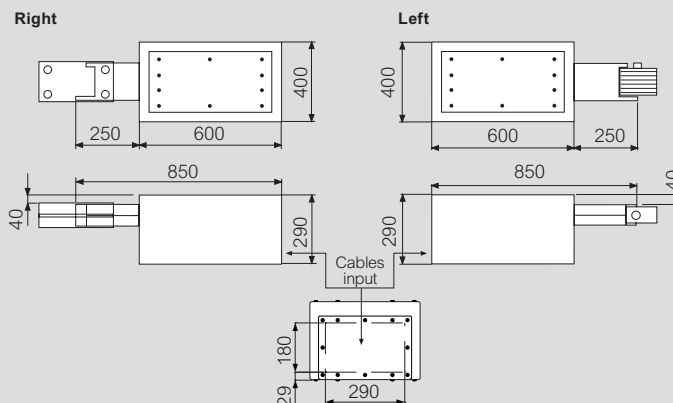
Plastic Feed unit



| Item code Al | Weight (kg) | In (A) | Item code Cu | Weight (kg) |
|--------------|-------------|--------|--------------|-------------|
| 5040 11 01 | 5,70 | 160 | - | - |
| 5040 11 02 | 5,85 | 250 | 5540 11 02 | 6,10 |
| 5040 11 11 | 6,80 | 160 | - | - |
| 5040 11 12 | 6,85 | 250 | 5540 11 12 | 7,20 |

Cable connection: max. sect. (3x120mm² + 1x70mm²) or (3x150mm²) max PG 48

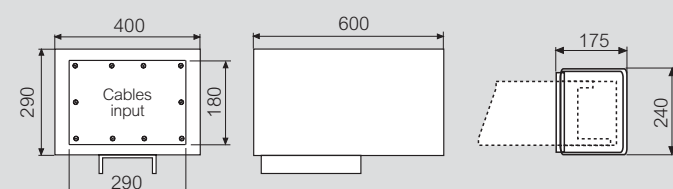
Metal Feed unit



Upon request, the feed units are available with AC23 switch disconnector installed.

| Item code Al | Weight (kg) | In (A) | Item code Cu | Weight (kg) |
|--------------|-------------|--------|--------------|-------------|
| 5040 11 21 | 16,64 | 160 | - | - |
| 5040 11 22 | 16,76 | 250 | 5540 11 22 | 17,37 |
| 5040 11 23 | 17,03 | 315 | 5540 11 23 | 17,70 |
| 5040 11 24 | 18,32 | 400 | 5540 11 24 | 18,88 |
| 5040 11 28 | 20,00 | 500 | - | - |
| 5040 11 25 | 19,43 | 630 | 5540 11 25 | 21,17 |
| 5040 11 26 | 19,80 | 800 | 5540 11 26 | 23,30 |
| 5040 11 27 | 20,20 | 1000 | 5540 11 27 | 24,83 |
| 5040 11 31 | 17,74 | 160 | - | - |
| 5040 11 32 | 17,76 | 250 | 5540 11 32 | 18,47 |
| 5040 11 33 | 17,83 | 315 | 5540 11 33 | 18,70 |
| 5040 11 34 | 23,22 | 400 | 5540 11 34 | 19,58 |
| 5040 11 38 | 23,20 | 500 | - | - |
| 5040 11 35 | 23,63 | 630 | 5540 11 35 | 26,07 |
| 5040 11 36 | 23,70 | 800 | 5540 11 36 | 27,80 |
| 5040 11 37 | 24,00 | 1000 | 5540 11 37 | 29,03 |

Intermediate Metal Feed unit



| Item code Al | Weight (kg) | Item code Cu |
|--------------|-------------|--------------|
| 5040 12 01 | 17,3 | - |
| 5040 12 02 | 18,4 | 5540 12 02 |
| 5040 12 03 | 17,0 | 5540 12 03 |
| 5040 12 04 | 22,06 | 5540 12 04 |
| 5040 12 08 | 22,65 | - |
| 5040 12 05 | 23,24 | 5540 12 05 |
| 5040 12 06 | 23,02 | 5540 12 06 |
| 5040 12 07 | 24,70 | 5540 12 07 |

Used to power a busbar from any intermediate point on the connection between two elements. The intermediate end feed unit is also used for reducing the voltage drop of the line.

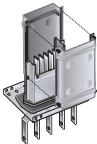
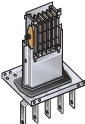
MEDIUM RATING (MR)

feed unit for electric board/ transformer



50401001

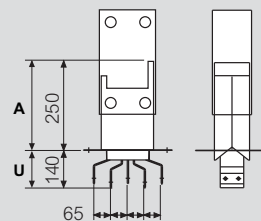
Feed unit for direct connection of the busbar to an electric board or to the LV terminals of a distribution transformer.

| Cat.Nos | | Feed unit for electric board/ transformer | | |
|----------|----------|---|---|-------|
| Al | Cu | In (A) | Description | Type |
| 50401001 | - | 160 |  | Right |
| 50401002 | 55401002 | 250 | | |
| 50401003 | 55401003 | 315 | | |
| 50401004 | 55401004 | 400 | | |
| 50401008 | - | 500 | | |
| 50401005 | 55401005 | 630 | | |
| 50401006 | 55401006 | 800 | | |
| 50401007 | 55401007 | 1000 | electric board/ transformer  | Left |
| 50401011 | - | 160 | | |
| 50401012 | 55401012 | 250 | | |
| 50401013 | 55401013 | 315 | | |
| 50401014 | 55401014 | 400 | | |
| 50401018 | - | 500 | | |
| 50401015 | 55401015 | 630 | | |
| 50401016 | 55401016 | 800 | | |
| 50401017 | 55401017 | 1000 | | |

Dimensional data

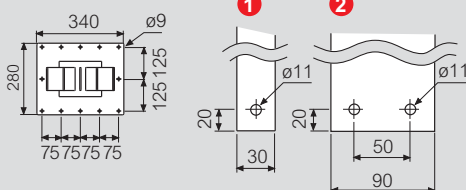
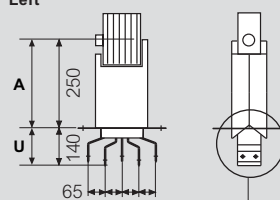
Feed unit for electric board/ transformer

Right



| Dimension (mm) | MIN MAX | |
|----------------|---------|-----|
| | A | 250 |
| U | 140 | 200 |

Left



| Item code Al | Weight (kg) | In (A) | Item code Cu | Weight (kg) |
|-----------------|----------------|-----------|-----------------|----------------|
| 5040 10 01 | 4,9 | 160 | - | - |
| 5040 10 02 | 5,1 | 250 | 5540 10 02 | 5,0 |
| 5040 10 03 | 5,3 | 315 | 5540 10 03 | 6,7 |
| 5040 10 04 | 6,4 | 400 | 5540 10 04 | 9,2 |
| 5040 10 08 | 6,9 | 500 | - | - |
| 5040 10 05 | 7,5 | 630 | 5540 10 05 | 9,3 |
| 5040 10 06 | 7,9 | 800 | 5540 10 06 | 11,4 |
| 5040 10 07 | 8,3 | 1000 | 5540 10 07 | 12,9 |
| 5040 10 11 | 6,0 | 160 | - | - |
| 5040 10 12 | 6,1 | 250 | 5540 10 12 | 6,7 |
| 5040 10 13 | 6,2 | 315 | 5540 10 13 | 7,0 |
| 5040 10 14 | 11,3 | 400 | 5540 10 14 | 7,8 |
| 5040 10 18 | 11,4 | 500 | - | - |
| 5040 10 15 | 11,7 | 630 | 5540 10 15 | 14,2 |
| 5040 10 16 | 11,8 | 800 | 5540 10 16 | 15,9 |
| 5040 10 17 | 12,5 | 1000 | 5540 10 17 | 17,1 |

| | Al | Cu |
|-----------------------|-------|--------|
| MR ① | 160A | - |
| | 250A | 250 A |
| | 315A | 315 A |
| MR ② | 400A | 400 A |
| | 500A | - |
| | 630A | 630 A |
| | 800A | 800 A |
| | 1000A | 1000 A |

- 0 - 4 Conductors, galvanized (MR)
- 1 - 5 Conductors, galvanized (MRf)
- 2 - 4 Conductors, painted (MR-P)
- 3 - 5 Conductors, painted (MRf-P)

MEDIUM RATING (MR)

tap-off boxes without disconnecting device



50414061



50414063

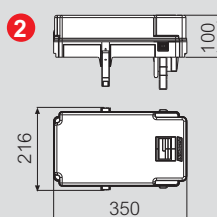
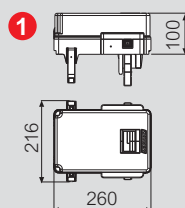


50414075

| Cat.Nos | Tap-off boxes standard version | | |
|-----------|--|--------|------------|
| | Description | In (A) | N° of mod. |
| 50414061 | 1A DIN rail | 32 | 8 |
| 50414062 | 1A With fuse carrier 3xCH10 - 3x10.3 x 38 mm (fuses not included) | | - |
| 50414063 | 1A Transparent door and DIN Rail | | 4 |
| 50414064 | 1A Transparent door and DIN Rail | | 8 |
| 50414068* | 1B With fuse carrier and DIN Rail - 3xD01 (fuses not included) | 16 | 8 |
| 50414069* | 1A With fuse carrier and DIN Rail - 3xD02 (fuses not included) | 32 | 8 |
| 50414071 | 2A DIN rail | | 12 |
| 50414075 | 2A Transparent door and DIN Rail | | 12 |

*Cable gland included

Dimensional data



Energy withstand 400 x 10³ A²s

Power loss

Version **1** 16W

2 20W

MW: modules 17,5 mm.

| Version | | |
|------------|------|-------------|
| Item code | Fig. | Weight (kg) |
| 5041 40 61 | 1A | 1,60 |
| 5041 40 62 | 1A | 1,75 |
| 5041 40 63 | 1A | 1,70 |
| 5041 40 64 | 1A | 1,70 |
| 5041 40 68 | 1B | 2,07 |
| 5041 40 69 | 1A | 2,15 |
| 5041 40 71 | 2A | 1,90 |
| 5041 40 75 | 2A | 2,05 |

The fuses are not included in the Tap-off boxes

Type of Tap-off boxes

1A



50414061

1A



50414062

1A



50414063

1A



50414064

1B



50414068*

1A



50414069*

2A



50414071

2A



50414075

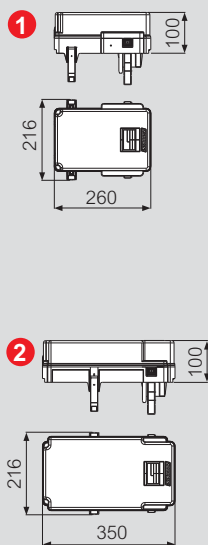
MEDIUM RATING (MR)

tap-off boxes without disconnecting device

| Cat.Nos | Description | In (A) |
|-----------|---|--------|
| 50414111* | 1C 3xD01 - Fuse carrier, transparent door, 3x16A german standard sockets (Schuko) | 16 A |
| 50414130 | 1D 4P 16A MCB curve B, transparent door and DIN Rail (4 modules) | 16 A |
| 50414128 | 1D 4P 16A MCB curve C, transparent door and DIN Rail (4 modules) | 16 A |
| 50414144 | 1D 4P 32A MCB curve C, transparent door and DIN Rail (4 modules) | 32 A |
| 50414122 | 1E 1P 16A MCB curve B, transparent door and DIN Rail (4 modules), 3x16A german standard sockets (Schuko) | 16 A |
| 50414121 | 1E 1P+N 16A MCB curve B, transparent door and DIN Rail (4 modules), 3x16A german standard sockets (Schuko) | 16 A |
| 50414221 | 1F Transparent door (4 modules), 3x16A german standard sockets (Schuko) | 16 A |
| 50414251 | 1G Set up for MCB (8 modules), 3x16A german standard sockets | 16 A |
| 50414162* | 2B 3xD01 - Fuse carrier, transparent door, 1x16A CEE 3P+N+T socket | 16 A |
| 50414171* | 2B 3xD01 - Fuse carrier, transparent door, 1x32A CEE 3P+N+T socket | 32 A |
| 50414161* | 2C 3xD01 - Fuse carrier, transparent door and DIN rail, 2x16A CEE 3P+N+T sockets | 16 A |
| 50414185* | 2D 4P 16A MCB curve C, transparent door and DIN Rail (8 modules), 2x16A CEE 3P+N+T sockets | 16 A |
| 50414181 | 2E 3x1P+N 16A MCB curve C, transparent door and DIN Rail (8 modules), 2x16A CEE 2P+T sockets | 16 A |
| 50414192 | 2F 4P 32A MCB curve C, transparent door and DIN Rail (8 modules), 1x32A CEE 3P+N+T socket | 32 A |
| 50414281 | 2G Set up for MCB (8 modules), 3x16A CEE 2P+T sockets | 16 A |
| 50414282 | 2H Set up for MCB (8 modules), 2x16A CEE 3P+N+T sockets | 16 A |
| 50414291 | 2H Set up for MCB (8 modules), 2x32A CEE 3P+N+T sockets | 32 A |












*Fuses not included

Dimensional data



| With internal cabling | | |
|-----------------------|-----------|-------------|
| Item code | Fig. | Weight (kg) |
| 5041 41 11 | 1C | 2,29 |
| 5041 41 30 | 1D | 2,29 |
| 5041 41 28 | 1D | 2,29 |
| 5041 41 44 | 1D | 2,36 |
| 5041 41 22 | 1E | 2,13 |
| 5041 41 21 | 1E | 2,10 |
| 5041 42 21 | 1F | 1,83 |
| 5041 42 51 | 1G | 1,94 |
| 5041 41 62 | 2B | 2,60 |
| 5041 41 71 | 2B | 2,79 |
| 5041 41 61 | 2C | 2,96 |
| 5041 41 85 | 2D | 3,23 |
| 5041 41 81 | 2E | 3,05 |
| 5041 41 92 | 2F | 3,06 |
| 5041 42 81 | 2G | 2,55 |
| 5041 42 82 | 2H | 2,49 |
| 5041 42 91 | 2H | 2,49 |

Type of Tap-off boxes

| | | | | |
|---|--|---|--|--|
| 1C  50414111* | 1D  50414130 - 50414128 - 50414144 | 1E  50414122 - 50414121 | 1F  50414221 | 1G  50414251 |
| 2B  50414162* - 50414171* | 2C  50414161* | 2D  50414185* | 2E  50414181 | 2F  50414192 |
| 2G  50414281 | 2H  50414282 - 50414291 | | | |

MEDIUM RATING (MR)








tap-off boxes without disconnecting device



55655051



55055086

| Cat.Nos | Tap-off boxes with fuse carriers | | |
|---|---|--------|----------------|
| These tap-off boxes are made from thermoplastic material strengthened with fibreglass. They fit all MR versions and are provided with a set of three fuse carriers. | | | |
| MR-MRf | | In (A) | Fuse carriers |
| 55655051 |  | 32 | CH10 (10,3x38) |
| 55055052 |  | 63 | CH22 (22x58) |
| 55055053 |  | 125 | NH0 |
| 55055057 |  | 125 | NH00 |
| 50404004 |  | 160 | NH0 |
| 55655057 |  | 250 | NH1 |
| 55655058* |  | 400 | NH2 |

Fuses not included

| Tap-off boxes for MCBs | | | |
|---|----|--------|---------------|
| All tap-off boxes with a transparent door are equipped with a DIN 50022 rail for modular devices. The transparent door of the box lets you access the equipment without opening the cover, thus isolating the load connected. | | | |
| MR-MRf | | In (A) | N° of modules |
| 55055086 | 4D | 63 | 8 |
| 55055088 | 4E | 63 | 11 |
| 55055056 | 4D | 125 | 8 |
| 55055068 | 4E | 125 | 11 |
| 55055066 | 4C | 125 | 4 |
| 50404024 | 4C | 160 | 4 |
| 55055070* | 5G | 400 | 7 |
| 55055071* | 5H | 400 | 11+11 |

| Tap-off boxes empty version for MCBs | | |
|---|----|----------------|
| These boxes can be installed on the tap-off outlets of the MR. They can be plugged in and unplugged from the busbar only when the cover of the box is open i.e. when the tap-off is isolated. Boxes can be installed and disconnected from the energized busbar. The same box can be installed both on Aluminium and Copper conductors. | | |
| MR-MRf | | |
| 55055055 | 4B | empty In= 125A |
| 55655059* | 5F | empty In= 400A |

* Neutral cross section 50%
MCBs (Miniature Circuit Breaker)

Type of Tap-off boxes

| | |
|--------------------------------------|---|
| <p>3A</p> <p>55655051</p> | <p>4B</p> <p>55055052 - 55055053 - 55055057 - 50404004 - 55055055</p> |
| <p>4C</p> <p>55055066 - 50404024</p> | <p>4D</p> <p>55055056 - 55055086</p> |
| <p>4E</p> <p>55055068 - 55055088</p> | <p>5F Metal box</p> <p>55655057 - 55655058 - 55655059</p> |
| <p>5G Metal box</p> <p>55055070</p> | <p>5H Metal box</p> <p>55055071</p> |

NOTE: All version of Tap-off boxes is possible to install in MR version (4 conductors) & MRf (5 conductors)

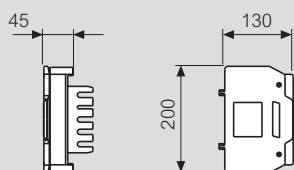
55655057, 55655058, 55055070, 55055071, 55655059 not usable on MR/MRf 1000 A AI

MEDIUM RATING (MR)

tap-off boxes without disconnecting device

Dimensional data

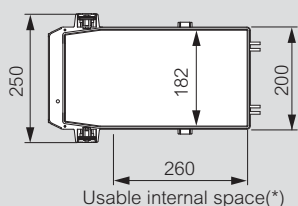
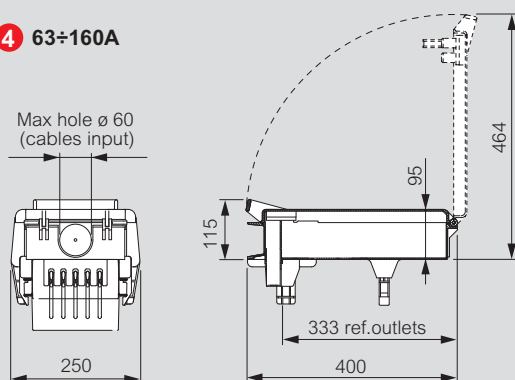
3 32A



| With fuse carriers | | |
|---------------------------|------|----------------|
| Item code 5 conductors | Fig. | Weight (kg) |
| MR - MRf | | |
| 5565 50 51 | 3A | 0,85 |
| 5505 50 52 | 4B | 3,20 |
| 5505 50 53 | 4B | 3,35 |
| 5505 50 57 | 4B | 3,35 |
| 5040 40 04 | 4B | 3,60 |
| 5565 50 57 | 5F | 14,90 |
| 5565 50 58* | 5F | 15,80 |

Neutral cross section 50%

4 63÷160A

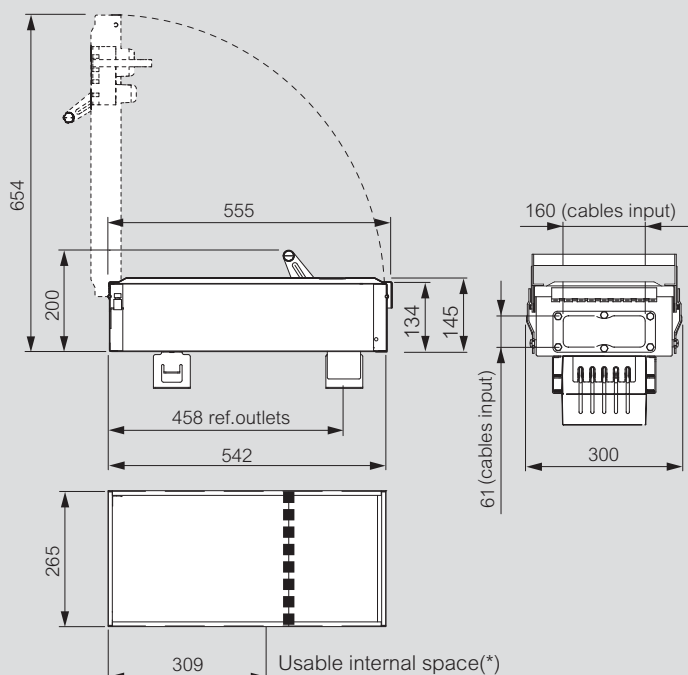


| For mcb with transparent cover | | |
|--------------------------------|------|----------------|
| Item code 5 conductors | Fig. | Weight (kg) |
| MR - MRf | | |
| 5505 50 86 | 4D | 3,20 |
| 5505 50 88 | 4E | 3,60 |
| 5505 50 56 | 4D | 3,20 |
| 5505 50 68 | 4E | 3,60 |
| 5505 50 66 | 4C | 3,00 |
| 5040 40 24 | 4C | 3,60 |
| 5505 50 70* | 5G | 13,40 |
| 5505 50 71* | 5H | 15,30 |

Neutral cross section 50%

| TERMINALS | |
|--------------------|-------|
| Phase / Neutral | Earth |
| | |
| M8 | M5 |

5 250÷400A



| Empty for thermal magnetic CB | | |
|-------------------------------|------|----------------|
| Item code 5 conductors | Fig. | Weight (kg) |
| MR - MRf | | |
| 5505 50 55 | 4B | 2,90 |
| 5565 50 59* | 5F | 14,30 |

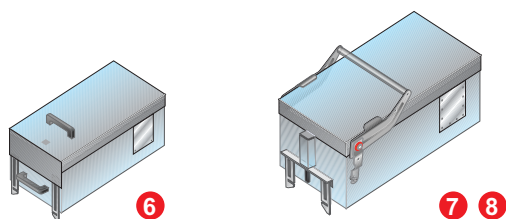
Neutral cross section 50%

| TERMINALS | | |
|-----------|---------|-------|
| Phase | Neutral | Earth |
| | | |
| M12 | M8 | M6 |

(*) is referred at empty version

MEDIUM RATING (MR)

tap-off boxes with disconnecting device on the cover



Cat.Nos **Tap-off boxes with fuse carrier**

Tap-off box with galvanized and painted steel sheet structure. Metal boxes are suitable for heavy loads and are used to shield electric fields caused by flows of current.

| MR-MRf | PE + FE | In (A) | Fuse carrier |
|----------|---------|--------|--------------|
| 50414021 | 6P | 63 | CH22 (22x58) |
| 50414022 | 6P | 125 | NH00 |
| 50414023 | 6P | 160 | NH00 |
| 50414024 | 7Q | 250 | NH2 |
| 50414026 | 8R | 400 | NH2 |
| 50414025 | 8R | 630 | NH3 |

Tap-off boxes with switch disconnecter (AC23)

Tap-off box with galvanized and painted steel sheet structure. Metal boxes are suitable for heavy loads and are used to shield electric fields caused by flows of current. 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.

Note: It is not possible to open, close, install or pull out the tap-off box if the switch is in "ON" position.

| MR-MRf | PE + FE | In (A) | Fuse carrier |
|----------|---------|--------|--------------|
| 50411601 | 6P | 63 | NH000 |
| 50411622 | 6P | 125 | NH00 |
| 50411623 | 6P | 160 | NH00 |
| 50411624 | 7Q | 250 | NH1 |
| 50411625 | 8R | 400 | NH2 |
| 50411646 | 8R | 630 | NH3 |

Tap-off boxes empty version

These boxes can be installed on the tap-off outlets of the MR. They can be plugged in and unplugged from the busbar only when the cover of the box is open i.e. when the tap-off is isolated. Boxes can be installed and disconnected from the energized busbar. The same box can be installed both on Aluminium and Copper conductors.

"PE+FE" tap-off boxes have separate terminals for the two earths whereas the "PE" boxes have parallel earths (casing and conductor). They can be customized with MCBs by various manufacturers. Boxes available with factory installed circuit breakers.

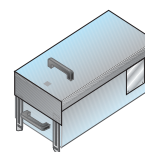
| MR-MRf | PE + FE | In (A) |
|----------|---------|--------|
| 50414001 | 6P | 63 |
| 50414002 | 6P | 125 |
| 50414003 | 6P | 160 |
| 50414004 | 7Q | 250 |
| 50414005 | 8R | 630 |

Fuses not included

PE: Protective earthing
FE: Functional earthing

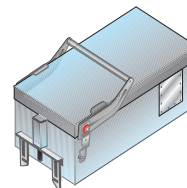
Type of Tap-off boxes

6P Metal box



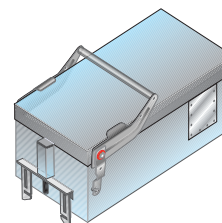
50414021 - 504140212 - 50414023 - 50414001 - 50414002
- 50414003 - 50411601 - 50411622 - 50411623

7Q Metal box



50414021 - 50414004 - 50411624

8R Metal box



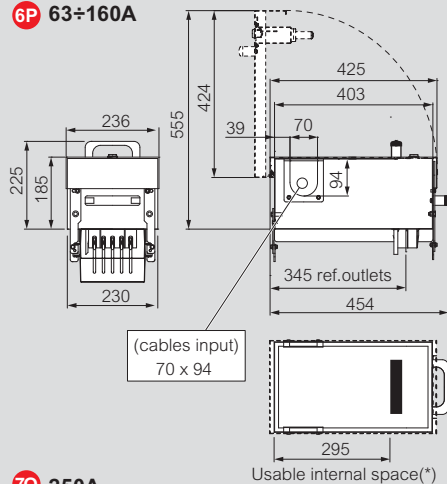
504140216 - 504140215 - 50414005 - 50411625 - 50411646

MEDIUM RATING (MR)

tap-off boxes with disconnecting device on the cover

Dimensional data

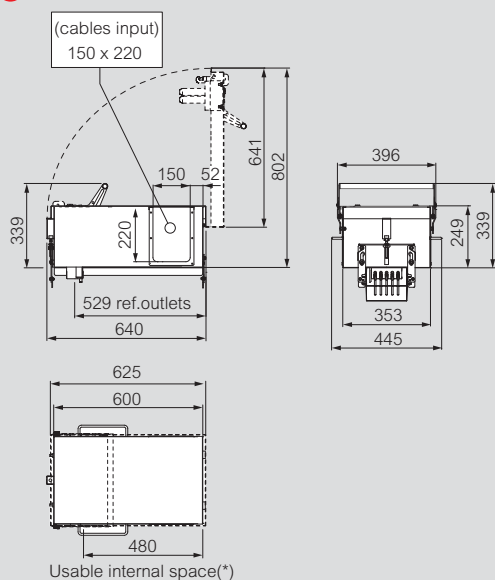
6P 63÷160A



| TERMINALS | |
|---------------|-------|
| Phase/Neutral | Earth |
| | |
| | |
| M8 | M6 |

refer to empty version

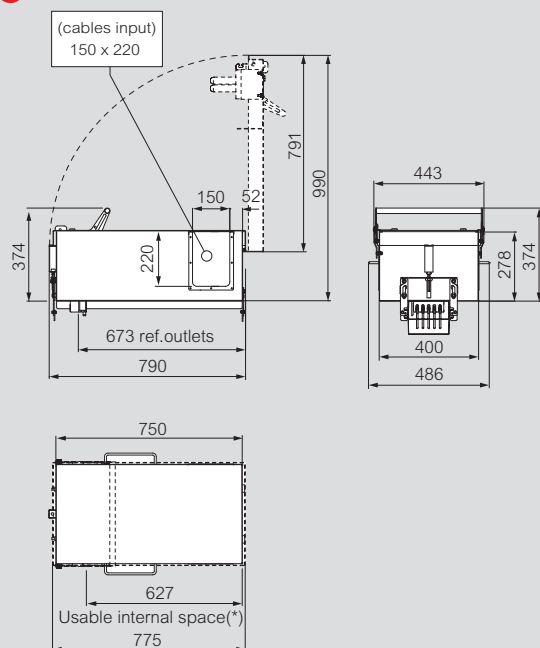
7Q 250A



| TERMINALS | |
|---------------|-------|
| Phase/Neutral | Earth |
| | |
| M8 | M8 |

refer to empty version

8R 400÷630A



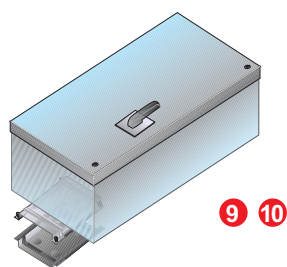
| TERMINALS | |
|---------------|-------|
| Phase/Neutral | Earth |
| | |
| M8 | M12 |

refer to empty version

(*) is referred at empty version

MEDIUM RATING (MR)

tap-off boxes bolt-on type



Tap-off boxes with fuse carrier

"Bolt-on" tap-off boxes. They make use of the joint between straight elements as a connection for the junction. As this connection affects live conductors, it can NOT be carried out when the line is energized - the line has to be isolated.

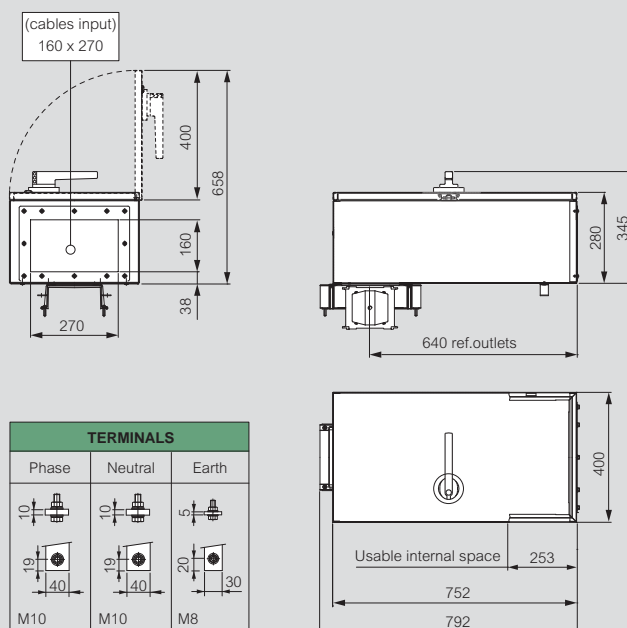
| Rating (A) | Dimension | Circ. breaker | Fuse | Item | Item | Item |
|------------------|-----------|---------------|------|------------|------------|------------|
| Aluminium | | | | | | |
| 630 | 9 | AC23 | NH3 | 5040 18 01 | 5040 18 02 | 5040 18 03 |
| 800 | 10 | AC23 | NH4 | - | 5040 18 04 | 5040 18 05 |
| 1000 | 10 | AC23 | NH4 | - | - | 5040 18 06 |
| Rating (A) | Dimension | Circ. breaker | Fuse | Item | Item | Item |
| Copper | | | | | | |
| 630 | 9 | AC23 | NH3 | 5540 18 01 | 5540 18 02 | 5540 18 03 |
| 800 | 10 | AC23 | NH4 | - | 5540 18 04 | 5540 18 05 |
| 1000 | 10 | AC23 | NH4 | - | - | 5540 18 06 |

Cable entry plate (mm)

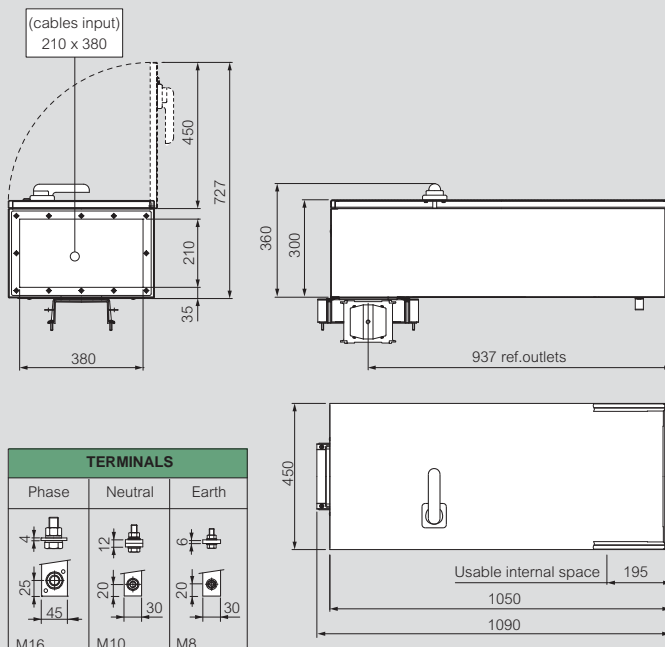
| | | |
|------|----|-----------|
| Type | 9 | 160 x 270 |
| | 10 | 210 x 380 |

Dimensional data

9 630A



10 800÷1000A



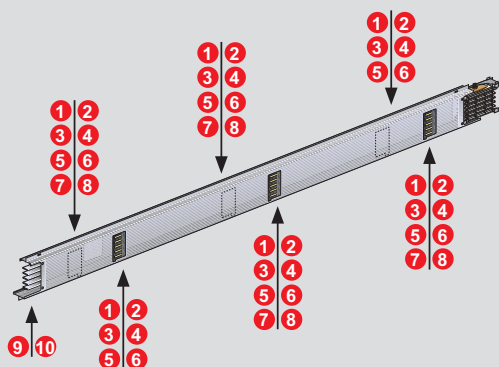
MEDIUM RATING (MR)

tap-off boxes mounting

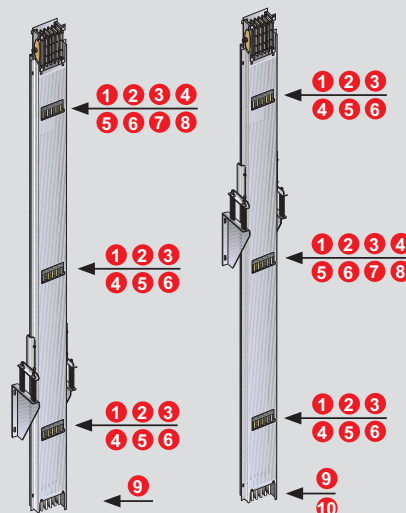
Straight element with 3+3 windows

Edgewise

The numbers in the squares refer to the dimensions of the tap-off boxes. (see previous pages)



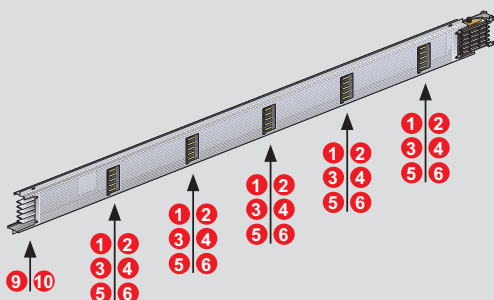
Riser mains



Straight element with 5 windows

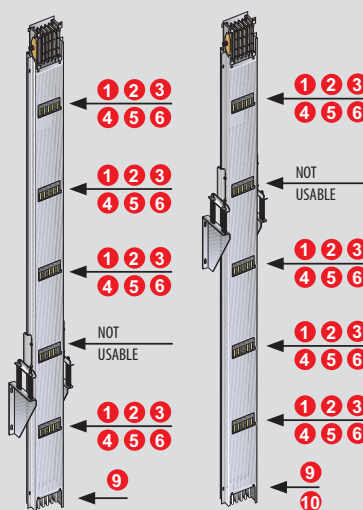
Edgewise

The numbers in the squares refer to the dimensions of the tap-off boxes. (see previous pages)



In elements with 5 windows, tap-off boxes with dimension 5 do not allow the possibility of installing other boxes on the next outlet

Riser mains



MEDIUM RATING (MR)

tap-off boxes bolt-on type

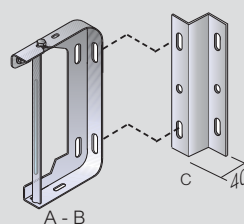


| Cat.Nos | | Suspension brackets |
|----------|----------|---|
| 50632001 | A | suspension brackets for bars up to 400A Al: 160A-250A-315A Cu: 250A-315A-400A |
| 50632003 | B | suspension brackets for bars from 400A to 1000A Al: 400A-500A-630A-800A-1000A Cu: 630A-800A-1000A |
| 50632205 | C | wall spacer, required when the bracket needs to be fixed directly to the wall (40 mm) |
| 50403711 | D | suspension bracket for vertical elements, suitable for riser mains up to 4 m and for weights up to 300 kg. It is to be used together with 50632001/3 |
| 50403712 | E | suspension bracket with tie-rods for riser mains. This bracket is used in vertical applications. Use one bracket every 300 Kg. (see weight busbars table). |

| | Wall bracket holder |
|----------|--|
| 50632212 | Adjustable arm both in height and in depth. The bracket holder can be combined with the MR - MS - TS brackets L= 0,45 m - max weight = 80 kg |
| 50632213 | Adjustable arm both in height and in depth. The bracket holder can be combined with the MR - MS - TS brackets L= 0,55 m - max weight= 68 kg |
| 50632214 | Adjustable arm both in height and in depth. The bracket holder can be combined with the MR - MS - TS brackets L= 0,75 m - max weight = 50 kg |

Dimensional data

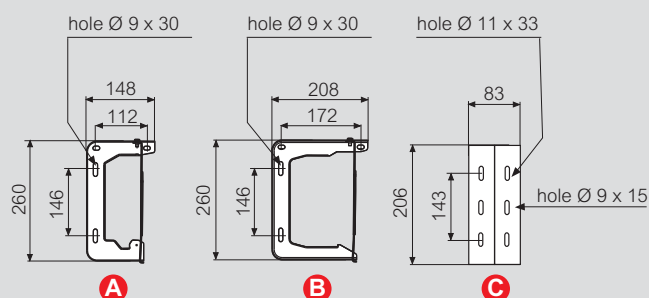
Brackets



| Item code | Fig. | Weight (kg) |
|------------|------|-------------|
| 5063 20 01 | A | 0,55 |
| 5063 20 03 | B | 0,60 |
| 5063 22 05 | C | 0,05 |

1 bracket for every 2 m of line

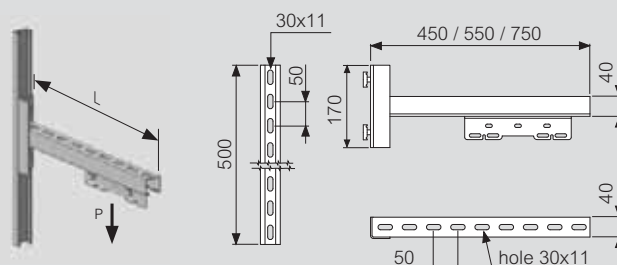
For more detail see page:
How to take measurements



Brackets for vertical elements

| Item code | Weight (kg) | |
|---------------------|-------------|---|
| 5040 37 11 D | 1,05 | 1 bracket at the base of the riser mains max 4 m. |
| 5040 37 12 E | 1,20 | 1 bracket every 300 kg |

Wall bracket holder



| Item code | length | max weight | Weight (kg) |
|------------|-----------|---------------|-------------|
| 5063 22 12 | L= 0,45 m | p max = 80 kg | 2,80 |
| 5063 22 13 | L= 0,55 m | p max = 68 kg | 3,00 |
| 5063 22 14 | L= 0,75 m | p max = 50 kg | 3,50 |

MEDIUM RATING (MR)

Installation accessories



50403601

Cat.Nos

Fixing accessories

Ceiling bracket holder with a base to be fixed to the ceiling and a drilled u-shaped section bar available in various lengths. the section bar holes are suitable for being installed with the mr brackets.

50632201 Ceiling flange

50632202 U-shaped bar L= 0,5 m

50632203 U-shaped bar L= 1 m

50632204 U-shaped bar L= 2 m

50632210 Bracket holder for beam fixing. This bracket holder has a bracket and two clamps that are hooked to the wings of the beam.

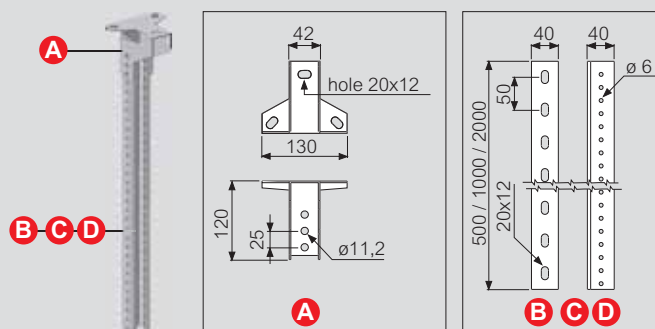
Various accessories

50403601

Outlet spare part
Suitable for all MR versions

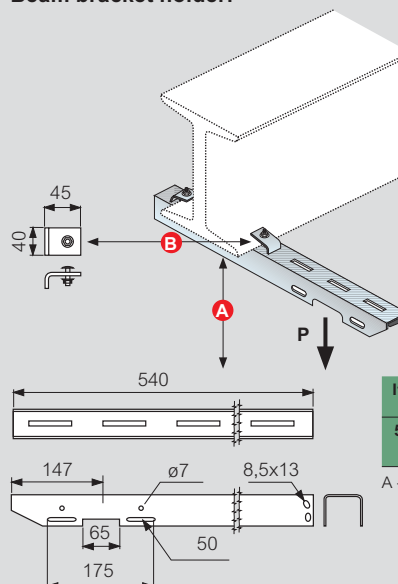
Dimensional data

Ceiling bracket holder



| Item code | Description | Fig. | Weight (kg) |
|-----------|----------------------|------|-------------|
| 50632201 | Ceiling flange | A | 0,66 |
| 50632202 | U-shaped bar L=0,5 m | B | 1,0 |
| 50632203 | U-shaped bar L=1 m | C | 1,5 |
| 50632204 | U-shaped bar L=2 m | D | 2,0 |

Beam bracket holder:



| Item code | Fig. | Weight (kg) |
|-----------|------|-------------|
| 50632210 | A | 0,90 |
| | B | 0,90 |

A - max weight = 65 kg

MR - MEDIUM RATING

technical informations

| | | MR - Al (3P+N+PE) | | | | | | | | MR - Cu (3P+N+PE) | | | | | | |
|---|--|-------------------|-------|-------|-------|---------|-------|-------|-------|-------------------|-------|-------|---------|-------|-------|--|
| Rated current | In [A] | 160 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 250 | 315 | 400 | 630 | 800 | 1000 | |
| Operating voltage | Ue (V) | 1000 | | | | | | | | 690 | 1000 | | | | | |
| Insulation voltage | Ui (V) | 1000 | | | | | | | | 690 | 1000 | | | | | |
| Rated frequency | f (Hz) | 50/60 | | | | | | | | | | | | | | |
| Rated short-time current for three-phase fault (1 s) | I _{cw} [kA] _{rms} | 15* | 25* | 25* | 25 | 30 | 36 | 36 | 30 | 25* | 25* | 30* | 36 | 36 | 36 | |
| Allowable specific energy for three-phase fault | I ² t [M A ² s] | 23 | 63 | 63 | 625 | 900 | 1296 | 1296 | 900 | 63 | 63 | 90 | 1296 | 1296 | 1296 | |
| Allowable peak current for three-phase fault | I _{pk} [kA] | 30 | 53 | 53 | 53 | 63 | 76 | 76 | 63 | 53 | 53 | 63 | 76 | 76 | 76 | |
| Rated short-time current for single-phase fault Ph-N (1 s) | I _{cw} [kA] _{rms} | 9* | 15* | 15* | 15 | 18 | 22 | 22 | 18 | 15* | 15* | 18* | 22 | 22 | 22 | |
| Allowable peak current for single-phase fault | I _{pk} [kA] | 15 | 30 | 30 | 30 | 36 | 45 | 45 | 36 | 30 | 30 | 36 | 45 | 45 | 45 | |
| Rated short-time current for single-phase fault Ph-PE (1 s) | I _{cw} [kA] _{rms} | 9* | 15* | 15* | 15 | 18 | 22 | 22 | 18 | 15* | 15* | 18* | 22 | 22 | 22 | |
| Rated peak current for single-phase fault Ph-PE | I _{pk} [kA] | 15 | 30 | 30 | 30 | 36 | 45 | 45 | 36 | 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 | 0,037 | 0,237 | 0,180 | 0,096 | 0,061 | 0,040 | 0,032 | |
| Phase resistance at thermal conditions (In; 40 °C) | R _t [mΩ/m] | 0,665 | 0,443 | 0,266 | 0,163 | 0,104 | 0,081 | 0,070 | 0,073 | 0,320 | 0,243 | 0,129 | 0,082 | 0,053 | 0,043 | |
| Phase reactance at 50 Hz | X [mΩ/m] | 0,260 | 0,202 | 0,186 | 0,130 | 0,110 | 0,097 | 0,096 | 0,076 | 0,205 | 0,188 | 0,129 | 0,122 | 0,122 | 0,120 | |
| 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 | 0,237 | 0,180 | 0,096 | 0,061 | 0,040 | 0,032 | |
| Neutral reactance at 50 Hz | X _n [mΩ/m] | 0,260 | 0,202 | 0,186 | 0,130 | 0,110 | 0,097 | 0,096 | 0,076 | 0,205 | 0,188 | 0,129 | 0,122 | 0,122 | 0,120 | |
| Resistance of the protective conductor | R _{PE} [mΩ/m] | 0,341 | 0,341 | 0,341 | 0,283 | 0,283 | 0,283 | 0,283 | 0,283 | 0,336 | 0,336 | 0,336 | 0,279 | 0,279 | 0,279 | |
| Reactance of the protective conductor at 50 Hz | X _{PE} [mΩ/m] | 0,220 | 0,220 | 0,220 | 0,180 | 0,180 | 0,180 | 0,180 | 0,180 | 0,220 | 0,220 | 0,220 | 0,180 | 0,180 | 0,180 | |
| Resistance of the fault loop phase | R _{Ph-Pe} fault loop [mΩ/m] | 1,006 | 0,784 | 0,607 | 0,445 | 0,387 | 0,364 | 0,353 | 0,336 | 0,657 | 0,579 | 0,466 | 0,361 | 0,332 | 0,322 | |
| Reactance of the fault loop phase-PE | X _{RPh-Pe} fault loop [mΩ/m] | 0,480 | 0,414 | 0,396 | 0,333 | 0,333 | 0,283 | 0,275 | 0,273 | 0,425 | 0,408 | 0,349 | 0,302 | 0,302 | 0,300 | |
| Resistance of the fault loop phase-neutral | R _{Ph-N} fault loop [mΩ/m] | 1,157 | 0,771 | 0,463 | 0,283 | 0,181 | 0,141 | 0,121 | 0,093 | 0,558 | 0,423 | 0,225 | 0,143 | 0,093 | 0,074 | |
| Reactance of the fault loop phase-neutral at 50 Hz | X _{RPh-N} fault loop [mΩ/m] | 0,480 | 0,422 | 0,406 | 0,310 | 0,290 | 0,277 | 0,276 | 0,186 | 0,425 | 0,408 | 0,349 | 0,302 | 0,302 | 0,300 | |
| Voltage drop with distributed load referred to ΔV3f (**) | Δv [V/m/A]10 ⁻³ cosφ = 0,7 | 0,564 | 0,394 | 0,276 | 0,179 | 0,131 | 0,109 | 0,102 | 0,090 | 0,321 | 0,263 | 0,158 | 0,125 | 0,108 | 0,100 | |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,75 | 0,581 | 0,404 | 0,279 | 0,180 | 0,130 | 0,108 | 0,100 | 0,088 | 0,326 | 0,265 | 0,158 | 0,123 | 0,105 | 0,096 | |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,8 | 0,596 | 0,412 | 0,281 | 0,180 | 0,129 | 0,107 | 0,098 | 0,085 | 0,329 | 0,266 | 0,157 | 0,120 | 0,100 | 0,092 | |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,85 | 0,608 | 0,418 | 0,281 | 0,179 | 0,127 | 0,104 | 0,095 | 0,082 | 0,329 | 0,264 | 0,154 | 0,116 | 0,095 | 0,086 | |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,9 | 0,616 | 0,422 | 0,277 | 0,176 | 0,122 | 0,100 | 0,091 | 0,077 | 0,327 | 0,260 | 0,149 | 0,110 | 0,088 | 0,079 | |
| | Δv [V/m/A]10 ⁻³ cosφ = 0,95 | 0,617 | 0,419 | 0,269 | 0,169 | 0,115 | 0,093 | 0,083 | 0,069 | 0,319 | 0,251 | 0,141 | 0,101 | 0,077 | 0,068 | |
| Δv [V/m/A]10 ⁻³ cosφ = 1 | 0,576 | 0,384 | 0,230 | 0,141 | 0,090 | 0,070 | 0,060 | 0,046 | 0,277 | 0,210 | 0,112 | 0,071 | 0,046 | 0,037 | | |
| Joule effect losses at Rated current | P [W/m] | 51 | 83 | 79 | 78 | 78 | 97 | 134 | 160 | 60 | 72 | 62 | 98 | 103 | 128 | |
| Fire load | [kWh/m] | 1,3 | 1,3 | 1,3 | 1,8 | 1,8 | 1,8 | 1,8 | 1,8 | 1,3 | 1,3 | 1,3 | 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 | 9,3 | 10,2 | 13,3 | 18,2 | 23,9 | 27,9 | |
| Outside dimensions of the busbar | LxH [mm] | 75x196 | | | | 135x196 | | | | 75x196 | | | 135x196 | | | |
| Protection degree | IP | 55 | | | | | | | | | | | | | | |
| Mechanical resistance of the casings | IK | 10 | | | | | | | | | | | | | | |

(**) **THREE-PHASE:** $\Delta V_{3f} = \sqrt{3}/2 \times (R_t \cos\varphi + X \sin\varphi)$
 $\Delta V_{3f}(In) = I \times L \times \Delta V_{3f}$: (knowing the current and length of the line)
 $\Delta V_{3f}(In)\% = (\Delta V_{3f}(In) / U_e) \times 100 (\%)$
 To calculate the **ΔV1f (SINGLE-PHASE) on distributed load:**
 $\Delta V_{1f} = 1/2 \times (2R_t \cos\varphi + 2X \sin\varphi)$
 $\Delta V_{1f}(In) = I \times L \times \Delta V_{1f}$: (knowing the current and length of the line)
 $\Delta V_{1f}(In)\% = (\Delta V_{1f}(In) / U_e) \times 100 (\%)$

I = operating current (A)
 L = lenght (m)

STRAIGHT ELEMENTS

The components and the features of the MR straight elements are:

- a casing made of galvanized steel used as protective earth (PE);
- overall busbar dimensions: 75x196 and 135x196;
- painted casing available on request; only MR/MRf 1000A Al is painted with RAL 7035;
- number of conductors: 4 with the same section (3P+N) with PE made from the casing or 5 when using MRfull (3P+N+PE), available in the aluminum or electrolytic copper version with 99.9% purity;
- conductors insulators are made by fiberglass reinforced plastic material, ensuring a V1 selfextinguishing degree (according to UL94), 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 windows every 3m), 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 made with tin plated aluminium for MR/MRf Al and copper for MR/MRf Cu 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 of the MR line are IP55.
- the whole busbar is fire retardant in compliance with the IEC 60332-3 standard.

FEED UNITS

Allows you to electrically power the MR line through a cable line or directly connected to an electric distribution board. The 160 and 250A feed units have terminals for cables up to 150mm²; for higher ratings, the cable connection to the feed unit requires cable lugs to be fastened to the provided spreaders. The MR line can be provided with centre feed units or end feed units with a switch-disconnector which allows you to isolate the whole line for carrying out maintenance operations or layout changes, if required.

END COVER

The end cover ensures the IP55 protection degree at the end of the line.

FIXING SUPPORTS

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

MR - MEDIUM RATING

technical informations

TAP-OFF BOXES

Used for energizing three-phase loads from 16A up to 1000A; they can be divided into two big categories:

1) Plug-in type tap-off boxes (from 16A up to 630A) with the following features:

- Intervention under load possible up to 32A;
- disconnection device integrated into the cover of the boxes with a rating from 63A to 630A, ensuring automatic absence of electric current when the cover is opened;
- possibility of padlocking box cover in the open/disconnected position so that all maintenance operations of the loads connected to it can be carried out safely;
- the supplied PE contact (protective conductor) is the first to make an electrical connection when inserting the box into the outlet and it is the last to disconnect when pulling it out;
- all insulating plastic components are in compliance with the IEC 60695-2-1 glow-wire test and rated V2 self-extinguishing according to the UL94;
- standard IP55 degree of protection without using additional accessories;
- availability of boxes in the following versions:
 - with a set of three fuse carriers
 - with Lexic MCBs
 - with EEC sockets and Schuko sockets
 - with AC23 switch disconnector and fuse carrier
 - for MCCBs.

2) Boxes bolted onto the connection (from 630A to 1000A) which include the following features:

- very easy, fast and reliable installation;
- high rated current;
- rigid connection to the busbar through the use of a monobloc junction similar to the straight element system;
- possibility of removing the boxes only when the busbar is not energized (isolated busbar);
- availability of boxes in the following versions:
 - AC23 switch disconnector and fuse carrier
 - with MCCBs

Product fully in compliance with the following Standards: IEC 61439 -6. The busbar trunking systems are FIRE RETARDANT in compliance with IEC 20-22 (IEC 332-3: 1992).

Product suitable for these climates:

- IEC 60068 2-11: Environmental tests Part 2-11: Tests – Test Ka: Salt mist
- IEC 60068 2-30: Environmental tests Part 2-30: Tests – Test Db: Damp heat, cyclic(12 h + 12 h cycle)

CONVERSION TABLE

| | Conductors | Case | Item code | |
|-------|------------|------------|-----------|--|
| MR | 4 | galvanized | ---0--- | |
| MRf | 5 | galvanized | ---1--- | |
| MR-P | 4 | painted | ---2--- | |
| MRf-P | 5 | painted | ---3--- | |

SHORT CIRCUIT PROTECTION FOR LEGRAND'S PRODUCT RANGES (IN≤100A)

Legrand busbar trunking systems with a rated current lower than or equal to 100A are properly protected through an MCB (Modular Circuit Breaker) with a nominal current lower than or equal to that of the busbar. This protection is guaranteed up to the MCB breaking capacity.

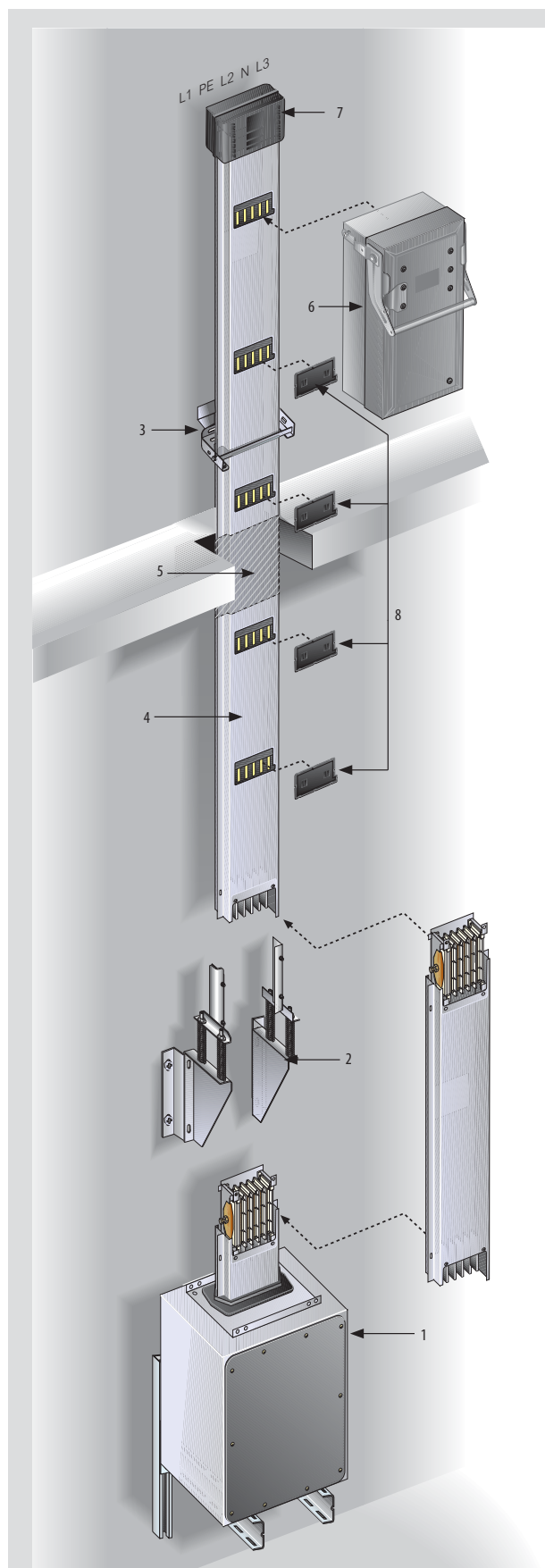
TEMPERATURE RATING SCHEDULE ACCORDING TO THE ROOM TEMPERATURE

| Ambient temperature (°C) | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|--------------------------|------|------|------|------|------|----|------|------|------|------|
| Factor Kt | 1,15 | 1,12 | 1,08 | 1,05 | 1,02 | 1 | 0,97 | 0,95 | 0,93 | 0,89 |

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

MR - MEDIUM RATING

operating instructions on how to design riser mains



GENERAL RULES FOR DESIGN THE RISING MAINS

- 1 - Use a LH end feed unit. This allows the neutral bar to be positioned on the right side of the busbar, hence the cable exit of the tap-off boxes is located downwards.
- 2 - Use one or more suspension brackets for the vertical elements, according to the weight of the whole rising mains. For risers that are shorter than 4 metres, fix to the base with code 50403711; when longer, use a suspension bracket code 50403712 every 300 kg of rising main.
- 3 - Use a standard suspension bracket with a 40mm spacer every 2 metres of rising mains.
- 4 - Use straight elements with 5 outlets on one side.
- 5 - Use a straight element with fire barrier for each compartment floor. It is necessary to specify the position of the internal fire barrier before placing an order
- 6 - The tap-off boxes can be installed in the tap-off outlets and near the connection between the elements.
- 7 - At the end of the riser mains, position the IP55 end cover. Before installing the end cover remove the monobloc located on the last element.
- 8 - Put the outlet covers into the tap-off outlets in order to guarantee the IP55 degree of protection.

For more installation details, please refer to the installation instructions

MR - MEDIUM RATING

how to take measurements

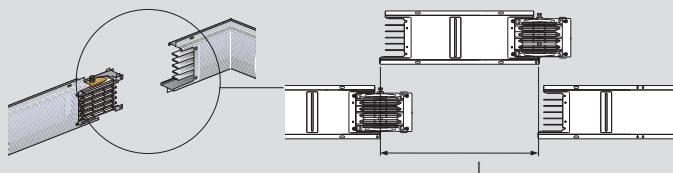
↓ Determination of the measurements for special elements

STRAIGHT ELEMENTS

Always take measurements on the long side on the metal casing as shown in the figure. For simplicity's sake, it will be referred to as "long casing"

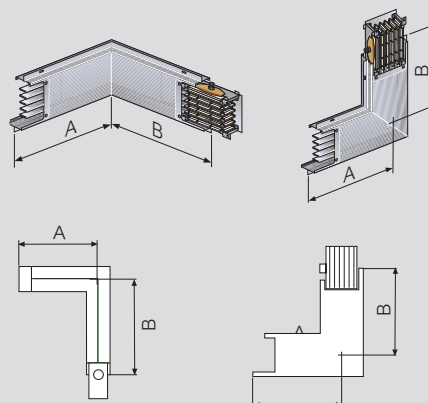


The length of the straight elements can range from 600 mm to 3000 mm.

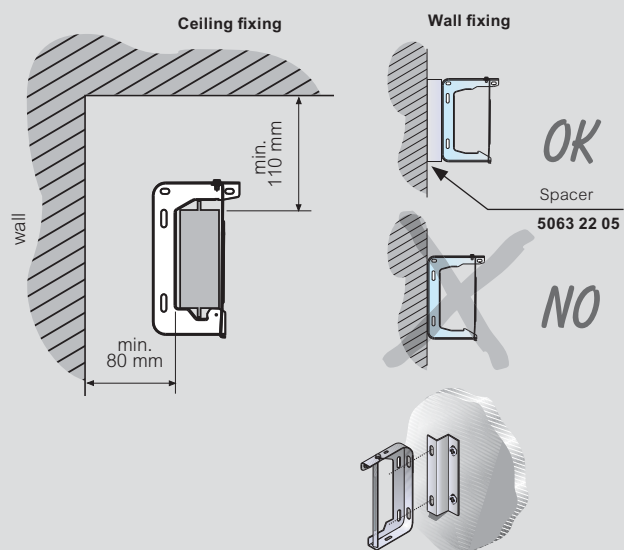


ELBOWS

When using elbows, the dimension should be measured from the long casing to the axis of the element.



MINIMUM FIXING DISTANCES



Do not fix the bracket directly on the wall.
Use the special spacer 5063 22 05.



SUPER COMPACT

BUSBAR FROM 630 TO 6300 A

The power solutions for
industrial and service
sector applications

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

Range

The main features of the **SCP range** are:

- availability in the standard range: **from 630 A to 5000 A*** with **aluminum alloy conductors** and **from 800 A to 6300 A*** with **copper** conductors.
- low impedance of the circuit;
- availability with **a wide selection of tap-off boxes that range from 63 A up to 1250 A**, thus allowing you to locally protect and feed different types of loads by housing protective devices such as fuses, MCCBs and motorised switches.

- compliance with the IEC 61439-6 standard;

- **referred to the average ambient temperature of 40 °C** against the 35 °C required by the Standard.

ULTRA-COMPACT SIZES

The super-compact dimensions enhance **its resistance to short circuit stresses**; in addition, they can reduce the impedance of the circuit by controlling the voltage drops and allow for the installation of high power electrical systems, even in extremely confined spaces.

EXCELLENT PERFORMANCES

The installation and design of the paths is quick, easy, and flexible, and the sizes are ultra-compact.

*5000A(Al) and 6300A(Cu) only for transport of energy



AIRPORT

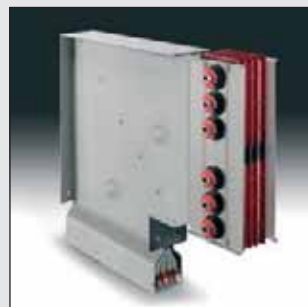


BIG INDUSTRY

Installation accessories



Horizontal elbow



Vertical elbow



Connection interface



Junction

MAIN FEATURES OF THE SCP LINE

Straight elements:

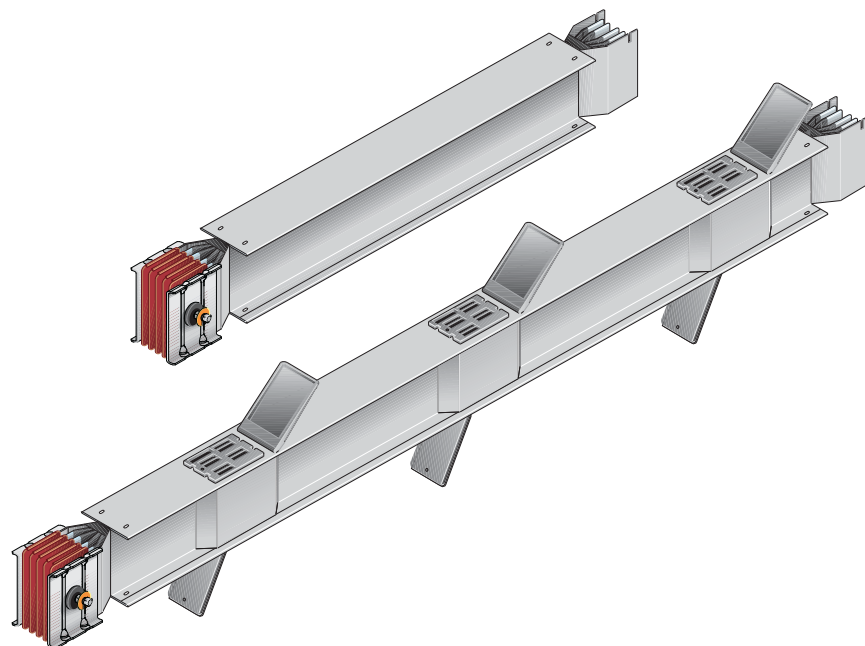
Supplied with its pre-installed monobloc.

Feeder elements:

- standard length: 3 m
- special length: from 0,7 m to 3 m

Distribution elements with tap-off outlets:

- standard length: 3 m
- standard tap-off sockets:
spaced at 850 mm intervals on both sides



Additional elements:

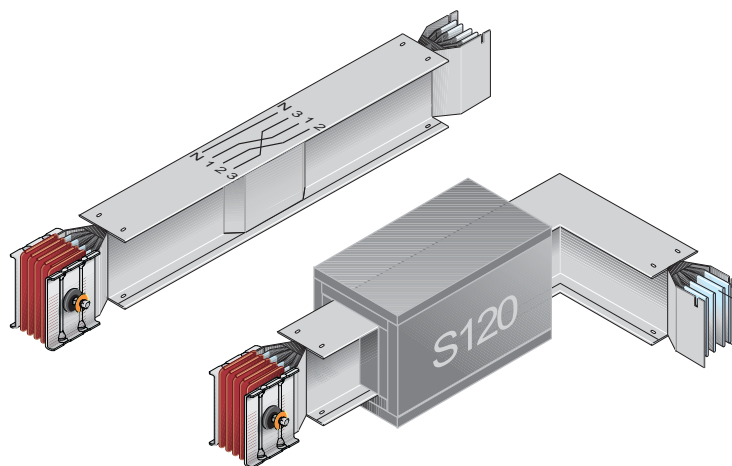
Supplied with its pre-installed monobloc.

Elements able to meet any installation requirement.

Elements with S120 fire barrier

Elements with phase balancing

Elements with thermal expansion device



Angle components:

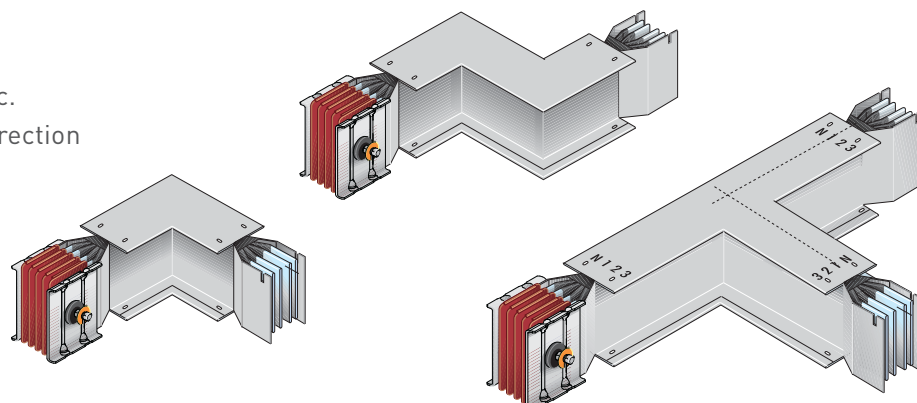
Supplied with its pre-installed monobloc.

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

Elbows

Double elbows

Special T, X elements



Tap-off boxes:

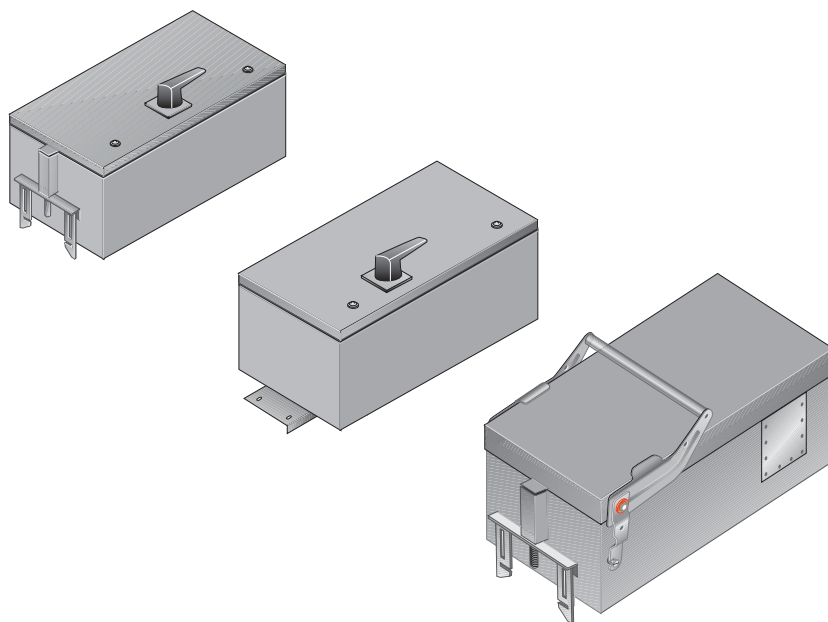
Elements used for connecting and energizing electric loads.

Plug-in tap-off boxes from 63 A up to 630 A: (can be installed with busbar energized)

- with 3P fuse holders
- with switch disconnecter and fuse holder
- for DPX circuit breakers

Bolted tap-off boxes from 125 A to 1250 A:

- with switch disconnecter and fuse holder
- for DPX circuit breakers

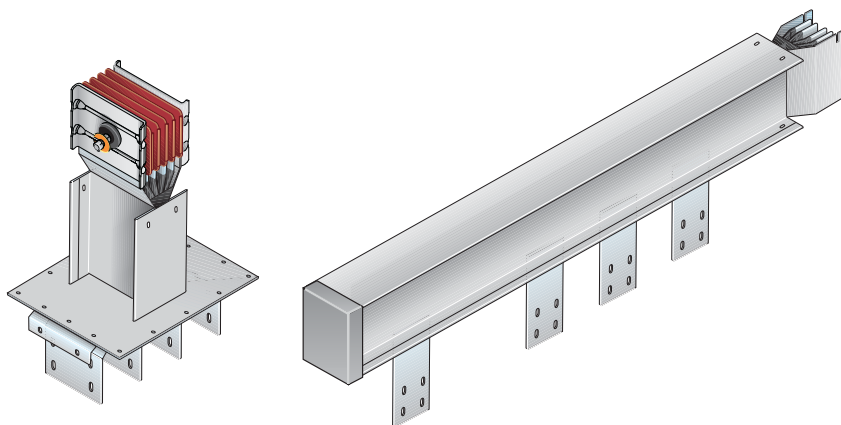


Connection interfaces:

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

Solutions for Legrand XL³ cabinets and Legrand cast resin transformers

Universal solutions



Fixing supports:

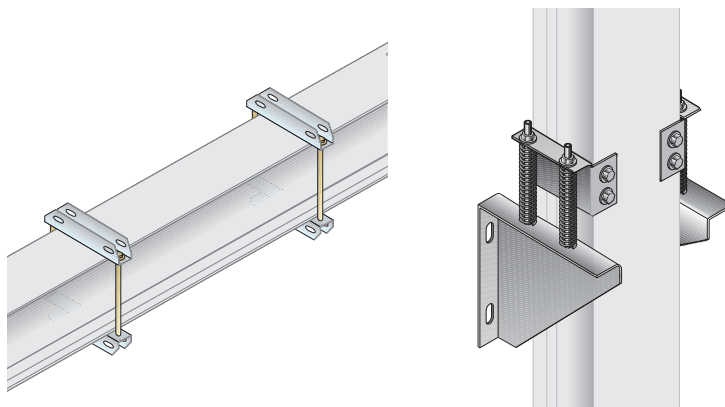
Elements used for fixing the busbar to the structure of the building.

Options for horizontal installations

Options for vertical installations

Options for special applications

(seismic areas, naval environment)



SUPER COMPACT (SCP)

straight elements

SCP Line:

Reference standard: IEC 61439-6

Reference temperature: 40 °C

Protection degree: IP55

Thickness: 1,5 mm;

N° of conductors: 3, 4 or 5

Painted: RAL 7035

Halogen Free

The insulation between bars is ensured by a double sheath made with polyester film class B(130°C), class F (155°C) thermal resistance available on request.

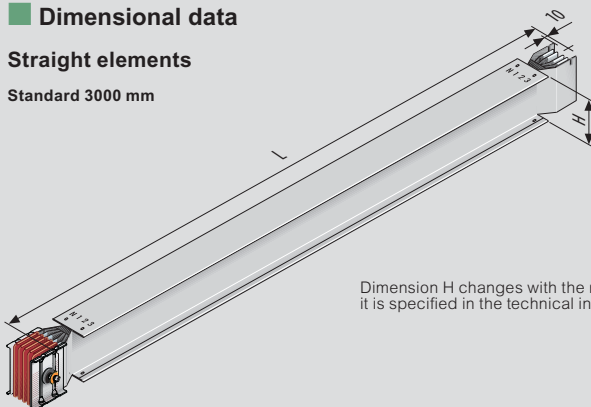
All plastic components have a V1 self-extinguishing degree (as per UL94); they are fire retardant and comply with the glow-wire test according to standards.

| Cat.Nos | | Straight elements for transport | |
|-----------|-----------|---------------------------------|-----------|
| Al | Cu | In (A) | L (mm) |
| 60280100P | - | 630 | 3000 |
| 60280101P | 65280100P | 800 | |
| 60280102P | 65280101P | 1000 | |
| 60280104P | 65280103P | 1250 | |
| 60280106P | 65280105P | 1600 | |
| 60280107P | 65280106P | 2000 | |
| 60390104P | 65280108P | 2500 | |
| 60390106P | 65390105P | 3200 | |
| 60390107P | 65390106P | 4000 | |
| - | 65390108P | 5000 | |
| 60280170P | - | 630 | 1000÷1500 |
| 60280171P | 65280170P | 800 | |
| 60280172P | 65280171P | 1000 | |
| 60280174P | 65280173P | 1250 | |
| 60280176P | 65280175P | 1600 | |
| 60280177P | 65280176P | 2000 | |
| 60390174P | 65280178P | 2500 | |
| 60390176P | 65390175P | 3200 | |
| 60390177P | 65390176P | 4000 | |
| - | 65390178P | 5000 | |
| 60280120P | - | 630 | 1501÷2000 |
| 60280121P | 65280120P | 800 | |
| 60280122P | 65280121P | 1000 | |
| 60280124P | 65280123P | 1250 | |
| 60280126P | 65280125P | 1600 | |
| 60280127P | 65280126P | 2000 | |
| 60390124P | 65280128P | 2500 | |
| 60390126P | 65390125P | 3200 | |
| 60390127P | 65390126P | 4000 | |
| - | 65390128P | 5000 | |
| 60280180P | - | 630 | 2001÷2500 |
| 60280181P | 65280180P | 800 | |
| 60280182P | 65280181P | 1000 | |
| 60280184P | 65280183P | 1250 | |
| 60280186P | 65280185P | 1600 | |
| 60280187P | 65280186P | 2000 | |
| 60390184P | 65280188P | 2500 | |
| 60390186P | 65390185P | 3200 | |
| 60390187P | 65390186P | 4000 | |
| - | 65390188P | 5000 | |
| 60280150P | - | 630 | 2501÷2999 |
| 60280151P | 65280150P | 800 | |
| 60280152P | 65280151P | 1000 | |
| 60280154P | 65280153P | 1250 | |
| 60280156P | 65280155P | 1600 | |
| 60280157P | 65280156P | 2000 | |
| 60390154P | 65280158P | 2500 | |
| 60390156P | 65390155P | 3200 | |
| 60390157P | 65390156P | 4000 | |
| - | 65390158P | 5000 | |

Dimensional data

Straight elements

Standard 3000 mm



Dimension H changes with the rating; it is specified in the technical informations.

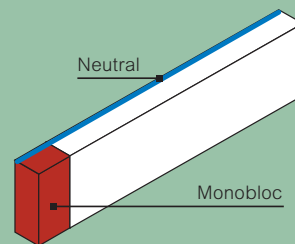
MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| | |
|------------------|--------------|
| Aluminium (Al) | 630A – 5000A |
| Copper (Cu) | 800A – 6300A |
| (L) min/MAX [mm] | 700/3000 |

Straight elements are available on request only for transport of energy:
Al : 5000A
Cu : 6300A

NOTES

The product versions in the whole catalogue will be simplified as shown opposite, highlighting the part with the monobloc installed in red and the neutral side in blue. In the whole catalogue, the measurements shown refer to the element centre distance.



The range is also available on request in different versions: (5 Conductors with dedicated PE conductor, double neutral and more others...)



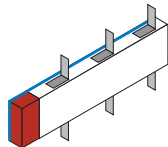
Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

straight elements

| Cat.Nos | | Straight elements for distribution | | |
|------------|------------|------------------------------------|------------|-----------|
| Al | Cu | In (A) | N° outlets | L (mm) |
| *60280130P | - | 630 | 3+3 ** | 3000 |
| 60280131P | *65280130P | 800 | | |
| 60280132P | 65280131P | 1000 | | |
| 60280134P | 65280133P | 1250 | | |
| 60280136P | 65280135P | 1600 | | |
| 60280137P | 65280136P | 2000 | | |
| 60390134P | 65280138P | 2500 | | |
| 60390136P | 65390135P | 3200 | | |
| 60390137P | 65390136P | 4000 | 1+1 | 1000÷1500 |
| - | 65390138P | 5000 | | |
| *60280970P | - | 630 | | |
| 60280971P | *65280970P | 800 | | |
| 60280972P | 65280971P | 1000 | | |
| 60280974P | 65280973P | 1250 | | |
| 60280976P | 65280975P | 1600 | | |
| 60280977P | 65280976P | 2000 | | |
| 60390974P | 65280978P | 2500 | 2+2 ** | 1501÷2000 |
| 60390976P | 65390975P | 3200 | | |
| 60390977P | 65390976P | 4000 | | |
| - | 65390978P | 5000 | | |
| *60280920P | - | 630 | | |
| 60280921P | *65280920P | 800 | | |
| 60280922P | 65280921P | 1000 | | |
| 60280924P | 65280923P | 1250 | | |
| 60280926P | 65280925P | 1600 | 2+2 ** | 2001÷2500 |
| 60280927P | 65280926P | 2000 | | |
| 60390924P | 65280928P | 2500 | | |
| 60390926P | 65390925P | 3200 | | |
| 60390927P | 65390926P | 4000 | | |
| - | 65390928P | 5000 | | |
| *60280980P | - | 630 | 3+3 ** | 2501÷2999 |
| 60280981P | *65280980P | 800 | | |
| 60280982P | 65280981P | 1000 | | |
| 60280984P | 65280983P | 1250 | | |
| 60280986P | 65280985P | 1600 | | |
| 60280987P | 65280986P | 2000 | | |
| 60390984P | 65280988P | 2500 | | |
| 60390986P | 65390985P | 3200 | | |
| 60390987P | 65390986P | 4000 | 3+3 ** | 2501÷2999 |
| - | 65390988P | 5000 | | |
| *60280950P | - | 630 | | |
| 60280951P | *65280950P | 800 | | |
| 60280952P | 65280951P | 1000 | | |
| 60280954P | 65280953P | 1250 | | |
| 60280956P | 65280955P | 1600 | | |
| 60280957P | 65280956P | 2000 | | |
| 60390954P | 65280958P | 2500 | 3+3 ** | 2501÷2999 |
| 60390956P | 65390955P | 3200 | | |
| 60390957P | 65390956P | 4000 | | |
| - | 65390958P | 5000 | | |



Dimensional data

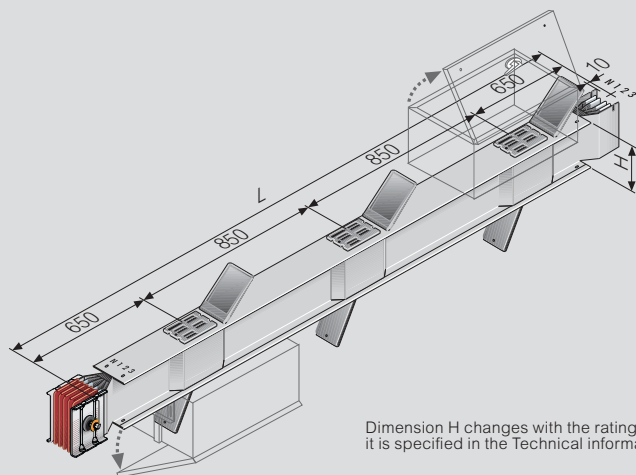
Straight elements for distribution

- Straight elements for plug-in type tap-off boxes
- Standard 3000 mm
- Tap-off outlets on both sides

Straight elements enable the application of plug-in boxes on appropriate outlets.

Available in lengths from 1 to 3 meters, these elements have respectively 1, 2 and 3 outlets at preset distances with centre distances of 850 mm on both side.

(*) The exception to these are 630 A elements with Aluminium conductors (Al) and 800 A elements with Copper conductors (Cu), where distributions are only available on the top side (in standard execution) for example "3+0". On request, the length of the elements and the number and position of distribution outlets may be different from the standards.



Dimension H changes with the ratings and it is specified in the Technical informations

MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

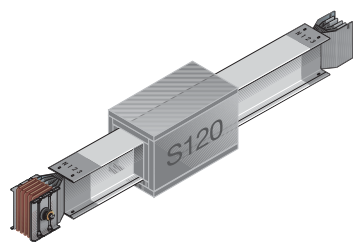
| | |
|------------------|---------------|
| Aluminium (Al) | 630A – 4000A |
| Copper (Cu) | 800A – 5000A |
| (L) min/MAX [mm] | 1250 ***/3000 |

(***) For the length from 1000 mm to 1250 mm is possible to install only plug-in boxes Type 1 and 3.
From 1250 mm to 3000 mm is possible to install all types of plug-in boxes.
Compatible boxes are listed in dedicated chapter.

(**) at request is possible to have others combinations of outlets:
length: 1501÷2000 - outlets: (1+1)
length: 2001÷2500 - outlets: (1+1)
length: 2501÷2999 - outlets: (1+1) and (2+2)
length: 3000 - outlets: (1+1) and (2+2)
Possibility to have outlets in special position

SUPER COMPACT (SCP)

straight elements

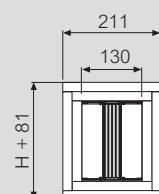


653IFB01

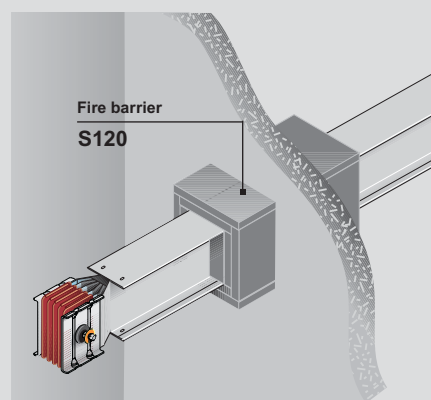
| Cat.Nos | | Fire barrier elements S120 (EN 1366-3, DIN 4102-09) | |
|----------|----------|--|----------|
| | | When the busbar trunking system crosses fire resistant walls or ceilings, it must be fitted with appropriate fire barriers. The fire barrier is 630 mm (Al) and 1000 mm (Cu) long and must always be positioned in the middle of the fire resistant wall or ceiling crossed by the busbar. After crossing fire resistant walls or ceilings, any cavity must be sealed with material meeting current regulations for the required building fire resistance class. | |
| Al | Cu | In (A) | Type |
| 653IFB01 | - | 630 | internal |
| - | 653IFB01 | 800 | |
| - | - | 1000÷2000 | |
| 653IFB01 | - | 2500 | |
| 653IFB01 | 653IFB01 | 3200-4000 | |
| - | 653IFB01 | 5000 | external |
| 652EFB01 | - | 630 | |
| 652EFB01 | 652EFB51 | 800÷1250 | |
| 652EFB02 | 652EFB52 | 1600 | |
| 652EFB04 | 652EFB52 | 2000 | |
| 653EFB02 | 652EFB54 | 2500 | |
| 653EFB03 | 653EFB52 | 3200 | |
| 653EFB04 | 653EFB53 | 4000 | |
| - | 653EFB54 | 5000 | |

Dimensional data

Fire barrier elements S120 (EN 1366-3, DIN 4102-09)



Fire barrier sizes
Dimension H changes with the rating; it is specified in the technical informations.



In order to ensure the maximum resistance class, for some ratings it is also necessary to fit at the factory an internal fire barrier following the indications on the table. It is therefore necessary to indicate at the order stage what elements will cross fire resistant walls or ceilings.

Figure 1

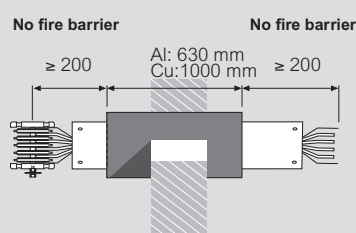
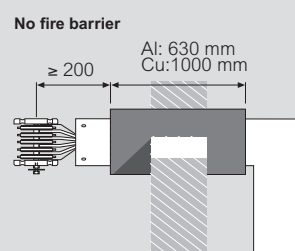


Figure 2



| USE OF INTERNAL OR EXTERNAL BARRIER | | | | | |
|-------------------------------------|----------|----------|-----------|----------|----------|
| Al | | | Cu | | |
| In (A) | Internal | External | In (A) | Internal | External |
| 630 | ✓ | ✓ | 800 | ✓ | ✓ |
| 800-2000 | - | ✓ | 1000-2500 | - | ✓ |
| 2500-4000 | ✓ | ✓ | 3200-5000 | ✓ | ✓ |

The external fire barrier can be used on any trunking component in compliance with the operating instructions specified in figures 1 and 2.

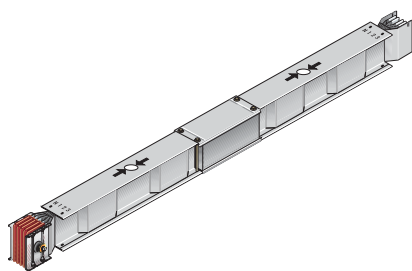


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

straight elements

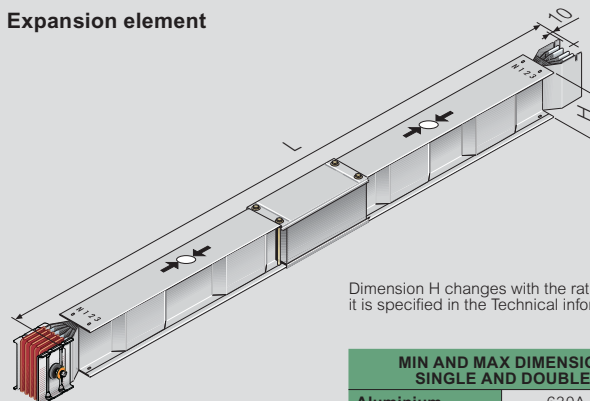


60280290P

| Cat.Nos | | Expansion element | |
|-----------|-----------|---|--|
| | | <p>Due to being subjected to temperature changes, both the busbar and the building suffer thermal expansions. The expansion element can absorb expansion and contraction of both the busbar trunking system section and the building, up to the maximum permitted length (50 mm approx.).</p> <p>The expansion element must be fitted near the expansion joints of the building and in straight sections of the line (horizontal and/or vertical) longer than 40 m.</p> <p>For straight line sections longer than 40 m, expansion elements must be fitted in a way that splits the path into equal sections not longer than 40 m. SCP busbar trunking system elements are designed to compensate for thermal expansion if the straight sections of the installation are less than 40 m; in this case no expansion element is necessary.</p> | |
| Al | Cu | In (A) | Type |
| 60280290P | - | 630 | L = 3 m Ideal for horizontal installations |
| 60280291P | 65280290P | 800 | |
| 60280292P | 65280291P | 1000 | |
| 60280294P | 65280293P | 1250 | |
| 60280296P | 65280295P | 1600 | |
| 60280297P | 65280296P | 2000 | |
| 60390294P | 65280298P | 2500 | |
| 60390296P | 65390295P | 3200 | |
| 60390297P | 65390296P | 4000 | L = 1,5 m Ideal for rising mains installation |
| - | 65390298P | 5000 | |
| 60280200P | - | 630 | |
| 60280201P | 65280200P | 800 | |
| 60280202P | 65280201P | 1000 | |
| 60280204P | 65280203P | 1250 | |
| 60280206P | 65280205P | 1600 | |
| 60280207P | 65280206P | 2000 | |
| 60390204P | 65280208P | 2500 | |
| 60390206P | 65390205P | 3200 | |
| 60390207P | 65390206P | 4000 | |
| - | 65390208P | 5000 | |

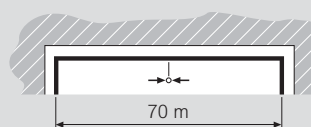
Dimensional data

Expansion element



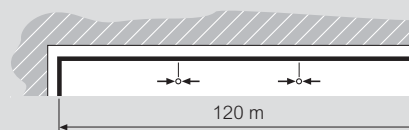
Dimension H changes with the ratings and it is specified in the Technical informations.

| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|---------------|
| Aluminium | 630A – 4000A |
| Copper | 800A – 5000A |
| (L) min/MAX [mm] | 1500 and 3000 |



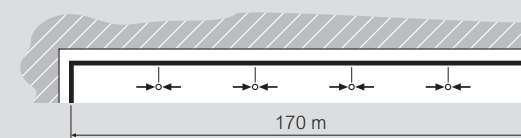
Example:

Straight section length 70 m = n°1 expansion element in the center of the line



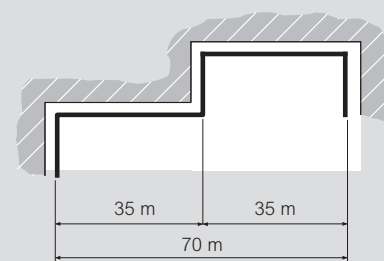
Example:

Straight section length 120 m = n°2 expansion elements, one every 40 m



Example:

Straight section length 170 m = no. 4 expansion elements, one every 34 m

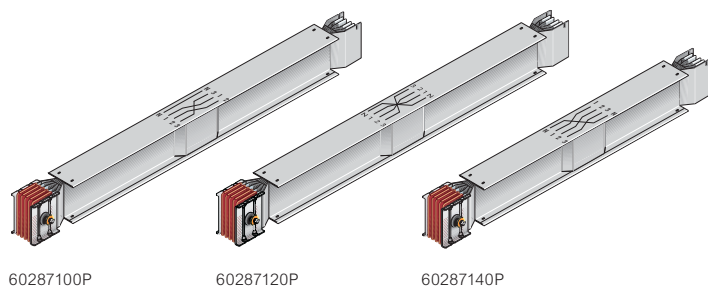


Example:

Section length 70 m. When the section is not straight, no expansion element is necessary

SUPER COMPACT (SCP)

straight elements



| Cat.Nos | | Phase balancing | |
|-----------|-----------|-----------------|--|
| Al | Cu | In (A) | Description |
| 60287100P | - | 630 | Straight elements with phase balancing are used to reduce and balance mutual phase reactance and impedance in case of long lines. In particularly long sections (> 100 metres) it is recommended that two transposition elements are fitted (one at one third and one at two thirds of the path), to balance the system electric impedance: In this way, it will be possible to have along the installation path all the possible combination, of reciprocal positions among phases, minimising load losses. |
| 60287101P | 65287100P | 800 | |
| 60287102P | 65287101P | 1000 | |
| 60287104P | 65287103P | 1250 | |
| 60287106P | 65287105P | 1600 | |
| 60287107P | 65287106P | 2000 | |
| 60397104P | 65397108P | 2500 | |
| 60397106P | 65397105P | 3200 | |
| 60397107P | 65397106P | 4000 | |
| - | 65397108P | 5000 | |

| Al | Cu | In (A) | Description |
|-----------|-----------|--------|--|
| 60287120P | - | 630 | The function of this element is to completely reversed the positions of the phases and the neutral. It is normally used in connections between transformer and electric board, or in the connections between electric boards, when the starting sequence is different from the arrival sequence. |
| 60287121P | 65287120P | 800 | |
| 60287122P | 65287121P | 1000 | |
| 60287124P | 65287123P | 1250 | |
| 60287126P | 65287125P | 1600 | |
| 60287127P | 65287126P | 2000 | |
| 60397124P | 65397128P | 2500 | |
| 60397126P | 65397125P | 3200 | |
| 60397127P | 65397126P | 4000 | |
| - | 65397128P | 5000 | |

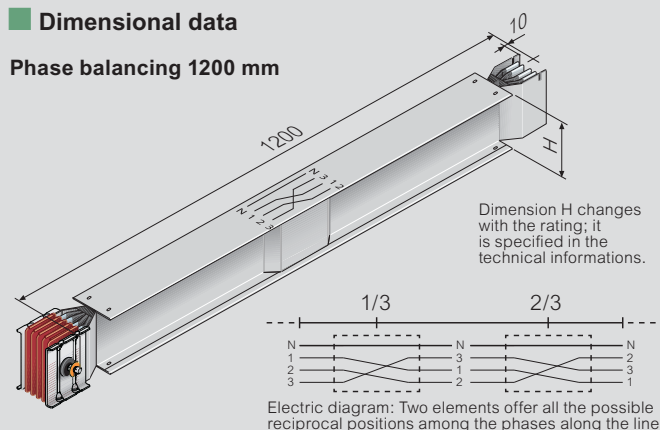
| Al | Cu | In (A) | Description |
|-----------|-----------|--------|---|
| 60287140P | - | 630 | The straight element with Neutral rotation is used to adapt the sequence of the busbar phases to the sequence of the connections required at the ends of the connections, should these be different. In the connection between electric boards, the neutral jump is normally used, as only the neutral position is normally identified. |
| 60287141P | 65287140P | 800 | |
| 60287142P | 65287141P | 1000 | |
| 60287144P | 65287143P | 1250 | |
| 60287146P | 65287145P | 1600 | |
| 60287147P | 65287146P | 2000 | |
| 60397144P | 65397148P | 2500 | |
| 60397146P | 65397145P | 3200 | |
| 60397147P | 65397146P | 4000 | |
| - | 65397148P | 5000 | |

Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

Dimensional data

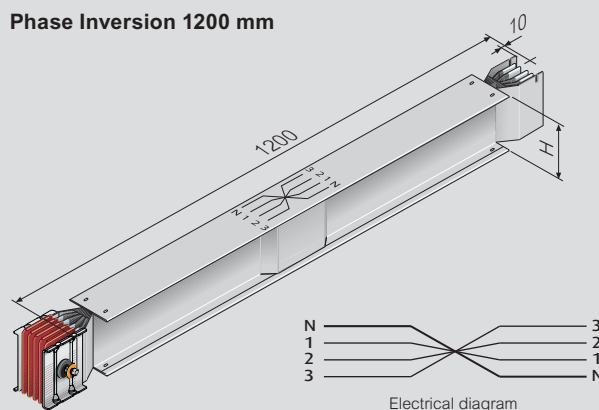
Phase balancing 1200 mm



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

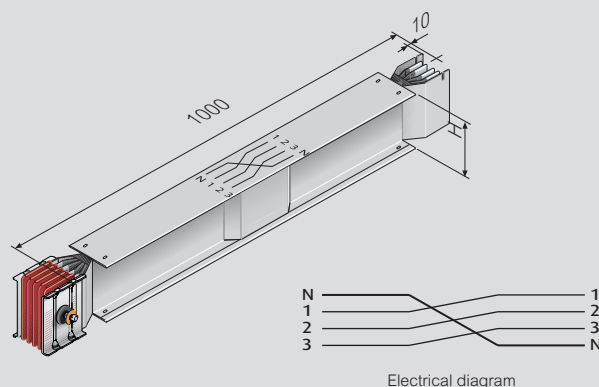
For example, in a line exceeding 300 m it is recommended that one phase transposition is fitted at 100 m, and another one at 200 m.

Phase Inversion 1200 mm



Warning: Use ONLY these elements for transport, and not for derivations (not use it when the line includes straight elements with derivations, or when they are provided for tap-off boxes even if bolted on the junction). The position of all the conductors, including the neutral, changes, and may cause serious problems on a connected load, if one is not fully aware that the phase sequence and the position of the neutral DO NOT comply with those indicated in the pre-printed labels.

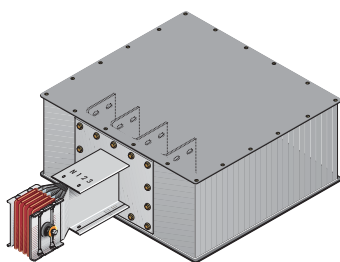
Element with neutral rotation 1000 mm



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

SUPER COMPACT (SCP)

feed unit

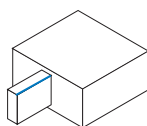


60281106P

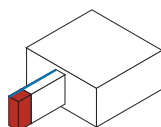
The feed units are used at the end of the lines, when the busbar must be powered using cables. They are available in the right (without Monobloc) and left (with Monobloc fitted) version. On request they are available with non-standard execution. End feed units for single bar busbars are supplied with an aluminium blind back closing plate. For double bar busbar trunking systems the plates are 2. Both versions are fitted with 2 extra side steel flanges and 2 inspection steel flanges (dark grey colour). The cable is connected directly to the busbars using bolts. For more information on board/busbar connection see the tables below (Dimensional Data For The Box). To feed the power supply cable through the back power supply flanges it will be necessary to drill a hole in case of single bar and two holes in case of double bar. The size of the holes is 170 x 410 mm

| Cat.Nos | | Feed unit | |
|-----------|-----------|-----------|--------------|
| Al | Cu | In (A) | Type |
| 60281100P | - | 630 | Right type 2 |
| 60281101P | 65281100P | 800 | |
| 60281102P | 65281101P | 1000 | |
| 60281104P | 65281103P | 1250 | |
| 60281106P | 65281105P | 1600 | |
| 60281107P | 65281106P | 2000 | |
| 60391104P | 65281108P | 2500 | |
| 60391106P | 65391105P | 3200 | |
| 60391107P | 65391106P | 4000 | Left type 1 |
| - | 65391108P | 5000 | |
| 60281110P | - | 630 | |
| 60281111P | 65281110P | 800 | |
| 60281112P | 65281111P | 1000 | |
| 60281114P | 65281113P | 1250 | |
| 60281116P | 65281115P | 1600 | |
| 60281117P | 65281116P | 2000 | |
| 60391114P | 65281118P | 2500 | |
| 60391116P | 65391115P | 3200 | |
| 60391117P | 65391116P | 4000 | |
| - | 65391118P | 5000 | |

Right type 2

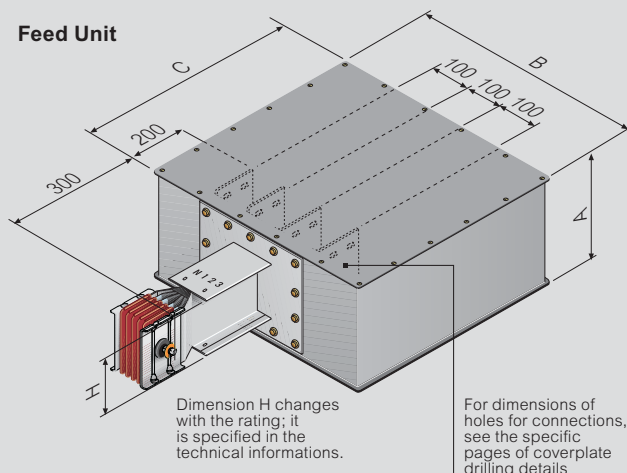


Left type 1



Dimensional data

Feed Unit



REAR CABLE INPUT

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

| DIMENSIONAL DATA FOR THE BOX | | | |
|------------------------------|------------|-------------|-------------|
| Al | 630A÷1250A | 1600÷2000A | 2500A÷4000A |
| Cu | 800A÷1250A | 1600A÷2500A | 3200÷5000A |
| (A) [mm] | 320 | 320 | 600 |
| (B) [mm] | 600 | 600 | 600 |
| (C) [mm] | 610 | 810 | 810 |

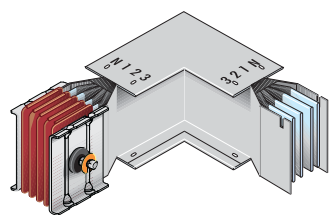
Special dimensions (not standard) are available on request, please contact Legrand.

| Type 2 (without monobloc) | Type 1 (with monobloc) |
|---------------------------|------------------------|
| | |

| CONNECTIONS | | | | |
|-------------|---|---|--|--------|
| Load (A) | The Copper (Cu) phase section is rounded up (mm²) | No. of connection holes for each busbar conductor | No. of one-pole cables that can be connected to each phase | |
| 630 | 600 | 4 | 4x150 | 2x300 |
| 800 | | | | |
| 1000 | | | | |
| 1250 | 700 | 4 | 4x240 | 3x300 |
| 1600 | 850 | 8 | 4x240 | 3x300 |
| 2000 | 1100 | 8 | 5x240 | 4x300 |
| 2500 | 1400 | 8 | 6x240 | 5x300 |
| 3200 | 1700 | 16 | 8x240 | 6x300 |
| 4000 | 2100 | 16 | 9x240 | 7x300 |
| 5000 | 3000 | 16 | 14x240 | 10x300 |

SUPER COMPACT (SCP)

elbows



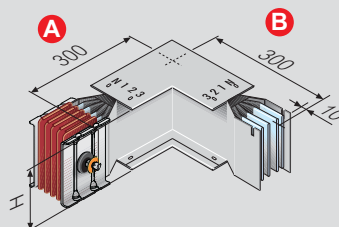
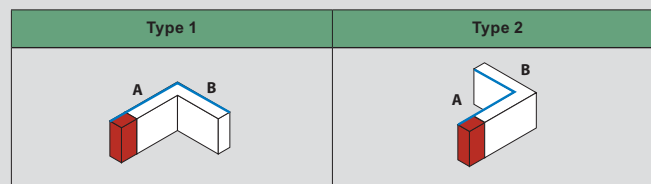
60280306P

| Cat.Nos | | Horizontal elbow | | |
|-----------|-----------|------------------|--------------|---------|
| Al | Cu | In (A) | Type | Type |
| 60280300P | - | 630 | Standard | |
| 60280301P | 65280300P | 800 | | |
| 60280302P | 65280301P | 1000 | | |
| 60280304P | 65280303P | 1250 | | |
| 60280306P | 65280305P | 1600 | | |
| 60280307P | 65280306P | 2000 | | |
| 60390304P | 65280308P | 2500 | | |
| 60390306P | 65390305P | 3200 | | |
| 60390307P | 65390306P | 4000 | | |
| - | 65390308P | 5000 | | |
| 60280320P | - | 630 | Right Type 1 | Special |
| 60280321P | 65280320P | 800 | | |
| 60280322P | 65280321P | 1000 | | |
| 60280324P | 65280323P | 1250 | | |
| 60280326P | 65280325P | 1600 | | |
| 60280327P | 65280326P | 2000 | | |
| 60390324P | 65280328P | 2500 | | |
| 60390326P | 65390325P | 3200 | | |
| 60390327P | 65390326P | 4000 | | |
| - | 65390328P | 5000 | | |
| 60280310P | - | 630 | Standard | |
| 60280311P | 65280310P | 800 | | |
| 60280312P | 65280311P | 1000 | | |
| 60280314P | 65280313P | 1250 | | |
| 60280316P | 65280315P | 1600 | | |
| 60280317P | 65280316P | 2000 | | |
| 60390314P | 65280318P | 2500 | | |
| 60390316P | 65390315P | 3200 | | |
| 60390317P | 65390316P | 4000 | | |
| - | 65390318P | 5000 | | |
| 60280330P | - | 630 | Left Type 2 | Special |
| 60280331P | 65280330P | 800 | | |
| 60280332P | 65280331P | 1000 | | |
| 60280334P | 65280333P | 1250 | | |
| 60280336P | 65280335P | 1600 | | |
| 60280337P | 65280336P | 2000 | | |
| 60390334P | 65280338P | 2500 | | |
| 60390336P | 65390335P | 3200 | | |
| 60390337P | 65390336P | 4000 | | |
| - | 65390338P | 5000 | | |

Dimensional data

Horizontal elbow

In order to define the type of horizontal elbow required, consider to place the element "edgewise" (conductors perpendicular to the ground). In this configuration "horizontal" elbows enable a path variation parallel to the ground. When the neutral busbar conductor faces the outside of the elbow, there will be a Right horizontal elbow (type 1). Contrariwise, with the neutral busbar conductor facing the inside of the elbow there will be a Left horizontal elbow (type 2).



The dimensions are referred to the standard elements.
Single/double bar (A+B):
300+300 mm

MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| Single bar min/MAX | |
|--------------------|-----------|
| A | 250/1299* |
| B | 250/1299* |
| Double bar min/MAX | |
| A | 250/1299* |
| B | 250/1299* |

Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard horizontal elbows (special), it is possible to have only one of the two sides in size exceeding 600 mm. For example, when ordering an horizontal elbow with size A=650 mm, the B size will have to be ≤ 600 mm

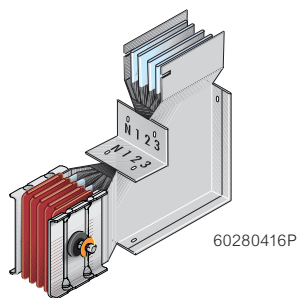


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

elbows

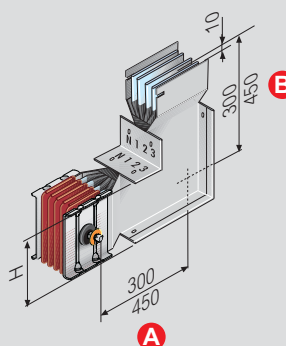
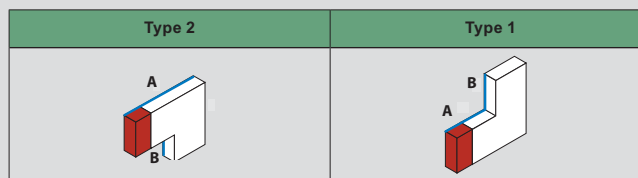


| Cat.Nos | | Vertical elbow | | |
|-----------|-----------|----------------|----------|--------------|
| Al | Cu | In (A) | Type | Type |
| 60280400P | - | 630 | Standard | Right Type 2 |
| 60280401P | 65280400P | 800 | | |
| 60280402P | 65280401P | 1000 | | |
| 60280404P | 65280403P | 1250 | | |
| 60280406P | 65280405P | 1600 | | |
| 60280407P | 65280406P | 2000 | | |
| 60390404P | 65280408P | 2500 | | |
| 60390406P | 65390405P | 3200 | Special | Left Type 1 |
| 60390407P | 65390406P | 4000 | | |
| - | 65390408P | 5000 | | |
| 60280420P | - | 630 | | |
| 60280421P | 65280420P | 800 | | |
| 60280422P | 65280421P | 1000 | | |
| 60280424P | 65280423P | 1250 | | |
| 60280426P | 65280425P | 1600 | | |
| 60280427P | 65280426P | 2000 | | |
| 60390424P | 65280428P | 2500 | Standard | Right Type 2 |
| 60390426P | 65390425P | 3200 | | |
| 60390427P | 65390426P | 4000 | | |
| - | 65390428P | 5000 | | |
| 60280410P | - | 630 | | |
| 60280411P | 65280410P | 800 | | |
| 60280412P | 65280411P | 1000 | | |
| 60280414P | 65280413P | 1250 | Special | Left Type 1 |
| 60280416P | 65280415P | 1600 | | |
| 60280417P | 65280416P | 2000 | | |
| 60390414P | 65280418P | 2500 | | |
| 60390416P | 65390415P | 3200 | | |
| 60390417P | 65390416P | 4000 | | |
| - | 65390418P | 5000 | | |
| 60280430P | - | 630 | Standard | Right Type 2 |
| 60280431P | 65280430P | 800 | | |
| 60280432P | 65280431P | 1000 | | |
| 60280434P | 65280433P | 1250 | | |
| 60280436P | 65280435P | 1600 | | |
| 60280437P | 65280436P | 2000 | | |
| 60390434P | 65280438P | 2500 | Special | Left Type 1 |
| 60390436P | 65390435P | 3200 | | |
| 60390437P | 65390436P | 4000 | | |
| - | 65390438P | 5000 | | |

Dimensional data

Vertical elbow

In order to define the type of vertical elbow, it is necessary to still place the element "edgewise" (conductors perpendicular to the ground), with the section with Monobloc facing the observer and the section without facing up. In this configuration, vertical "elbows" enable an up or down facing variation. If the neutral is on the left side, there will be a left vertical elbow (Type 1). If, on the other side, it is on the right side, there will be a right vertical elbow (Type 2).



MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| Single bar min/MAX | |
|--------------------|-----------|
| A | 300/1299* |
| B | 300/1299* |
| Double bar min/MAX | |
| A | 430/1449* |
| B | 430/1449* |

Dimension H changes with the rating; it is specified in the technical informations.

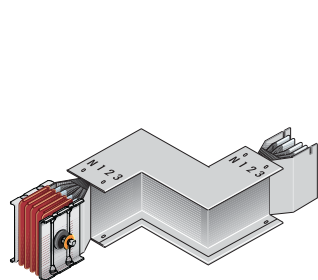
The dimensions are referred to the standard elements.
single bar (A+B) : 300+300 mm
double bar (A+B) : 450+450 mm

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

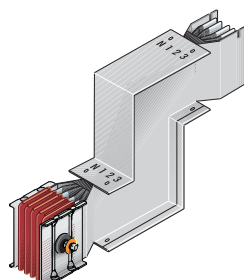
* For all the non standard vertical elbows (special), it is possible to have only one of the two sides in size exceeding 600 mm. For example, when ordering a vertical elbow with size A=650 mm, the B size will have to be ≤ 600 mm

SUPER COMPACT (SCP)

elbows



60280346P



60280456P

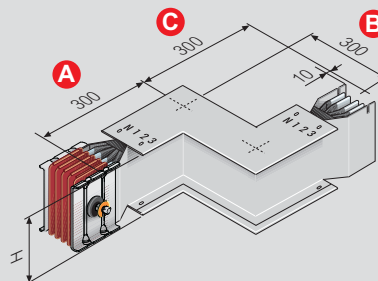
| Cat.Nos | | Double horizontal elbow | |
|-----------|-----------|-------------------------|------------------|
| Al | Cu | In (A) | Type |
| 60280340P | - | 630 | Right Type 1 |
| 60280341P | 65280340P | 800 | |
| 60280342P | 65280341P | 1000 | |
| 60280344P | 65280343P | 1250 | |
| 60280346P | 65280345P | 1600 | |
| 60280347P | 65280346P | 2000 | |
| 60390344P | 65280348P | 2500 | |
| 60390346P | 65390345P | 3200 | |
| 60390347P | 65390346P | 4000 | Left Type 2 |
| - | 65390348P | 5000 | |
| 60280350P | - | 630 | |
| 60280351P | 65280350P | 800 | |
| 60280352P | 65280351P | 1000 | |
| 60280354P | 65280353P | 1250 | |
| 60280356P | 65280355P | 1600 | |
| 60280357P | 65280356P | 2000 | |
| 60390354P | 65280358P | 2500 | |
| 60390356P | 65390355P | 3200 | |
| 60390357P | 65390356P | 4000 | |
| - | 65390458P | 5000 | |

| Cat.Nos | | Double vertical elbow | |
|-----------|-----------|-----------------------|------------------|
| Al | Cu | In (A) | Type |
| 60280440P | - | 630 | Right Type 2 |
| 60280441P | 65280440P | 800 | |
| 60280442P | 65280441P | 1000 | |
| 60280444P | 65280443P | 1250 | |
| 60280446P | 65280445P | 1600 | |
| 60280447P | 65280446P | 2000 | |
| 60390444P | 65280448P | 2500 | |
| 60390446P | 65390445P | 3200 | |
| 60390447P | 65390446P | 4000 | Left Type 1 |
| - | 65390448P | 5000 | |
| 60280450P | - | 630 | |
| 60280451P | 65280450P | 800 | |
| 60280452P | 65280451P | 1000 | |
| 60280454P | 65280453P | 1250 | |
| 60280456P | 65280455P | 1600 | |
| 60280457P | 65280456P | 2000 | |
| 60390454P | 65280458P | 2500 | |
| 60390456P | 65390455P | 3200 | |
| 60390457P | 65390456P | 4000 | |
| - | 65390458P | 5000 | |

Dimensional data

Double horizontal elbow

Double horizontal elbows are the union of two horizontal elbows; in order to define the type, it is enough to observe them starting from the Monobloc; if the first elbow met is left, we will have a double horizontal elbow left + right (Type 2). Contrariwise, if the first elbow met is right, we will have a double horizontal elbow right + left (Type 1).

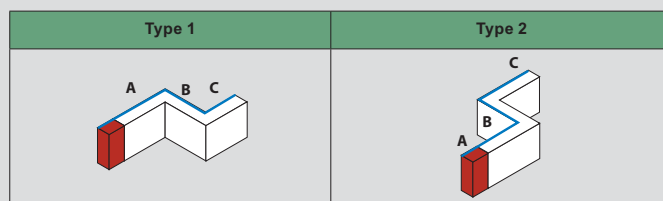


MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| Single bar min/MAX | |
|--------------------|-----------|
| A | 250/1299* |
| B | 50/599* |
| C | 250/1299* |
| Double bar min/MAX | |
| A | 250/1299* |
| B | 50/599* |
| C | 250/1299* |

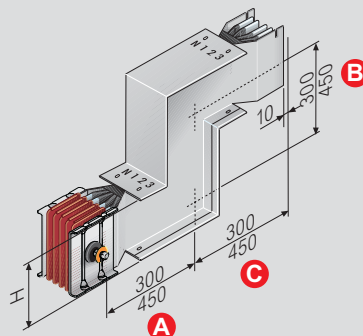
The dimensions are referred to the standard elements.
Single/double bar (A+B+C): 300+300+300 mm

Dimension H changes with the rating; it is specified in the technical informations.



Double vertical elbow

Double vertical elbows are the union of two vertical elbows; in order to define the type, it is enough to observe them starting from the Monobloc; if the first elbow met is left, we will have a double vertical elbow left + right (Type 1). Contrariwise, if the first elbow met is right, we will have a double vertical elbow right + left (Type 2).

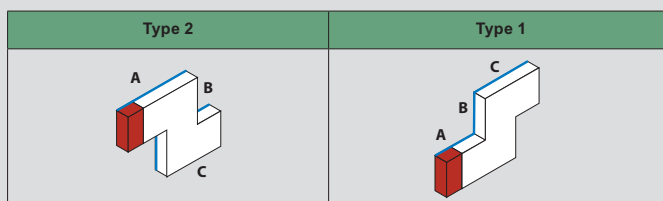


MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| Single bar min/MAX | |
|--------------------|-----------|
| A | 300/1299* |
| B | 50/599* |
| C | 300/1299* |
| Double bar min/MAX | |
| A | 430/1449* |
| B | 50/899* |
| C | 430/1449* |

The dimensions are referred to the standard elements.
Single bar (A+B+C): 300+300+300 mm
Double bar (A+B+C): 450+450+450 mm

Dimension H changes with the rating; it is specified in the technical informations.



No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard double Horizontal or double Vertical elbows (special), it is possible to have only one of the three sides in size exceeding 600 mm.

For example, when ordering a double horizontal or double vertical elbow with size A=650 mm, the B and C size will have to be ≤ 600 mm

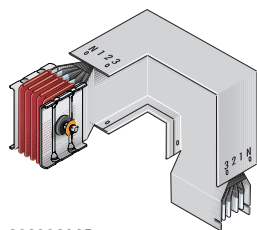


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

elbows



60280606P

| Cat.Nos | | Double elbow horizontal + vertical | |
|-----------|-----------|------------------------------------|--------|
| Al | Cu | In (A) | Type |
| 60280600P | - | 630 | Type 1 |
| 60280601P | 65280600P | 800 | |
| 60280602P | 65280601P | 1000 | |
| 60280604P | 65280603P | 1250 | |
| 60280606P | 65280605P | 1600 | |
| 60280607P | 65280606P | 2000 | |
| 60390604P | 65280608P | 2500 | |
| 60390606P | 65390605P | 3200 | |
| 60390607P | 65390606P | 4000 | Type 2 |
| - | 65390608P | 5000 | |
| 60280610P | - | 630 | |
| 60280611P | 65280610P | 800 | |
| 60280612P | 65280611P | 1000 | |
| 60280614P | 65280613P | 1250 | |
| 60280616P | 65280615P | 1600 | |
| 60280617P | 65280616P | 2000 | |
| 60390614P | 65280618P | 2500 | Type 3 |
| 60390616P | 65390615P | 3200 | |
| 60390617P | 65390616P | 4000 | |
| - | 65390618P | 5000 | |
| 60280620P | - | 630 | |
| 60280621P | 65280620P | 800 | |
| 60280622P | 65280621P | 1000 | |
| 60280624P | 65280623P | 1250 | |
| 60280626P | 65280625P | 1600 | Type 4 |
| 60280627P | 65280626P | 2000 | |
| 60390624P | 65280628P | 2500 | |
| 60390626P | 65390625P | 3200 | |
| 60390627P | 65390626P | 4000 | |
| - | 65390628P | 5000 | |
| 60280630P | - | 630 | |
| 60280631P | 65280630P | 800 | |
| 60280632P | 65280631P | 1000 | |
| 60280634P | 65280633P | 1250 | |
| 60280636P | 65280635P | 1600 | Type 4 |
| 60280637P | 65280636P | 2000 | |
| 60390634P | 65280638P | 2500 | |
| 60390636P | 65390635P | 3200 | |
| 60390637P | 65390636P | 4000 | |
| - | 65390638P | 5000 | |

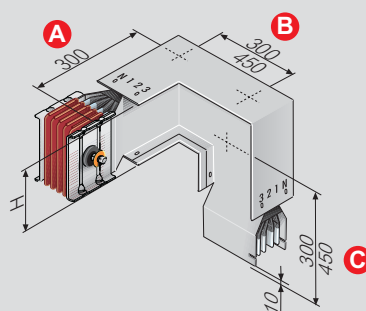
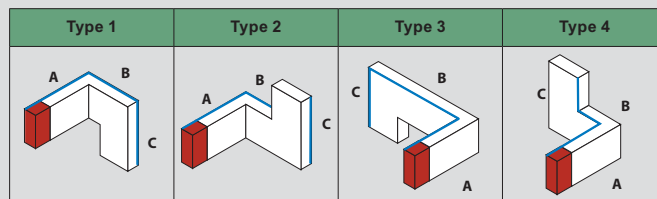
Dimensional data

Double elbow horizontal + vertical

Double elbows horizontal + vertical are the union of a horizontal and a vertical elbow, placed in succession starting from the side with Monobloc.

Depending on the type of elbows, the double horizontal + vertical elbow may be of four different types:

- Double elbow Horizontal RH + Vertical RH (Type 1)
- Double elbow Horizontal RH + Vertical LH (Type 2)
- Double elbow Horizontal LH + Vertical RH (Type 3)
- Double elbow Horizontal LH + Vertical LH (Type 4)



| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| A | 250/1299* |
| B | 195/599* |
| C | 300/1299* |
| Double bar min/MAX | |
| A | 250/1499* |
| B | 325/899* |
| C | 430/1449* |

The dimensions are referred to the standard elements.
Single bar (A+B+C): 300+300+300 mm
double bar (A+B+C): 300+450+450 mm

Dimension H changes with the rating; it is specified in the technical informations.

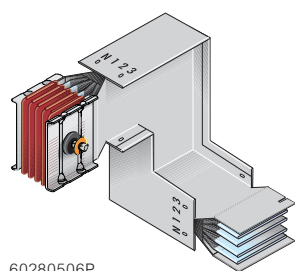
No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard double H+V elbow (special), it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering a horizontal + vertical elbow with size A=650 mm, the B and C size will have to be ≤ 600 mm

Note:
RH - Right
LH - Left

SUPER COMPACT (SCP)

elbows



60280506P

| Cat.Nos | | Double elbow vertical + horizontal | |
|-----------|-----------|------------------------------------|------------|
| Al | Cu | In (A) | Type |
| 60280500P | - | 630 | Type 1 |
| 60280501P | 65280500P | 800 | |
| 60280502P | 65280501P | 1000 | |
| 60280504P | 65280503P | 1250 | |
| 60280506P | 65280505P | 1600 | |
| 60280507P | 65280506P | 2000 | |
| 60390504P | 65280508P | 2500 | |
| 60390506P | 65390505P | 3200 | |
| 60390507P | 65390506P | 4000 | |
| - | 65390508P | 5000 | |
| 60280510P | - | 630 | Type 2 |
| 60280511P | 65280510P | 800 | |
| 60280512P | 65280511P | 1000 | |
| 60280514P | 65280513P | 1250 | |
| 60280516P | 65280515P | 1600 | |
| 60280517P | 65280516P | 2000 | |
| 60390514P | 65280518P | 2500 | |
| 60390516P | 65390515P | 3200 | |
| 60390517P | 65390516P | 4000 | |
| - | 65390518P | 5000 | |
| 60280520P | - | 630 | Type 3 |
| 60280521P | 65280520P | 800 | |
| 60280522P | 65280521P | 1000 | |
| 60280524P | 65280523P | 1250 | |
| 60280526P | 65280525P | 1600 | |
| 60280527P | 65280526P | 2000 | |
| 60390524P | 65280528P | 2500 | |
| 60390526P | 65390525P | 3200 | |
| 60390527P | 65390526P | 4000 | |
| - | 65390528P | 5000 | |
| 60280530P | - | 630 | Type 4 |
| 60280531P | 65280530P | 800 | |
| 60280532P | 65280531P | 1000 | |
| 60280534P | 65280533P | 1250 | |
| 60280536P | 65280535P | 1600 | |
| 60280537P | 65280536P | 2000 | |
| 60390534P | 65280538P | 2500 | |
| 60390536P | 65390535P | 3200 | |
| 60390537P | 65390536P | 4000 | |
| - | 65390538P | 5000 | |

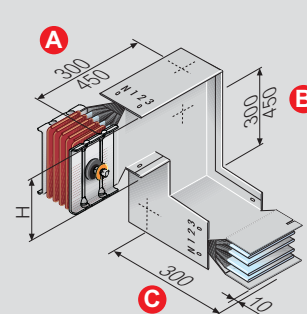
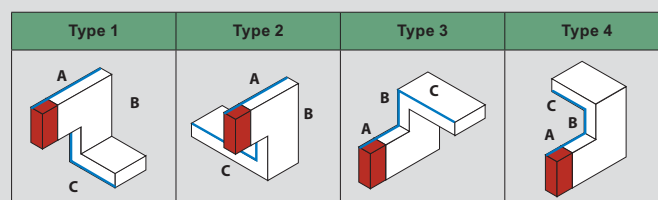
Dimensional data

Double elbow vertical + horizontal

Double elbows vertical + horizontal are the union of a vertical and a horizontal elbow, placed in succession starting from the side with Monobloc.

Depending on the type of elbows, the double vertical + horizontal elbow may be of four different types:

- Double elbow vertical RH + horizontal RH (Type 1)
- Double elbow vertical RH + horizontal LH (Type 2)
- Double elbow vertical LH + horizontal RH (Type 3)
- Double elbow vertical LH + horizontal LH (Type 4)



| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| A | 300/1299* |
| B | 195/599* |
| C | 250/1299* |
| Double bar min/MAX | |
| A | 430/1449* |
| B | 325/899* |
| C | 250/1449* |

Dimension H changes with the rating; it is specified in the technical informations.

The dimensions are referred to the standard elements.
Single bar (A+B+C): 300+300+300 mm
Double bar (A+B+C): 450+450+300 mm

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard double V+H elbows (special), it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering a double vertical + horizontal elbow with size A=650 mm, the B and C size will have to be ≤ 600 mm

Note:
RH - Right
LH - Left

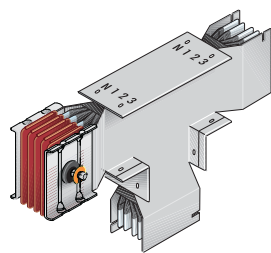


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

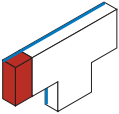
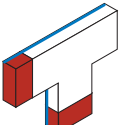
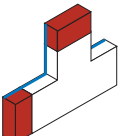
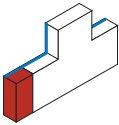
Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

T elements



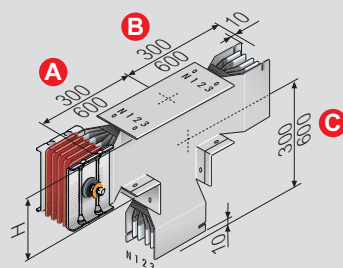
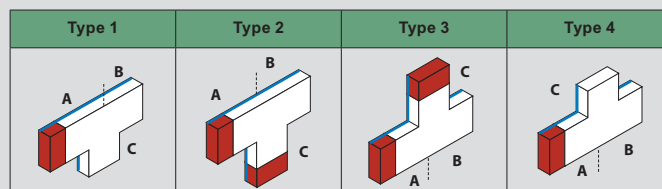
60280806P

| Cat.Nos | | Vertical T element | |
|-----------|-----------|--------------------|---|
| Al | Cu | In (A) | Type |
| 60280800P | - | 630 | Type 1  |
| 60280801P | 65280800P | 800 | |
| 60280802P | 65280801P | 1000 | |
| 60280804P | 65280803P | 1250 | |
| 60280806P | 65280805P | 1600 | |
| 60280807P | 65280806P | 2000 | |
| 60390804P | 65280808P | 2500 | |
| 60390806P | 65390805P | 3200 | |
| 60390807P | 65390806P | 4000 | Type 2  |
| - | 65390808P | 5000 | |
| 60280810P | - | 630 | |
| 60280811P | 65280810P | 800 | |
| 60280812P | 65280811P | 1000 | |
| 60280814P | 65280813P | 1250 | |
| 60280816P | 65280815P | 1600 | |
| 60280817P | 65280816P | 2000 | |
| 60390814P | 65280818P | 2500 | Type 3  |
| 60390816P | 65390815P | 3200 | |
| 60390817P | 65390816P | 4000 | |
| - | 65390818P | 5000 | |
| 60280820P | - | 630 | |
| 60280821P | 65280820P | 800 | |
| 60280822P | 65280821P | 1000 | |
| 60280824P | 65280823P | 1250 | |
| 60280826P | 65280825P | 1600 | Type 4  |
| 60280827P | 65280826P | 2000 | |
| 60390824P | 65280828P | 2500 | |
| 60390826P | 65390825P | 3200 | |
| 60390827P | 65390826P | 4000 | |
| - | 65390828P | 5000 | |
| 60280830P | - | 630 | |
| 60280831P | 65280830P | 800 | |
| 60280832P | 65280831P | 1000 | |
| 60280834P | 65280833P | 1250 | |
| 60280836P | 65280835P | 1600 | |
| 60280837P | 65280836P | 2000 | |
| 60390834P | 65280838P | 2500 | |
| 60390836P | 65390835P | 3200 | |
| 60390837P | 65390836P | 4000 | |
| - | 65390838P | 5000 | |

Dimensional data

Vertical T element

T-elements can be used to split the line in two branches, adding together the effect of two diverging elbows. There are four types of verticals "T" elements, as shown below.



MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

Single bar min/MAX

| | |
|---|-----------|
| A | 300/1299* |
| B | 300/1299* |
| C | 300/1299* |

Double bar min/MAX

| | |
|---|-----------|
| A | 450/1449* |
| B | 450/1449* |
| C | 450/1449* |

Dimension H changes with the rating; it is specified in the technical informations.

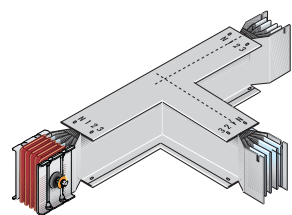
The dimensions are referred to the standard elements.
Single bar (A+B+C): 300+300+300 mm
Double bar (A+B+C): 600+600+600 mm

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard Vertical T elements (special), it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering a T vertical element with size A=650 mm, the B and C size will have to be ≤600 mm

SUPER COMPACT (SCP)

T elements



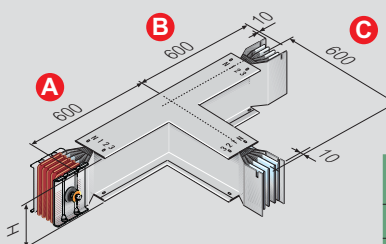
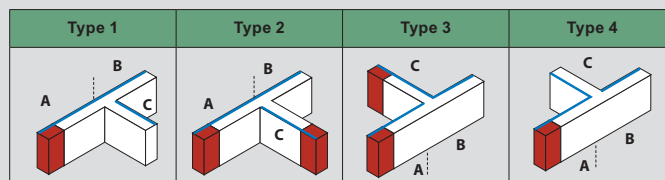
60280706P

| Cat.Nos | | Horizontal T element | |
|-----------|-----------|----------------------|--------|
| Al | Cu | In (A) | Type |
| 60280700P | - | 630 | Type 1 |
| 60280701P | 65280700P | 800 | |
| 60280702P | 65280701P | 1000 | |
| 60280704P | 65280703P | 1250 | |
| 60280706P | 65280705P | 1600 | |
| 60280707P | 65280706P | 2000 | |
| 60390704P | 65280708P | 2500 | |
| 60390706P | 65390705P | 3200 | |
| 60390707P | 65390706P | 4000 | Type 2 |
| - | 65390708P | 5000 | |
| 60280710P | - | 630 | |
| 60280711P | 65280710P | 800 | |
| 60280712P | 65280711P | 1000 | |
| 60280714P | 65280713P | 1250 | |
| 60280716P | 65280715P | 1600 | |
| 60280717P | 65280716P | 2000 | |
| 60390714P | 65280718P | 2500 | Type 3 |
| 60390716P | 65390715P | 3200 | |
| 60390717P | 65390716P | 4000 | |
| - | 65390718P | 5000 | |
| 60280720P | - | 630 | |
| 60280721P | 65280720P | 800 | |
| 60280722P | 65280721P | 1000 | |
| 60280724P | 65280723P | 1250 | |
| 60280726P | 65280725P | 1600 | Type 4 |
| 60280727P | 65280726P | 2000 | |
| 60390724P | 65280728P | 2500 | |
| 60390726P | 65390725P | 3200 | |
| 60390727P | 65390726P | 4000 | |
| - | 65390728P | 5000 | |
| 60280730P | - | 630 | |
| 60280731P | 65280730P | 800 | |
| 60280732P | 65280731P | 1000 | |
| 60280734P | 65280733P | 1250 | Type 4 |
| 60280736P | 65280735P | 1600 | |
| 60280737P | 65280736P | 2000 | |
| 60390734P | 65280738P | 2500 | |
| 60390736P | 65390735P | 3200 | |
| 60390737P | 65390736P | 4000 | |
| - | 65390738P | 5000 | |

Dimensional data

Horizontal T element

T-elements can be used to split the line in two branches, adding together the effect of two diverging elbows. There are four types of horizontal "T" elements, as shown below.



The dimensions are referred to the standard elements.
Single/double bar (A+B+C):
600+600+600 mm

| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| A | 600/1449* |
| B | 600/1449* |
| C | 600/1449* |
| Double bar min/MAX | |
| A | 600/1449* |
| B | 600/1449* |
| C | 600/1449* |

Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard Horizontal T elements (special), it is possible to have only one of the three sides in size exceeding 600 mm.
For example, when ordering a T horizontal element with size A=650 mm, the B and C size will have to be ≤ 600 mm

Note:

Only in special cases, where is not possible to use the standard element, is possible to have only one of three arms with minimum dimension of 300mm.

For more informations please contact Legrand.

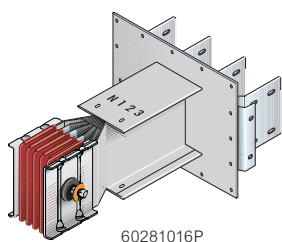


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

connection interfaces with exit bars



60281016P

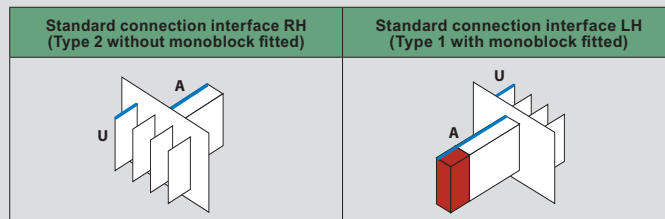
Connection interfaces with exit bars

| Cat.Nos | | In (A) | Type | Type |
|-----------|-----------|--------|-----------------|----------|
| Al | Cu | | | |
| 60281000P | - | 630 | Right Type 2 | Standard |
| 60281001P | 65281000P | 800 | | |
| 60281002P | 65281001P | 1000 | | |
| 60281004P | 65281003P | 1250 | | |
| 60281006P | 65281005P | 1600 | | |
| 60281007P | 65281006P | 2000 | | |
| 60391004P | 65281008P | 2500 | | |
| 60391006P | 65391005P | 3200 | | |
| 60391007P | 65391006P | 4000 | | |
| - | 65391008P | 5000 | | |
| 60281020P | - | 630 | Special | Special |
| 60281021P | 65281020P | 800 | | |
| 60281022P | 65281021P | 1000 | | |
| 60281024P | 65281023P | 1250 | | |
| 60281026P | 65281025P | 1600 | | |
| 60281027P | 65281026P | 2000 | | |
| 60391024P | 65281028P | 2500 | | |
| 60391026P | 65391025P | 3200 | | |
| 60391027P | 65391026P | 4000 | | |
| - | 65391028P | 5000 | | |
| 60281010P | - | 630 | Left Type 1 | Standard |
| 60281011P | 65281010P | 800 | | |
| 60281012P | 65281011P | 1000 | | |
| 60281014P | 65281013P | 1250 | | |
| 60281016P | 65281015P | 1600 | | |
| 60281017P | 65281016P | 2000 | | |
| 60391014P | 65281018P | 2500 | | |
| 60391016P | 65391015P | 3200 | | |
| 60391017P | 65391016P | 4000 | | |
| - | 65391018P | 5000 | | |
| 60281030P | - | 630 | Special | Special |
| 60281031P | 65281030P | 800 | | |
| 60281032P | 65281031P | 1000 | | |
| 60281034P | 65281033P | 1250 | | |
| 60281036P | 65281035P | 1600 | | |
| 60281037P | 65281036P | 2000 | | |
| 60391034P | 65281038P | 2500 | | |
| 60391036P | 65391035P | 3200 | | |
| 60391037P | 65391036P | 4000 | | |
| - | 65391038P | 5000 | | |

Dimensional data

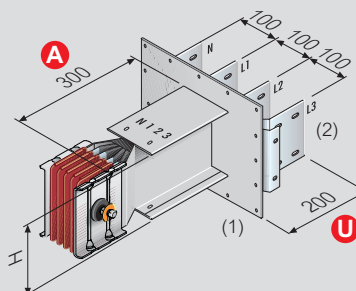
Connection interfaces with exit bars

Standard connection interfaces are used at the end of the lines to connect the busbar to boards or transformers. They are available in the right (without Monobloc) and left (with Monobloc fitted) version. The drawings below refer to the standard versions. Different executions are available on request (e.g.: length, centre distance between bar conductors, drilling, etc.).



Note:
RH - Right
LH - Left

Standard connection interface



See on page 92 the drawings with all drilling details for dimensions of coverplate (1) and bars (2).

MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| Single bar min/MAX | |
|--------------------|----------|
| U | 150/400 |
| A | 200/1299 |
| Double bar min/MAX | |
| U | 150/400 |
| A | 200/1299 |

The dimensions are referred to the standard elements.
Single/double bar (U+A):
200+300 mm

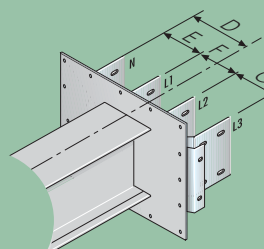
Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

On request is available the busbar connection interface with exit bars for range:

Al: 5000A
Cu: 6300A

Special connection interface with interaxes not standard



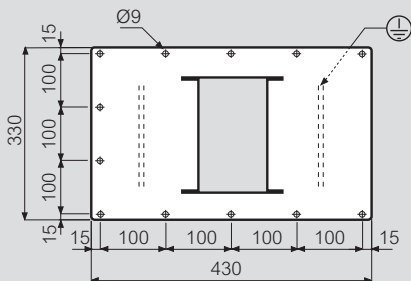
Dimensioning indications to be provided when using a non-standard centre distance

SUPER COMPACT (SCP)

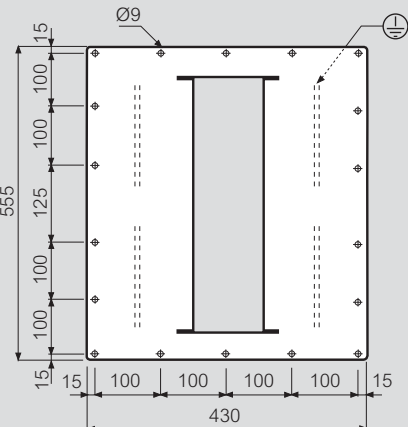
dimensional data

Coverplate drilling details (1)

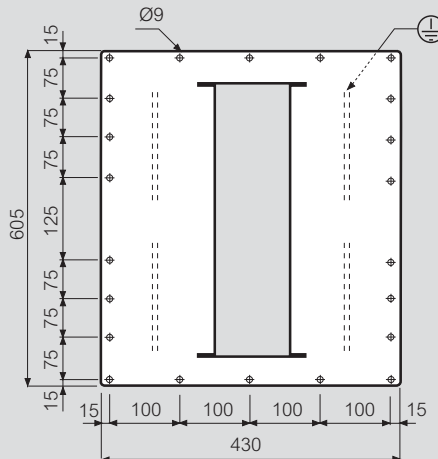
Al 630A÷2000A
Cu 800A÷2500A



Al 2500A÷3200A
Cu 3200A÷4000A

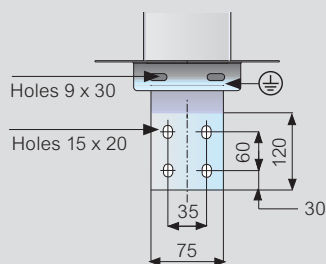


Al 4000A
Cu 5000A

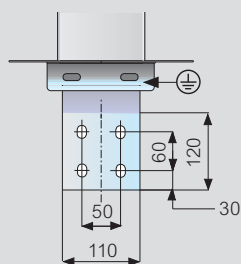


Bar drilling details (2)

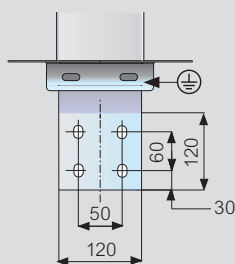
Al 630A
Cu 800A



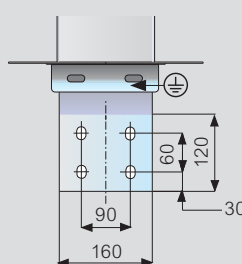
Al 800A-1000A
Cu 1000A-1250A



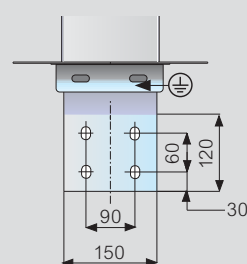
Al 1250A



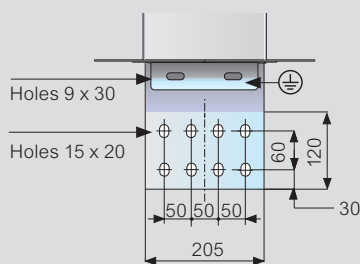
Al 1600A



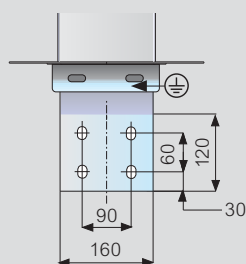
Cu 1600A



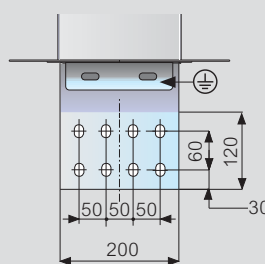
Al 2000A



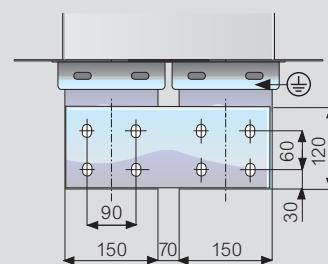
Cu 2000A



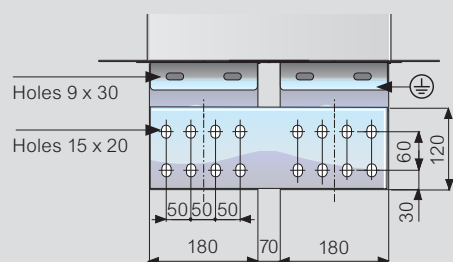
Cu 2500A



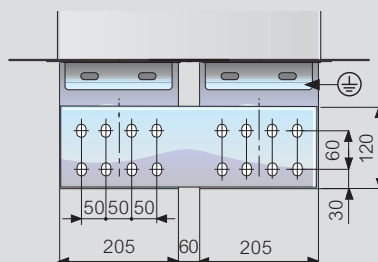
Al 2500A
Cu 3200A



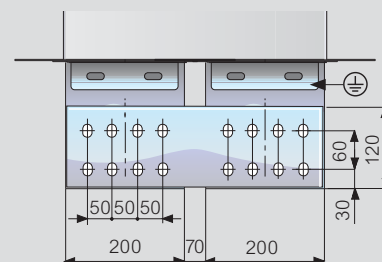
Al 3200A
Cu 4000A



Al 4000A

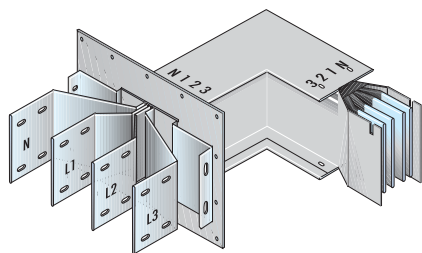


Cu 5000A



SUPER COMPACT (SCP)

connection interfaces with exit bars + horizontal elbow



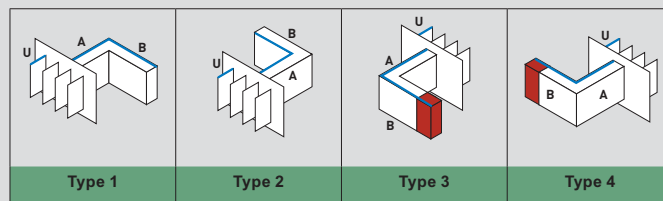
60281306P

| Cat.Nos | | Connection interfaces with exit bars + horizontal elbow | |
|-----------|-----------|---|--------|
| Al | Cu | In (A) | Type |
| 60281300P | - | 630 | Type 1 |
| 60281301P | 65281300P | 800 | |
| 60281302P | 65281301P | 1000 | |
| 60281304P | 65281303P | 1250 | |
| 60281306P | 65281305P | 1600 | |
| 60281307P | 65281306P | 2000 | |
| 60391304P | 65281308P | 2500 | |
| 60391306P | 65391305P | 3200 | Type 2 |
| 60391307P | 65391306P | 4000 | |
| - | 65391308P | 5000 | |
| 60281310P | - | 630 | |
| 60281311P | 65281310P | 800 | |
| 60281312P | 65281311P | 1000 | |
| 60281314P | 65281313P | 1250 | |
| 60281316P | 65281315P | 1600 | |
| 60281317P | 65281316P | 2000 | |
| 60391314P | 65281318P | 2500 | Type 3 |
| 60391316P | 65391315P | 3200 | |
| 60391317P | 65391316P | 4000 | |
| - | 65391318P | 5000 | |
| 60281320P | - | 630 | |
| 60281321P | 65281320P | 800 | |
| 60281322P | 65281321P | 1000 | |
| 60281324P | 65281323P | 1250 | |
| 60281326P | 65281325P | 1600 | |
| 60281327P | 65281326P | 2000 | |
| 60391324P | 65281328P | 2500 | Type 4 |
| 60391326P | 65391325P | 3200 | |
| 60391327P | 65391326P | 4000 | |
| - | 65391328P | 5000 | |
| 60281330P | - | 630 | |
| 60281331P | 65281330P | 800 | |
| 60281332P | 65281331P | 1000 | |
| 60281334P | 65281333P | 1250 | |
| 60281336P | 65281335P | 1600 | |
| 60281337P | 65281336P | 2000 | |
| 60391334P | 65281338P | 2500 | |
| 60391336P | 65391335P | 3200 | |
| 60391337P | 65391336P | 4000 | |
| - | 65391338P | 5000 | |

Dimensional data

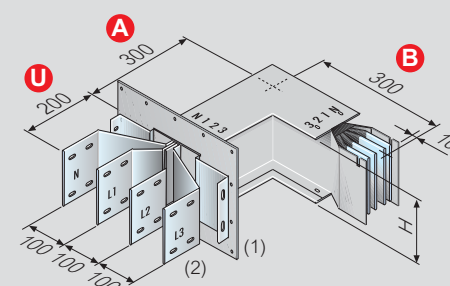
Connection interfaces with exit bars + horizontal elbow

This element is the union of a connection interface with exit bars and a horizontal elbow.



The dimensions are referred to the standard elements.

Single/double bar (U+A+B): 200+300+300 mm



| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| U | 150/400 |
| A | 115/1299* |
| B | 250/1299* |
| Double bar min/MAX | |
| U | 150/400 |
| A | 115/1299* |
| B | 250/1299* |

See on page 92 the drawings with all drilling details for dimensions of coverplate (1) and bars (2).

Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard connection interface with exit bars + horizontal elbows (special), it is possible to have only one of the two sides in size exceeding 600 mm. For example, when ordering an interface with exit bars + horizontal elbow with size A=650 mm, the B size will have to be ≤ 600 mm

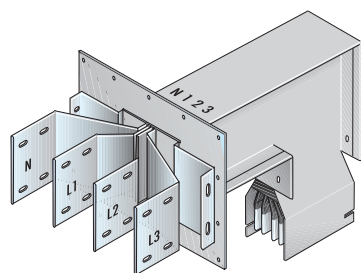


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

connection interfaces with exit bars + vertical elbow



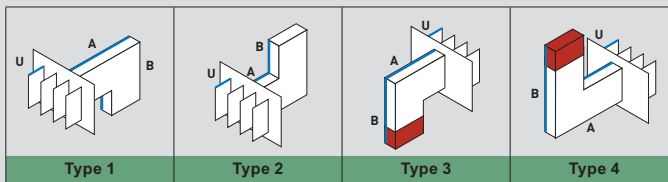
60281406P

| Cat.Nos | | Connection interfaces with exit bars + vertical elbow | |
|-----------|-----------|---|--------|
| Al | Cu | In (A) | Type |
| 60281400P | - | 630 | Type 1 |
| 60281401P | 65281400P | 800 | |
| 60281402P | 65281401P | 1000 | |
| 60281404P | 65281403P | 1250 | |
| 60281406P | 65281405P | 1600 | |
| 60281407P | 65281406P | 2000 | |
| 60391404P | 65281408P | 2500 | |
| 60391406P | 65391405P | 3200 | |
| 60391407P | 65391406P | 4000 | Type 2 |
| - | 65391408P | 5000 | |
| 60281410P | - | 630 | |
| 60281411P | 65281410P | 800 | |
| 60281412P | 65281411P | 1000 | |
| 60281414P | 65281413P | 1250 | |
| 60281416P | 65281415P | 1600 | |
| 60281417P | 65281416P | 2000 | |
| 60391414P | 65281418P | 2500 | Type 3 |
| 60391416P | 65391415P | 3200 | |
| 60391417P | 65391416P | 4000 | |
| - | 65391418P | 5000 | |
| 60281420P | - | 630 | |
| 60281421P | 65281420P | 800 | |
| 60281422P | 65281421P | 1000 | |
| 60281424P | 65281423P | 1250 | |
| 60281426P | 65281425P | 1600 | Type 4 |
| 60281427P | 65281426P | 2000 | |
| 60391424P | 65281428P | 2500 | |
| 60391426P | 65391425P | 3200 | |
| 60391427P | 65391426P | 4000 | |
| - | 65391428P | 5000 | |
| 60281430P | - | 630 | |
| 60281431P | 65281430P | 800 | |
| 60281432P | 65281431P | 1000 | |
| 60281434P | 65281433P | 1250 | Type 4 |
| 60281436P | 65281435P | 1600 | |
| 60281437P | 65281436P | 2000 | |
| 60391434P | 65281438P | 2500 | |
| 60391436P | 65391435P | 3200 | |
| 60391437P | 65391436P | 4000 | |
| - | 65391438P | 5000 | |

Dimensional data

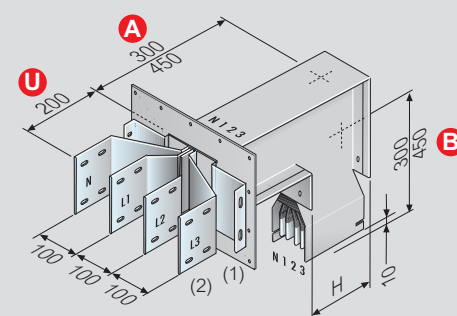
Connection interfaces with exit bars + vertical elbow

This element is the union of a connection interface with exit bars and a vertical elbow



The dimensions are referred to the standard elements.

Single bar (U+A+B): 200+300+300 mm
Double bar (U+A+B): 200+450+450 mm



| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| U | 150/400 |
| A | 160/1299* |
| B | 300/1299* |
| Double bar min/MAX | |
| U | 150/400 |
| A | 290/1449* |
| B | 430/1449* |

See on page 92 the drawings with all drilling details for dimensions of coverplate (1) and bars (2).

Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard connection interface with exit bars + vertical elbows (special), it is possible to have only one of the two sides in size exceeding 600 mm. For example, when ordering an interface with exit bars + vertical elbow with size A=650 mm, the B size will have to be ≤ 600 mm

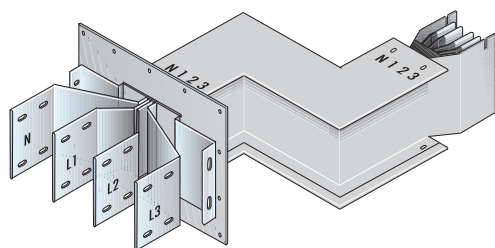


Single bar:
630A-2000A (Al)
800A-2500A (Cu)


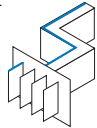

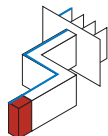
Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

connection interfaces with exit bars + double horizontal elbow



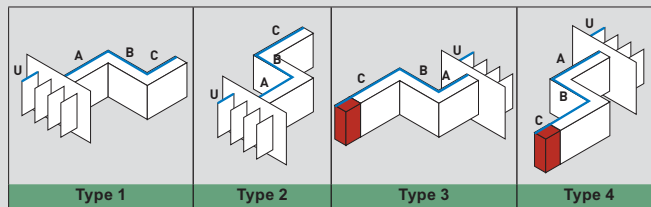
60281346P

| Cat.Nos | | Connection interfaces with exit bars + double horizontal elbow | |
|-----------|-----------|--|---|
| Al | Cu | In (A) | Type |
| 60281340P | - | 630 | Type 1  |
| 60281341P | 65281340P | 800 | |
| 60281342P | 65281341P | 1000 | |
| 60281344P | 65281343P | 1250 | |
| 60281346P | 65281345P | 1600 | |
| 60281347P | 65281346P | 2000 | |
| 60391344P | 65281348P | 2500 | |
| 60391346P | 65391345P | 3200 | |
| 60391347P | 65391346P | 4000 | Type 2  |
| - | 65391348P | 5000 | |
| 60281350P | - | 630 | |
| 60281351P | 65281350P | 800 | |
| 60281352P | 65281351P | 1000 | |
| 60281354P | 65281353P | 1250 | |
| 60281356P | 65281355P | 1600 | |
| 60281357P | 65281356P | 2000 | |
| 60391354P | 65281358P | 2500 | Type 3  |
| 60391356P | 65391355P | 3200 | |
| 60391357P | 65391356P | 4000 | |
| - | 65391358P | 5000 | |
| 60281360P | - | 630 | |
| 60281361P | 65281360P | 800 | |
| 60281362P | 65281361P | 1000 | |
| 60281364P | 65281363P | 1250 | |
| 60281366P | 65281365P | 1600 | Type 4  |
| 60281367P | 65281366P | 2000 | |
| 60391364P | 65281368P | 2500 | |
| 60391366P | 65391365P | 3200 | |
| 60391367P | 65391366P | 4000 | |
| - | 65391368P | 5000 | |
| 60281370P | - | 630 | |
| 60281371P | 65281370P | 800 | |
| 60281372P | 65281371P | 1000 | |
| 60281374P | 65281373P | 1250 | |
| 60281376P | 65281375P | 1600 | |
| 60281377P | 65281376P | 2000 | |
| 60391374P | 65281378P | 2500 | |
| 60391376P | 65391375P | 3200 | |
| 60391377P | 65391376P | 4000 | |
| - | 65391378P | 5000 | |

Dimensional data

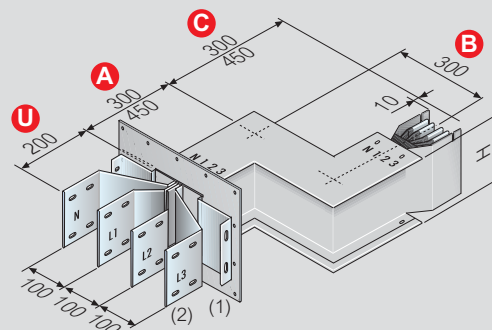
Connection interfaces with exit bars + double horizontal elbow

This element is the union of a connection interface with exit bars and a two horizontal elbows.



The dimensions are referred to the standard elements.

Single bar (U+A+B+C): 200+300+300+300 mm
Double bar (U+A+B+C): 200+450+300+450 mm



MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR

| Single bar min/MAX | |
|--------------------|----------|
| U | 150/400 |
| A | 115/599 |
| B | 50/599 |
| C | 250/1299 |
| Double bar min/MAX | |
| U | 150/400 |
| A | 115/599 |
| B | 50/599 |
| C | 250/1299 |

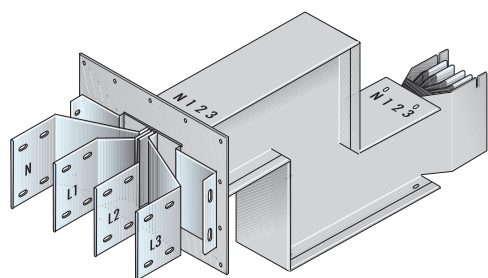
See on page 92 the drawings with all drilling details for dimensions of coverplate (1) and bars (2).

Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

SUPER COMPACT (SCP)

connection interfaces with exit bars + double vertical elbow



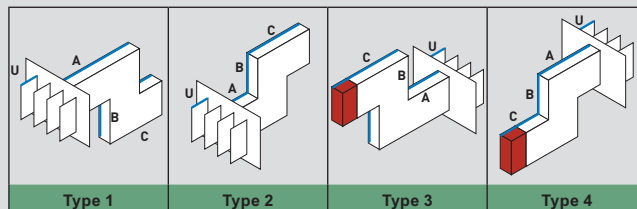
60281446P

| Cat.Nos | | Connection interfaces with exit bars + double vertical elbow | |
|-----------|-----------|--|--------|
| Al | Cu | In (A) | Type |
| 60281440P | - | 630 | Type 1 |
| 60281441P | 65281440P | 800 | |
| 60281442P | 65281441P | 1000 | |
| 60281444P | 65281443P | 1250 | |
| 60281446P | 65281445P | 1600 | |
| 60281447P | 65281446P | 2000 | |
| 60391444P | 65281448P | 2500 | |
| 60391446P | 65391445P | 3200 | |
| 60391447P | 65391446P | 4000 | |
| - | 65391448P | 5000 | |
| 60281450P | - | 630 | Type 2 |
| 60281451P | 65281450P | 800 | |
| 60281452P | 65281451P | 1000 | |
| 60281454P | 65281453P | 1250 | |
| 60281456P | 65281455P | 1600 | |
| 60281457P | 65281456P | 2000 | |
| 60391454P | 65281458P | 2500 | |
| 60391456P | 65391455P | 3200 | |
| 60391457P | 65391456P | 4000 | |
| - | 65391458P | 5000 | |
| 60281460P | - | 630 | Type 3 |
| 60281461P | 65281460P | 800 | |
| 60281462P | 65281461P | 1000 | |
| 60281464P | 65281463P | 1250 | |
| 60281466P | 65281465P | 1600 | |
| 60281467P | 65281466P | 2000 | |
| 60391464P | 65281468P | 2500 | |
| 60391466P | 65391465P | 3200 | |
| 60391467P | 65391466P | 4000 | |
| - | 65391468P | 5000 | |
| 60281470P | - | 630 | Type 4 |
| 60281471P | 65281470P | 800 | |
| 60281472P | 65281471P | 1000 | |
| 60281474P | 65281473P | 1250 | |
| 60281476P | 65281475P | 1600 | |
| 60281477P | 65281476P | 2000 | |
| 60391474P | 65281478P | 2500 | |
| 60391476P | 65391475P | 3200 | |
| 60391477P | 65391476P | 4000 | |
| - | 65391478P | 5000 | |

Dimensional data

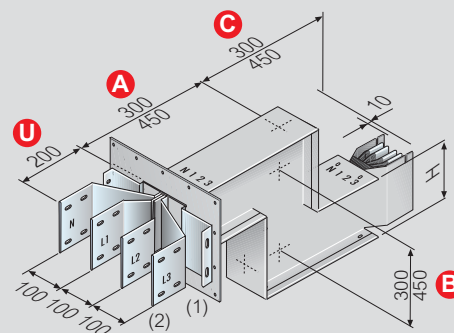
Connection interfaces with exit bars + double vertical elbow

This element is the union of a connection interface with exit bars and a two vertical elbows.



The dimensions are referred to the standard elements.

Single bar (U+A+B+C): 200+300+300+300 mm
Double bar (U+A+B+C): 200+450+450+450 mm



| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| U | 150/400 |
| A | 160/599 |
| B | 50/599 |
| C | 300/129 |
| Double bar min/MAX | |
| U | 150/400 |
| A | 290/599* |
| B | 50/899* |
| C | 430/1449* |

See on page 92 the drawings with all drilling details for dimensions of coverplate (1) and bars (2).

Dimension H changes with the rating; it is specified in the technical informations.

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard connection interface with exit bars + double vertical elbows (special), it is possible to have only one of the three sides in size exceeding 600 mm.

For example, when ordering a connection interface with exit bars + double vertical elbow with size C=650 mm, the A and B size will have to be ≤600 mm

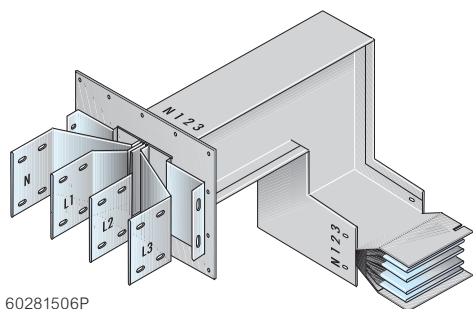


Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

connection interfaces with exit bars + vertical elbow + horizontal elbow



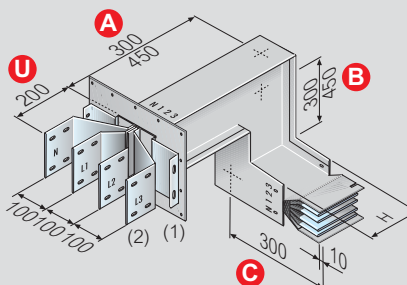
60281506P

| Cat.Nos | | In (A) | Type | |
|-----------|-----------|--------|---------|--|
| Al | Cu | | | |
| 60281500P | - | 630 | Type 1 | |
| 60281501P | 65281500P | 800 | | |
| 60281502P | 65281501P | 1000 | | |
| 60281504P | 65281503P | 1250 | | |
| 60281506P | 65281505P | 1600 | | |
| 60281507P | 65281506P | 2000 | | |
| 60391504P | 65281508P | 2500 | | |
| 60391506P | 65391505P | 3200 | | |
| 60391507P | 65391506P | 4000 | Type 2 | |
| - | 65391508P | 5000 | | |
| 60281510P | - | 630 | | |
| 60281511P | 65281510P | 800 | | |
| 60281512P | 65281511P | 1000 | | |
| 60281514P | 65281513P | 1250 | | |
| 60281516P | 65281515P | 1600 | | |
| 60281517P | 65281516P | 2000 | | |
| 60391514P | 65281518P | 2500 | Type 3 | |
| 60391516P | 65391515P | 3200 | | |
| 60391517P | 65391516P | 4000 | | |
| - | 65391518P | 5000 | | |
| 60281520P | - | 630 | | |
| 60281521P | 65281520P | 800 | | |
| 60281522P | 65281521P | 1000 | | |
| 60281524P | 65281523P | 1250 | | |
| 60281526P | 65281525P | 1600 | Type 4 | |
| 60281527P | 65281526P | 2000 | | |
| 60391524P | 65281528P | 2500 | | |
| 60391526P | 65391525P | 3200 | | |
| 60391527P | 65391526P | 4000 | | |
| - | 65391528P | 5000 | | |
| 60281530P | - | 630 | | |
| 60281531P | 65281530P | 800 | | |
| 60281532P | 65281531P | 1000 | Type 5 | |
| 60281534P | 65281533P | 1250 | | |
| 60281536P | 65281535P | 1600 | | |
| 60281537P | 65281536P | 2000 | | |
| 60391534P | 65281538P | 2500 | | |
| 60391536P | 65391535P | 3200 | | |
| 60391537P | 65391536P | 4000 | | |
| - | 65391538P | 5000 | | |
| 60281540P | - | 630 | Type 6 | |
| 60281541P | 65281540P | 800 | | |
| 60281542P | 65281541P | 1000 | | |
| 60281544P | 65281543P | 1250 | | |
| 60281546P | 65281545P | 1600 | | |
| 60281547P | 65281546P | 2000 | | |
| 60391544P | 65281548P | 2500 | | |
| 60391546P | 65391545P | 3200 | | |
| 60391547P | 65391546P | 4000 | Type 7 | |
| - | 65391548P | 5000 | | |
| 60281550P | - | 630 | | |
| 60281551P | 65281550P | 800 | | |
| 60281552P | 65281551P | 1000 | | |
| 60281554P | 65281553P | 1250 | | |
| 60281556P | 65281555P | 1600 | | |
| 60281557P | 65281556P | 2000 | | |
| 60391554P | 65281558P | 2500 | Type 8 | |
| 60391556P | 65391555P | 3200 | | |
| 60391557P | 65391556P | 4000 | | |
| - | 65391558P | 5000 | | |
| 60281560P | - | 630 | | |
| 60281561P | 65281560P | 800 | | |
| 60281562P | 65281561P | 1000 | | |
| 60281564P | 65281563P | 1250 | | |
| 60281566P | 65281565P | 1600 | Type 9 | |
| 60281567P | 65281566P | 2000 | | |
| 60391564P | 65281568P | 2500 | | |
| 60391566P | 65391565P | 3200 | | |
| 60391567P | 65391566P | 4000 | | |
| - | 65391568P | 5000 | | |
| 60281570P | - | 630 | | |
| 60281571P | 65281570P | 800 | | |
| 60281572P | 65281571P | 1000 | Type 10 | |
| 60281574P | 65281573P | 1250 | | |
| 60281576P | 65281575P | 1600 | | |
| 60281577P | 65281576P | 2000 | | |
| 60391574P | 65281578P | 2500 | | |
| 60391576P | 65391575P | 3200 | | |
| 60391577P | 65391576P | 4000 | | |
| - | 65391578P | 5000 | | |

Dimensional data

Connection interfaces with exit bars + vertical elbow + horizontal elbow

This element is the union of a connection interface with exit bars and a vertical and horizontal elbow.



| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| U | 150/400 |
| A | 160/599 |
| B | 195/599 |
| C | 250/1299 |
| Double bar min/MAX | |
| U | 150/400 |
| A | 290/749* |
| B | 325/749* |
| C | 250/1449* |

The dimensions are referred to the standard elements.
Single bar (U+A+B+C):
200+300+300+300 mm
Double bar (U+A+B+C):
200+450+450+300 mm

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

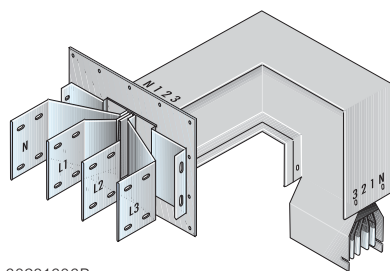
* For all the non standard connection interface with exit bars + vertical elbows + horizontal elbow (special), it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering a connection interface with exit bars + vertical elbow + horizontal elbow with size C=650 mm, the A and B size will have to be <= 600 mm

See on page 92 the drawings with all drilling details for dimensions of coverplate (1) and bars (2).

Dimension H changes with the rating; it is specified in the technical informations.

SUPER COMPACT (SCP)

connection interfaces with exit bars + horizontal elbow + vertical elbow



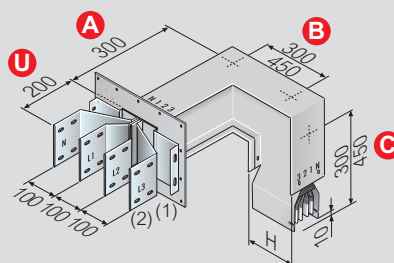
60281606P

| Cat.Nos | | In (A) | Type | |
|-----------|-----------|--------|---------|--|
| Al | Cu | | | |
| 60281600P | - | 630 | Type 1 | |
| 60281601P | 65281600P | 800 | | |
| 60281602P | 65281601P | 1000 | | |
| 60281604P | 65281603P | 1250 | | |
| 60281606P | 65281605P | 1600 | | |
| 60281607P | 65281606P | 2000 | | |
| 60391604P | 65281608P | 2500 | | |
| 60391606P | 65391605P | 3200 | | |
| 60391607P | 65391606P | 4000 | Type 2 | |
| - | 65391608P | 5000 | | |
| 60281610P | - | 630 | | |
| 60281611P | 65281610P | 800 | | |
| 60281612P | 65281611P | 1000 | | |
| 60281614P | 65281613P | 1250 | | |
| 60281616P | 65281615P | 1600 | | |
| 60281617P | 65281616P | 2000 | | |
| 60391614P | 65281618P | 2500 | Type 3 | |
| 60391616P | 65391615P | 3200 | | |
| 60391617P | 65391616P | 4000 | | |
| - | 65391518P | 5000 | | |
| 60281620P | - | 630 | | |
| 60281621P | 65281620P | 800 | | |
| 60281622P | 65281621P | 1000 | | |
| 60281624P | 65281623P | 1250 | | |
| 60281626P | 65281625P | 1600 | Type 4 | |
| 60281627P | 65281626P | 2000 | | |
| 60391624P | 65281628P | 2500 | | |
| 60391626P | 65391625P | 3200 | | |
| 60391627P | 65391626P | 4000 | | |
| - | 65391628P | 5000 | | |
| 60281630P | - | 630 | | |
| 60281631P | 65281630P | 800 | | |
| 60281632P | 65281631P | 1000 | Type 5 | |
| 60281634P | 65281633P | 1250 | | |
| 60281636P | 65281635P | 1600 | | |
| 60281637P | 65281636P | 2000 | | |
| 60391634P | 65281638P | 2500 | | |
| 60391636P | 65391635P | 3200 | | |
| 60391637P | 65391636P | 4000 | | |
| - | 65391638P | 5000 | | |
| 60281640P | - | 630 | Type 6 | |
| 60281641P | 65281640P | 800 | | |
| 60281642P | 65281641P | 1000 | | |
| 60281644P | 65281643P | 1250 | | |
| 60281646P | 65281645P | 1600 | | |
| 60281647P | 65281646P | 2000 | | |
| 60391644P | 65281648P | 2500 | | |
| 60391646P | 65391645P | 3200 | | |
| 60391647P | 65391646P | 4000 | Type 7 | |
| - | 65391648P | 5000 | | |
| 60281650P | - | 630 | | |
| 60281651P | 65281650P | 800 | | |
| 60281652P | 65281651P | 1000 | | |
| 60281654P | 65281653P | 1250 | | |
| 60281656P | 65281655P | 1600 | | |
| 60281657P | 65281656P | 2000 | | |
| 60391654P | 65281658P | 2500 | Type 8 | |
| 60391656P | 65391655P | 3200 | | |
| 60391657P | 65391656P | 4000 | | |
| - | 65391658P | 5000 | | |
| 60281660P | - | 630 | | |
| 60281661P | 65281660P | 800 | | |
| 60281662P | 65281661P | 1000 | | |
| 60281664P | 65281663P | 1250 | | |
| 60281666P | 65281665P | 1600 | Type 9 | |
| 60281667P | 65281666P | 2000 | | |
| 60391664P | 65281668P | 2500 | | |
| 60391666P | 65391665P | 3200 | | |
| 60391667P | 65391666P | 4000 | | |
| - | 65391668P | 5000 | | |
| 60281670P | - | 630 | | |
| 60281671P | 65281670P | 800 | | |
| 60281672P | 65281671P | 1000 | Type 10 | |
| 60281674P | 65281673P | 1250 | | |
| 60281676P | 65281675P | 1600 | | |
| 60281677P | 65281676P | 2000 | | |
| 60391674P | 65281678P | 2500 | | |
| 60391676P | 65391675P | 3200 | | |
| 60391677P | 65391676P | 4000 | | |
| - | 65391678P | 5000 | | |

Dimensional data

Connection interfaces with exit bars + horizontal elbow + vertical elbow

This element is the union of a connection interface with exit bars and a horizontal and vertical elbow.



The dimensions are referred to the standard elements.
Single bar (U+A+B+C):
200+300+300+300 mm
Double bar (U+A+B+C):
200+300+450+450 mm

No standard elements "Special" (with measurements that are different from those show in the figure) are referred to the Min and Max dimensions specified in the table.

* For all the non standard connection interface with exit bars + horizontal elbow + vertical elbow (special), it is possible to have only one of the three sides in size exceeding 600 mm. For example, when ordering a connection interface with exit bars + horizontal elbow + vertical elbow with size C=650 mm, the A and B size will have to be ≤ 600 mm

| MIN AND MAX DIMENSIONS OF SINGLE AND DOUBLE BAR | |
|---|-----------|
| Single bar min/MAX | |
| U | 150/400 |
| A | 115/599 |
| B | 195/599 |
| C | 300/1299 |
| Double bar min/MAX | |
| U | 150/400 |
| A | 115/599* |
| B | 325/749* |
| C | 430/1449* |

See on Pag.(104) the drawings with all drilling details for dimensions of coverplate (1) and bars (2).
Dimension H changes with the rating; it is specified in the technical informations.



Single bar:
630A-2000A (Al)
800A-2500A (Cu)

Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

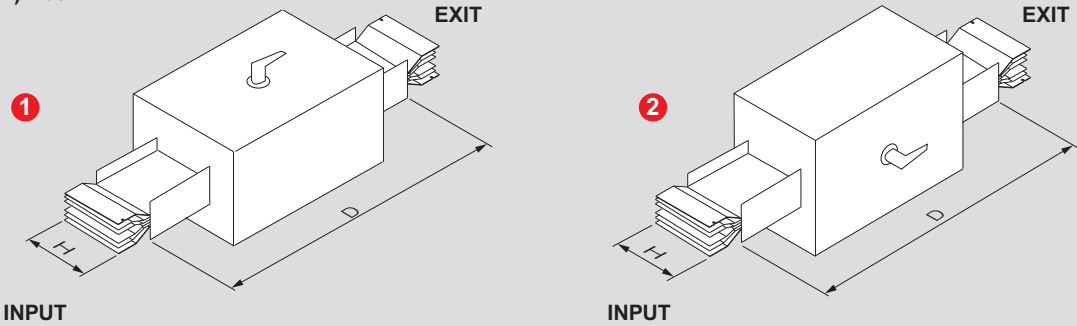
SUPER COMPACT (SCP)

complementary run components

Section Isolator and Rate Reducer with Isolator Switch

The type of route:

- 1) Edgewise
- 2) Flat

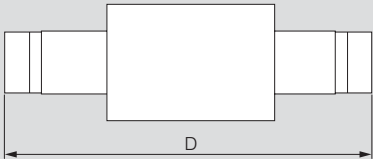


Dimension H changes with the rating; it is specified in the technical informations.

Section Isolator

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

INPUT
From 630 A to 5000 A
(Al and Cu)

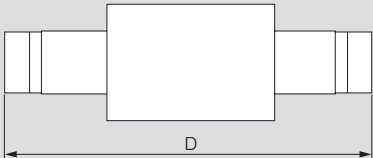


EXIT
From 630 A to 1250 A
From 1600 A to 5000 A
(Al and Cu)

| EXIT | D |
|-----------------------|------|
| From 630 A to 1250 A | 1500 |
| From 1600 A to 5000 A | 2000 |

Rate Reducer with Isolator Switch

INPUT
From 800 A to 5000 A
(Al and Cu)



EXIT
From 630 A to 1250 A
From 1600 A to 2500 A
(Al and Cu)

| EXIT | D |
|-----------------------|------|
| From 630 A to 1250 A | 1500 |
| From 1600 A to 2500 A | 2000 |

Fuses not included. See general Legrand catalogue

SUPER COMPACT (SCP)

tap-off boxes – Plug-in type

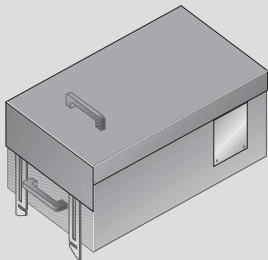
Plug-in boxes can be fitted on any element with tap-off outlets of the SCP busbar trunking system, irrespective of rating and conductor material.
As normally expected, the PE protection conductor (or PEN if required), is the first to enter in contact with the distribution element during connection, and the one to disconnect the last during disconnection.

Thanks to this feature, the boxes can be fitted and removed without disconnecting the power from the busbar.

The cover can only be opened when the box is correctly installed and with the protection switch in the off position, thus ensuring the absence of the load.

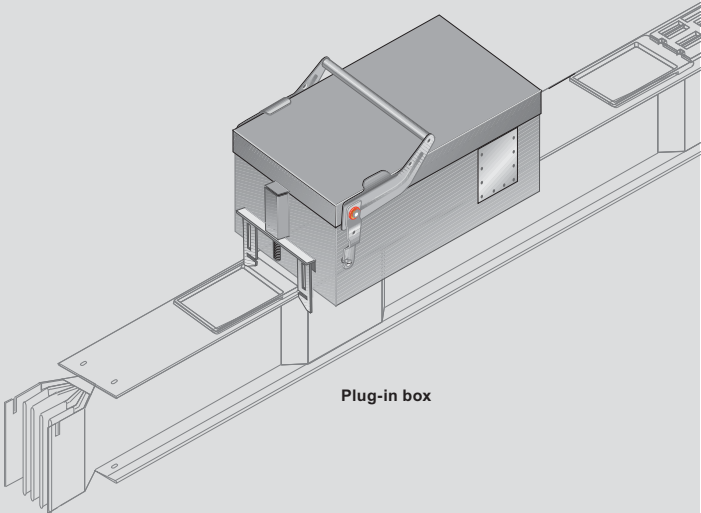
Moreover, an IP20 protection degree is guaranteed on all parts under voltage during all assembly and disassembly operations.

These boxes can be accessorised with thermal magnetic circuit breakers, fuse carriers and switch disconnectors (AC23).

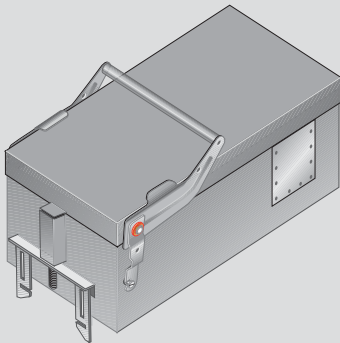


Type 1 (from 63 A to 160 A)

| TYPE 1 | Versions |
|------------|---------------------------------|
| Box Rating | |
| 63 A | Empty |
| 125 A | With fuse carriers |
| 160 A | With switch disconnector (AC23) |

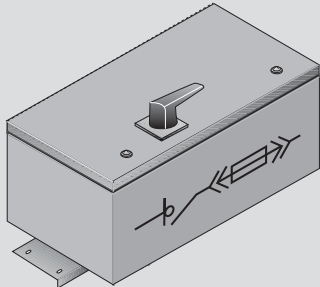


Plug-in box



Type 2 (from 250 A to 630 A)

| TYPE 2 | Versions |
|------------|---------------------------------|
| Box Rating | |
| 250 A | Empty |
| 400 A | With fuse carriers |
| 630 A | With switch disconnector (AC23) |

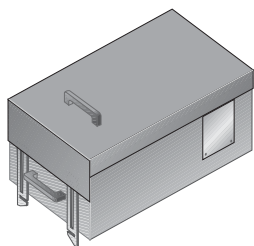


Type 3 (from 125 A to 400 A)

| TYPE 3 | Versions |
|------------|--|
| Box Rating | |
| 125 A | With (AC 23A) switch disconnector and fuse carrier |
| 250 A | |
| 400 A | |

SUPER COMPACT (SCP)

tap-off box Type 1 - 63A to 160A : plug-in type



Type 1 (from 63A to 160A)

| Cat.Nos | Empty Tap-off boxes | |
|-----------|-----------------------|--|
| | In (A) tap-off box | Description |
| 65285011P | 63 | Tap-off boxes can be pre-equipped with DPX moulded case circuit breakers (MCCB*) upon request. Can be installed and removed when the busbar is energized. To be applied on elements with any rating, with tap-off outlets. |
| 65285012P | 125 | |
| 65285013P | 160 | |

| | Tap-off boxes with fuse carriers | |
|-----------|----------------------------------|--|
| | In (A) tap-off box | Fuse carrier Description |
| 65285031P | 63 | CH 22 Polyester coated, galvanized steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current. Fuses not included. |
| 65285032P | 125 | NH 00 |
| 65285033P | 160 | NH 00 |

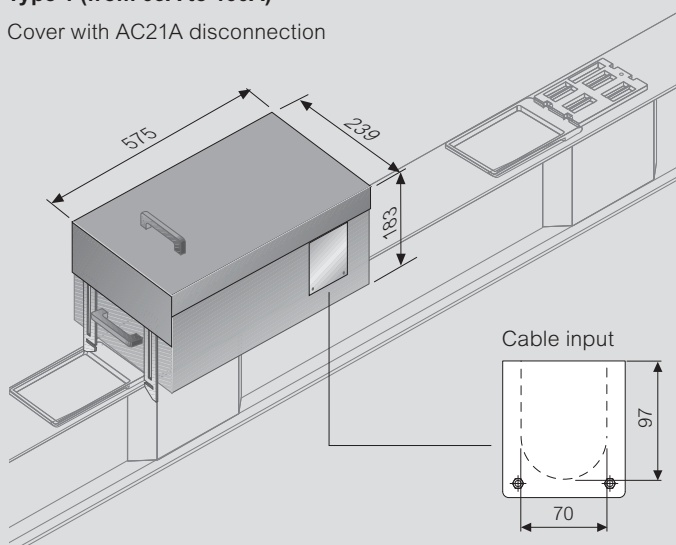
| | Tap-off boxes with switch disconnecter (AC23) | |
|-----------|---|--|
| | In (A) tap-off box | Fuse carrier Description |
| 65285051P | 63 | NH 00 Polyester coated, galvanized steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current. These tap-off boxes are equipped with a switch 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. Fuses not included. See Legrand catalogue. Can be installed and removed when the busbar is energized. To be applied on elements with any rating, with tap-off outlets. |
| 65285052P | 125 | NH 00 |
| 65285053P | 160 | NH 0 |

* MCCB (Moulded Case Circuit Breaker)

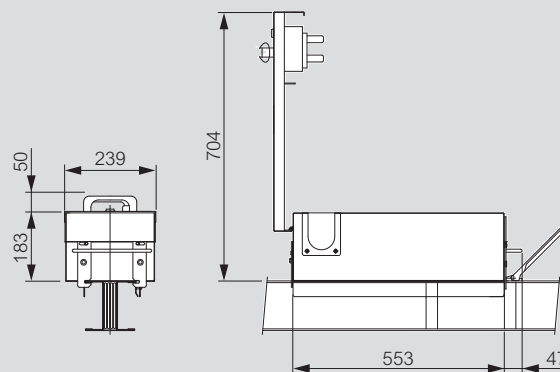
Dimensional data

Type 1 (from 63A to 160A)

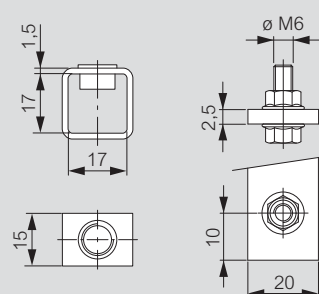
Cover with AC21A disconnection



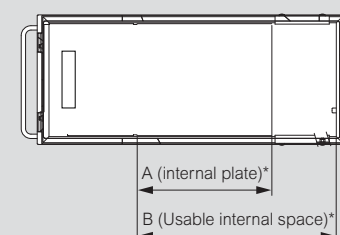
Box dimensions (mm)



Terminal dimensions (mm)



The terminals are refers to empty version (from 63A to 160A)



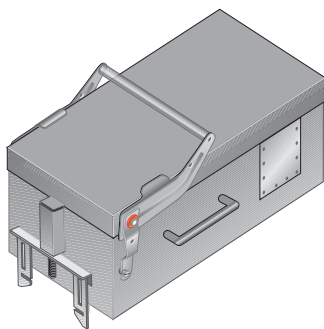
| INTERNAL DIMENSIONS | | | |
|---------------------|--------|--------|--------|
| Type | In (A) | A (mm) | B (mm) |
| 1 | 63 | 250 | 365 |
| | 125 | | |
| | 160 | | |

(*) Refers to empty version

| | | |
|--|------------------------------------|--------------------------------------|
| | Single bar: | Double bar: |
| | 630A-2000A (Al) 800A-2500A (Cu) | 2500A-4000A (Al) 3200A-5000A (Cu) |

SUPER COMPACT (SCP)

tap-off box Type 2 - 250A to 630A: plug-in type



Type 2 (from 250A to 630A)

| Cat.Nos | Empty Tap-off boxes | | |
|-----------|-----------------------|--|--|
| | In (A) tap-off box | Description | |
| 65285014P | 250 | Tap-off boxes can be pre-equipped with DPX moulded case circuit breakers (MCCB*) upon request. Can be installed and removed when the busbar is energized. To be applied on elements with any rating, with tap-off outlets. | |
| 65285016P | 630 | | |

| Tap-off boxes with fuse carriers | | | |
|----------------------------------|-----------------------|--------------|--|
| | In (A) tap-off box | Fuse carrier | Description |
| 65285034P | 250 | NH 2 | Polyester coated, galvanized steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current. Fuses not included. |
| 65285036P | 630 | NH 3 | |

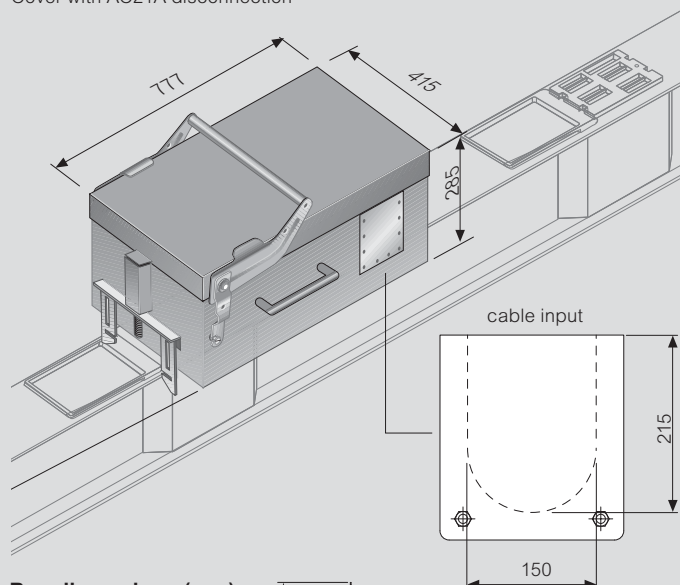
| Tap-off boxes with switch disconnecter (AC23) | | | |
|---|-----------------------|--------------|--|
| | In (A) tap-off box | Fuse carrier | Description |
| 65285054P | 250 | NH 1 | Polyester coated, galvanized steel structure. Metal boxes are suitable for heavy loads and are used to shield electromagnetic fields caused by flows of current. These tap-off boxes are equipped with a switch 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. Fuses not included. See Legrand catalogue. Can be installed and removed when the busbar is energized. To be applied on elements with any rating, with tap-off outlets. |
| 65285055P | 400 | NH 2 | |
| 65285076P | 630 | NH 3 | |

* MCCB (Moulded Case Circuit Breaker)

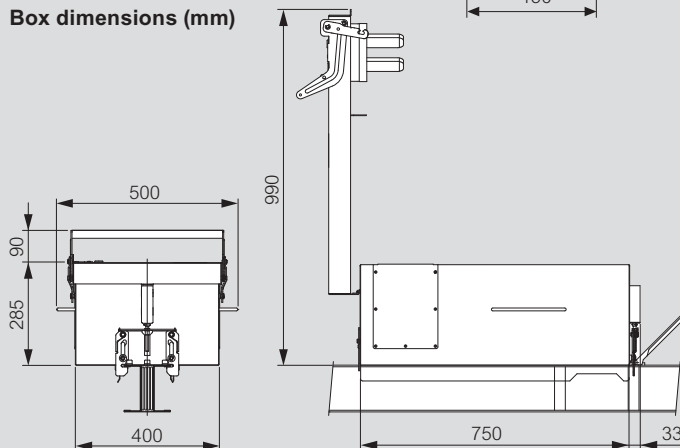
Dimensional data

Type 2 (from 250 A to 630 A)

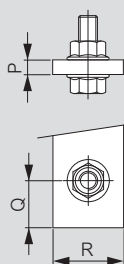
Cover with AC21A disconnection



Box dimensions (mm)

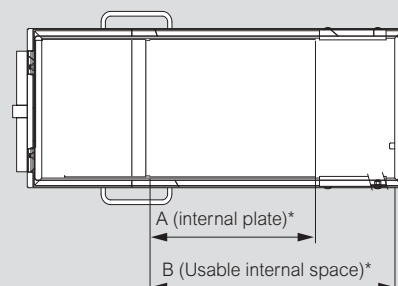


Terminal dimensions (mm)



| Type | In (A) | Phase/Neutral | | | | Earth | | | |
|------|--------|---------------|------|----|--------|-------|----|----|--------|
| | | P | Q | R | Thread | P | Q | R | Thread |
| 2 | 250 | 2,5 | 17,5 | 35 | M8 | 10,6 | 20 | 30 | M10 |
| | 630 | 6 | 17,5 | 35 | M8 | 10,6 | 20 | 30 | M10 |

The terminals are refers to empty version (from 250A to 630A)



| INTERNAL DIMENSIONS | | | |
|---------------------|--------|--------|--------|
| Type | In (A) | A (mm) | B (mm) |
| 2 | 250 | 375 | 552 |
| | 630 | | |

(*) Refers to empty version



Single bar:

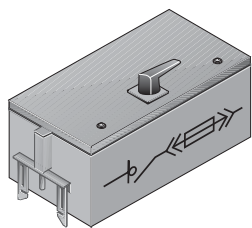
630A-2000A (Al)
800A-2500A (Cu)

Double bar:

2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

tap-off box with (AC 23A) switch disconnecter and fuse carrier, Type 3 - 125A to 400A: plug-in type



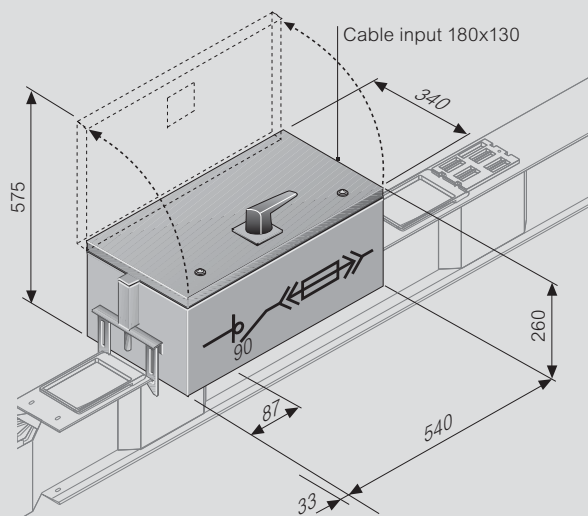
Type 3 - from 125 A to 400 A

Rated insulating AC voltage U_i [V]: **1000**
 Rated impulse withstand voltage U_{imp} [kV]: **12**
 Type of rated duty: **AC23A**
 Rated conditional short circuit current [kA]: **100**
 Reference standard: **CEI EN 60947-3**

| Cat.Nos | Tap-off box with ac23a switch disconnecter and fuse carrier, 125A to 400A: plug-in type | |
|-----------|---|--------------|
| | In (A) tap-off box | Fuse carrier |
| 65282001P | 125 | NH 00 |
| 65282002P | 250 | NH 1 |
| 65282003P | 400 | NH 2 |

Dimensional data

Type 3 - from 125 A to 400 A

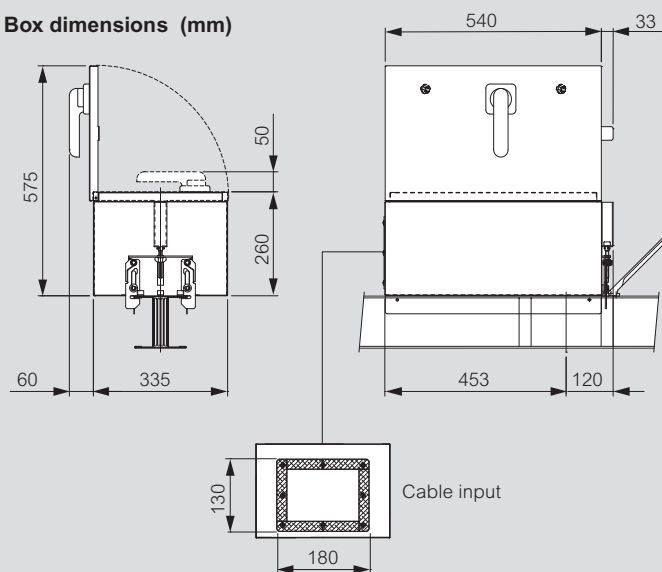


Can be installed and removed when the busbar is energized.
 To be applied on elements with any rating, with tap-off outlets.

For operating voltages (U_e) different from 400V,
 please contact Legrand.

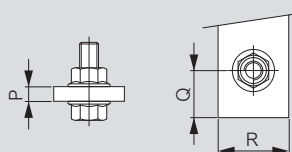
Fuses not included. See general Legrand catalogue.

Box dimensions (mm)



Terminal dimensions (mm)

| Type | In (A) | Phase/Neutral | | | | Earth | | | |
|------|--------|---------------|----|----|--------|-------|----|----|--------|
| | | P | Q | R | Thread | P | Q | R | Thread |
| 3 | 125 | 4 | 8 | 16 | M8 | 2,5 | 20 | 20 | M8 |
| | 250 | 4 | 12 | 25 | M10 | 2,5 | 20 | 20 | M8 |
| | 400 | 6 | 12 | 25 | M10 | 2,5 | 20 | 20 | M8 |

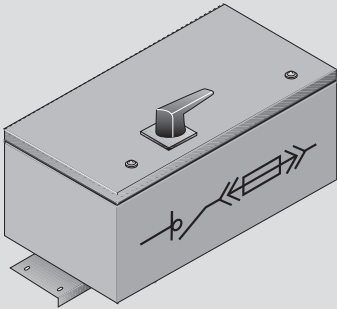


SUPER COMPACT (SCP)

tap-off boxes on the junction – Bolt-on type

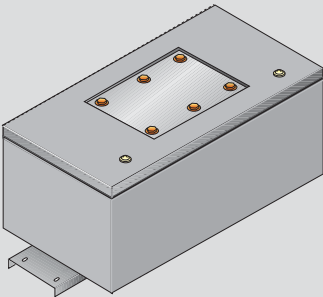
Tap-off boxes on the junction – bolt-on type are high rated current boxes, securely connected to the busbar using a special “Monobloc” system similar to that used for straight elements, but which enables the distribution of power from the busbar.

The boxes can only be installed and removed with when no voltage is present in the busbar (disconnected). These boxes are available in the version with switch disconnecter, fuse carrier, and boxed automatic circuit breakers.



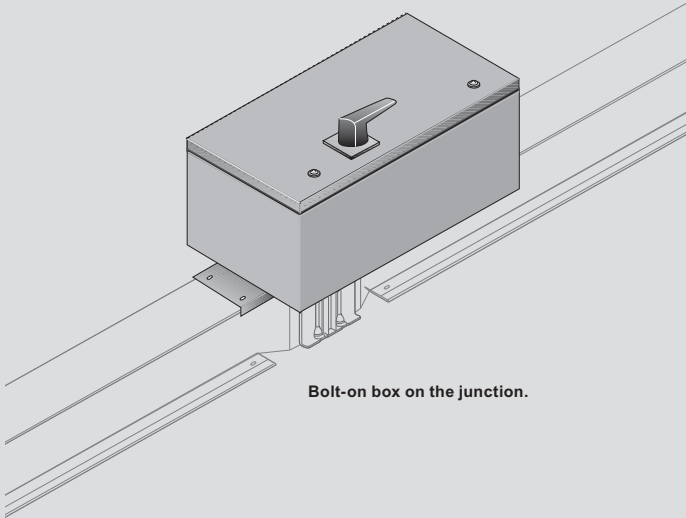
Type 4 (from 125 A to 1250 A)

| TYPE 4 | Versions: |
|------------|--|
| Box Rating | With (AC 23A) switch disconnecter and fuse carrier |
| 125A | |
| 250A | |
| 400A | |
| 630A | |
| 800A | |
| 1000A | |
| 1250A | |



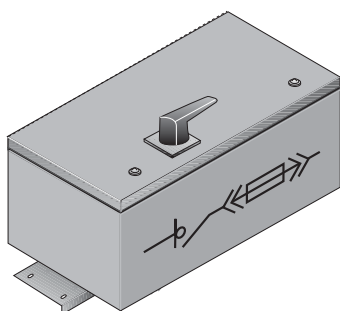
Type 5 (from 125 A to 1250 A)

| TYPE 5 | Versions: |
|------------|-----------|
| Box Rating | Empty |
| 125A | |
| 250A | |
| 400A | |
| 630A | |
| 800A | |
| 1000A | |
| 1250A | |



SUPER COMPACT (SCP)

tap-off box on the junction - Type 4 - 125A to 1250A: bolt-on type



Type 4 - from 125 A to 400 A

Rated insulating AC voltage U_i [V]: **1000**
 Rated impulse withstand voltage U_{imp} [kV]: **12**
 Type of rated duty: **AC23A**
 Rated conditional short circuit current [kA]: **100**
 Reference standard: **CEI EN 60947-3**

| Cat.Nos | | With AC23 switch disconnecter and fuse carrier | | | |
|-----------|-----------|--|--------------------|--------------|------|
| Al | Cu | In (A) bars | In (A) tap-off box | Fuse carrier | Type |
| 65281811P | - | 630 | | | |
| 65281811P | 65281811P | 800 | | | |
| 65281811P | 65281811P | 1000 | | | |
| 65281811P | 65281811P | 1250 | | | |
| 65281812P | 65281812P | 1600 | 125 | NH 00 | 4A |
| 65281814P | 65281812P | 2000 | | | |
| 65391812P | 65281814P | 2500 | | | |
| 65391813P | 65391812P | 3200 | | | |
| 65391814P | 65391813P | 4000 | | | |
| - | 65391814P | 5000 | | | |
| 65281821P | - | 630 | | | |
| 65281821P | 65281821P | 800 | | | |
| 65281821P | 65281821P | 1000 | | | |
| 65281821P | 65281821P | 1250 | | | |
| 65281822P | 65281822P | 1600 | 250 | NH 1 | 4A |
| 65281824P | 65281822P | 2000 | | | |
| 65391822P | 65281824P | 2500 | | | |
| 65391823P | 65391822P | 3200 | | | |
| 65391824P | 65391823P | 4000 | | | |
| - | 65391824P | 5000 | | | |
| 65281831P | - | 630 | | | |
| 65281831P | 65281831P | 800 | | | |
| 65281831P | 65281831P | 1000 | | | |
| 65281831P | 65281831P | 1250 | | | |
| 65281832P | 65281832P | 1600 | 400 | NH 2 | 4A |
| 65281834P | 65281832P | 2000 | | | |
| 65391832P | 65281834P | 2500 | | | |
| 65391833P | 65391832P | 3200 | | | |
| 65391834P | 65391833P | 4000 | | | |
| - | 65391834P | 5000 | | | |
| 65286041P | - | 630 | | | |
| 65286041P | 65286041P | 800 | | | |
| 65286041P | 65286041P | 1000 | | | |
| 65286041P | 65286041P | 1250 | | | |
| 65286042P | 65286042P | 1600 | 630 | NH 3 | 4B |
| 65286044P | 65286042P | 2000 | | | |
| 65396042P | 65286044P | 2500 | | | |
| 65396043P | 65396042P | 3200 | | | |
| 65396044P | 65396043P | 4000 | | | |
| - | 65396044P | 5000 | | | |

| Cat.Nos | | With AC23 switch disconnecter and fuse carrier | | | |
|-----------|-----------|--|--------------------|--------------|------|
| Al | Cu | In (A) bars | In (A) tap-off box | Fuse carrier | Type |
| 65281851P | - | 630 | | | |
| 65281851P | 65281851P | 800 | | | |
| 65281851P | 65281851P | 1000 | | | |
| 65281851P | 65281851P | 1250 | | | |
| 65281852P | 65281852P | 1600 | 800 | NH 4 | 4C |
| 65281854P | 65281852P | 2000 | | | |
| 65391852P | 65281854P | 2500 | | | |
| 65391853P | 65391852P | 3200 | | | |
| 65391854P | 65391853P | 4000 | | | |
| - | 65391854P | 5000 | | | |
| 65281861P | - | 630 | | | |
| 65281861P | 65281861P | 800 | | | |
| 65281861P | 65281861P | 1000 | | | |
| 65281861P | 65281861P | 1250 | | | |
| 65281862P | 65281862P | 1600 | 1000 | NH 4 | 4C |
| 65281864P | 65281862P | 2000 | | | |
| 65391862P | 65281864P | 2500 | | | |
| 65391863P | 65391862P | 3200 | | | |
| 65391864P | 65391863P | 4000 | | | |
| - | 65391864P | 5000 | | | |
| 65281871P | - | 630 | | | |
| 65281871P | 65281871P | 800 | | | |
| 65281871P | 65281871P | 1000 | | | |
| 65281871P | 65281871P | 1250 | | | |
| 65281872P | 65281872P | 1600 | 1250 | NH 4 | 4C |
| 65281874P | 65281872P | 2000 | | | |
| 65391872P | 65281874P | 2500 | | | |
| 65391873P | 65391872P | 3200 | | | |
| 65391874P | 65391873P | 4000 | | | |
| - | 65391874P | 5000 | | | |



Single bar:
 630A-2000A (Al)
 800A-2500A (Cu)

Double bar:
 2500A-4000A (Al)
 3200A-5000A (Cu)

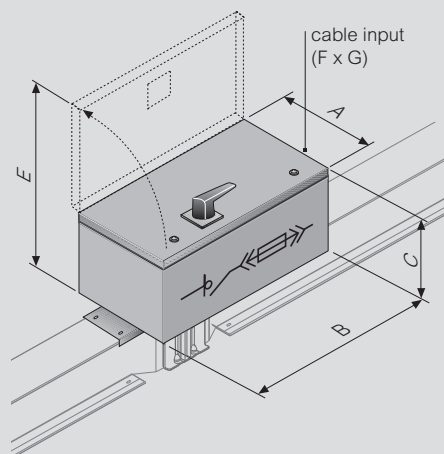
SUPER COMPACT (SCP)

tap-off box on the junction - Type 4 - 125A to 1250A: bolt-on type

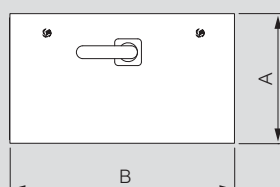
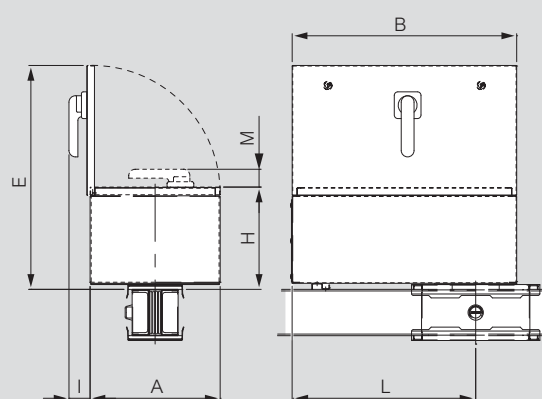
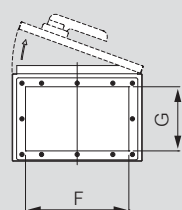
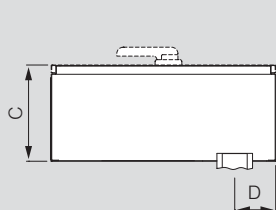
Dimensional data

Type 4 - from 125 A to 1250 A

Box dimensions (mm)

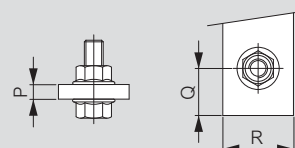


| Type | In (A) | A | B | C | D | E | F | G | H | I | L | M |
|------|--------|-----|------|-----|-----|-----|-----|-----|-----|----|-----|----|
| 4A | 125 | 365 | 630 | 270 | 115 | 630 | 290 | 180 | 287 | 59 | 520 | 50 |
| | 250 | | | | | | | | | | | |
| | 400 | | | | | | | | | | | |
| 4B | 630 | 400 | 750 | 280 | 115 | 675 | 290 | 180 | 297 | 74 | 640 | 64 |
| | 800 | | | | | | | | | | | |
| | 1000 | | | | | | | | | | | |
| 4C | 1250 | 450 | 1050 | 300 | 115 | 745 | 380 | 210 | 317 | 74 | 940 | 64 |
| | | | | | | | | | | | | |



Terminal dimensions (mm)

| Type | In (A) | Phase/Neutral | | | | | Earth | | | | | | |
|------|--------|---------------|----|----|--------|---------|-------|----|-------|-----|----|----|----|
| | | P | Q | R | Thread | | | | | | | | |
| 4A | 125 | 4 | 8 | 16 | M8 | | | | | | | | |
| | 250 | 4 | 12 | 25 | M10 | | | | | | | | |
| | 400 | 6 | 12 | 25 | M10 | | | | | | | | |
| 4B | 630 | 10 | 19 | 40 | M10 | | | | | | | | |
| | | Phase | | | | Neutral | | | Earth | | | | |
| 4C | 800 | 4 | 25 | 45 | M16 | 12,4 | 20 | 30 | M10 | 6,2 | 20 | 30 | M8 |
| | 1000 | 4 | 25 | 45 | M16 | 12,4 | 20 | 30 | M10 | 6,2 | 20 | 30 | M8 |
| | 1250 | 4 | 25 | 45 | M16 | 10 | 25 | 45 | M12 | 6,2 | 20 | 30 | M8 |



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

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

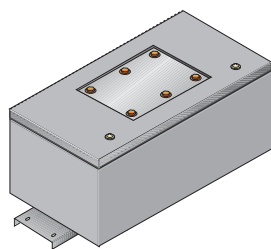
WARNING

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

Fuses not included. See general Legrand catalogue.

SUPER COMPACT (SCP)

tap-off box on the junction - Type 5 - 125A to 1250A: bolt-on type



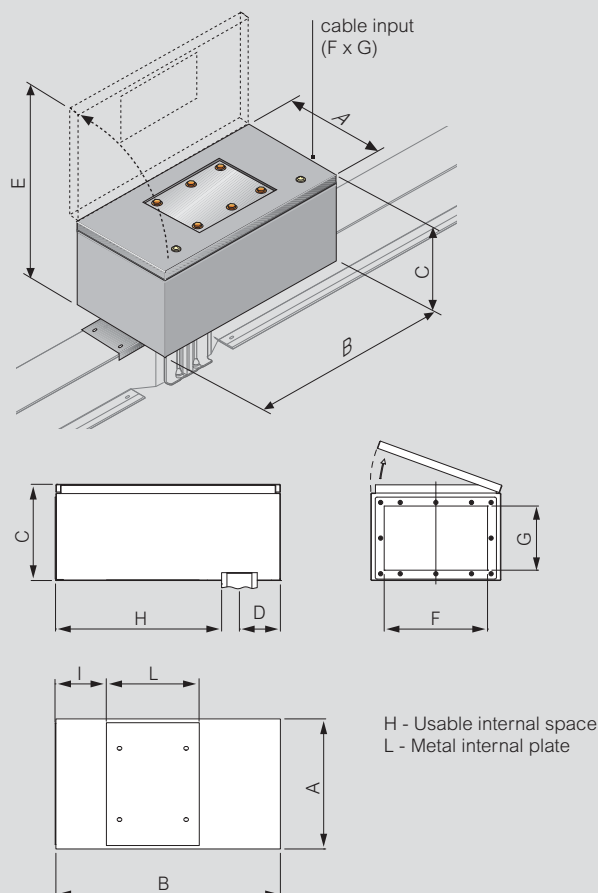
Type 5 - from 125 A to 1250 A

Empty tap-off box 125A to 1250A: bolt-on type

| Type | In (A) tap-off box |
|-----------|-----------------------|
| 5A | 125 A |
| | 250 A |
| | 400 A |
| 5B | 630 A |
| 5C | 800 A |
| | 1000 A |
| | 1250 A |

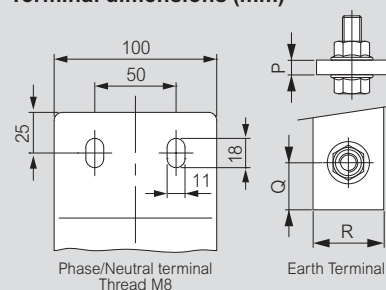
Dimensional data

Type 5 - from 125 A to 1250 A



| Type | In (A) | A | B | C | D | E | F | G | H | I | L |
|-----------|--------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| 5A | 125 | | | | | | | | | | |
| | 250 | 365 | 630 | 270 | 115 | 630 | 290 | 180 | 465 | 142 | 260 |
| | 400 | | | | | | | | | | |
| 5B | 630 | 400 | 750 | 280 | 115 | 675 | 290 | 180 | 585 | 227 | 295 |
| 5C | 800 | | | | | | | | | | |
| | 1000 | 450 | 1050 | 300 | 115 | 745 | 380 | 210 | 885 | 254 | 545 |
| | 1250 | | | | | | | | | | |

Terminal dimensions (mm)



| Type | In (A) | Earth Terminal | | | |
|-----------|--------|----------------|----|----|--------|
| | | P | Q | R | Thread |
| 5A | 125 | 3,3 | 20 | 30 | M8 |
| | 250 | 3,3 | 20 | 30 | M8 |
| | 400 | 3,3 | 20 | 30 | M8 |
| 5B | 630 | 5,3 | 20 | 30 | M8 |
| 5C | 800 | 6,2 | 20 | 30 | M8 |
| | 1000 | 6,2 | 20 | 30 | M8 |
| | 1250 | 6,2 | 20 | 30 | M8 |

WARNING

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

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

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

Please contact Legrand for more details on the dimensions

| | | |
|--|------------------------------------|--------------------------------------|
| | Single bar: | Double bar: |
| | 630A-2000A (Al) 800A-2500A (Cu) | 2500A-4000A (Al) 3200A-5000A (Cu) |

TAP-OFF BOX INSTALLATION EXAMPLE DIAGRAM

example diagram

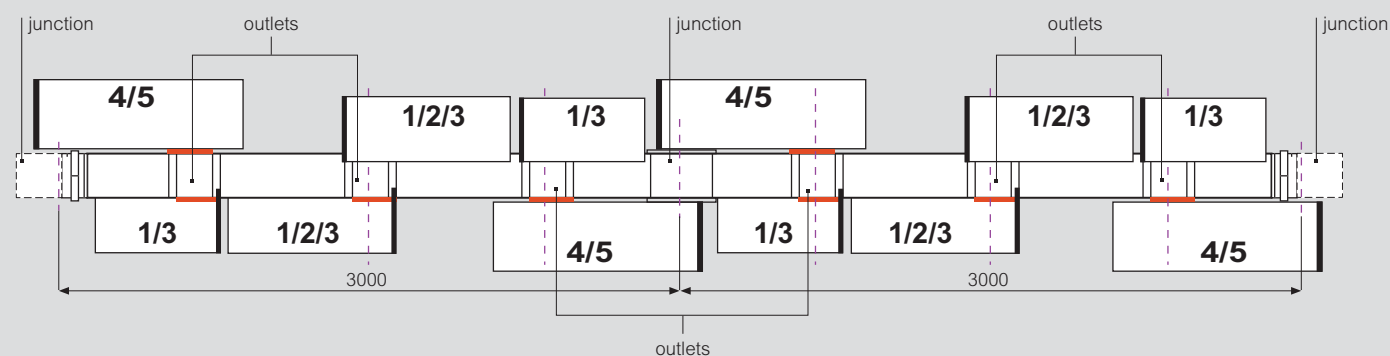
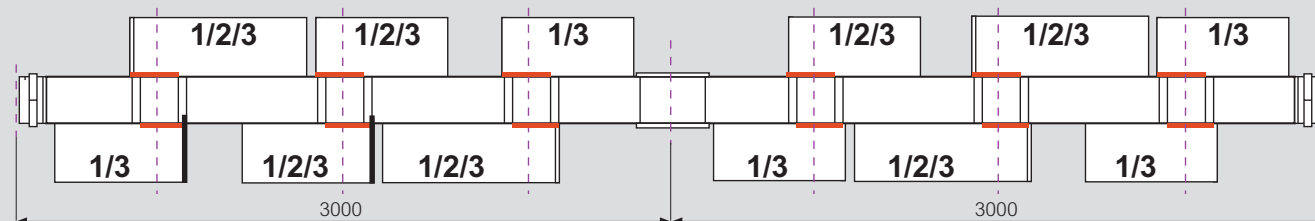
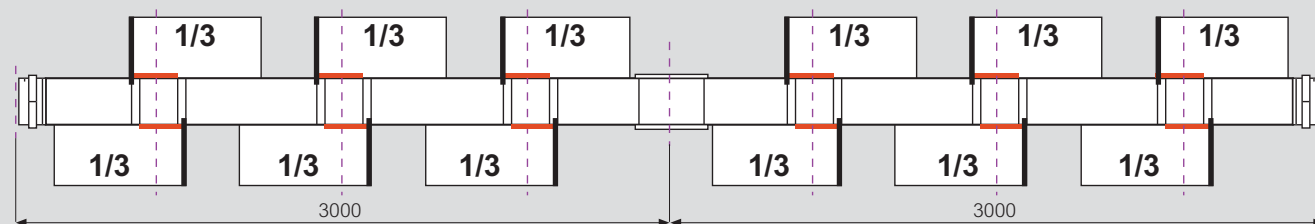
Not all boxes can be installed in any position.

The following figures show where the various Plug-in/Bolt-on boxes may be installed on elements with standard setup.

The numbers indicate the type of box:

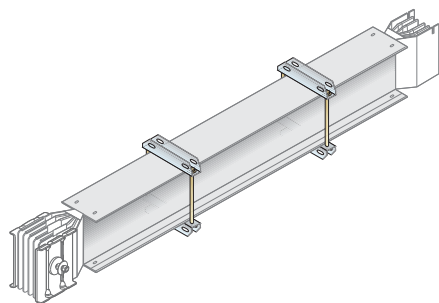
- 1 Plug-in type : tap-off box from 63A to 160A;
- 2 Plug-in type : tap-off box from 250A to 630A;
- 3 Plug-in type : tap-off box from 125A to 400A with (AC 23A) switch disconnecter and fuse carrier;
- 4 Bolt-on type : tap-off box on the junction from 125A to 1250A with (AC 23A) switch disconnecter and fuse carrier;
- 5 Bolt-on type : tap-off box on the junction from 125A to 1250A empty version;

Different combination of boxes in straight elements of SCP:



SUPER COMPACT (SCP)

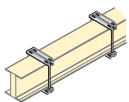
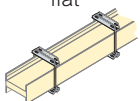
brackets



65202001

The brackets enable sturdy installation of the busbar to the system support structures.
The recommended installation distance between brackets is 1.5 metres. Legrand offers suitable bracket solutions certified for any type of installation, even in the most difficult environments:

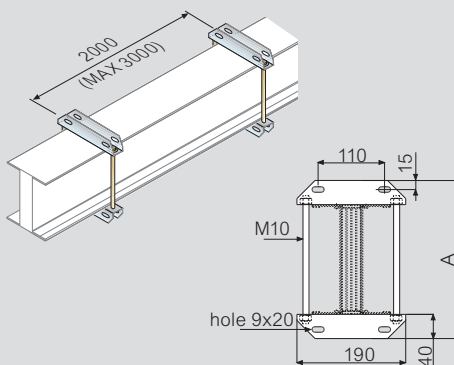
- installations subjected to strong vibrations;
- naval applications;
- installation in seismic environments.

| Cat.Nos | | Suspension Brackets | |
|----------|----------|---------------------|--|
| Al | Cu | In (A) | Type |
| 65202001 | - | 630 | edgewise  |
| 65202001 | 65202001 | 800÷1250 | |
| 65202002 | 65202002 | 1600 | |
| 65202004 | 65202002 | 2000 | |
| 65222002 | 65202004 | 2500 | |
| 65222003 | 65222002 | 3200 | |
| 65222004 | 65222003 | 4000 | flat  |
| - | 65222004 | 5000 | |
| 65202001 | - | 630 | |
| 65202001 | 65202001 | 800÷1250 | |
| 65202013 | 65202013 | 1600-2000 | |
| 65202112 | 65202013 | 2500 | |
| 65202113 | 65202112 | 3200 | |
| 65202114 | 65202113 | 4000 | |
| - | 65202114 | 5000 | |

Dimensional data

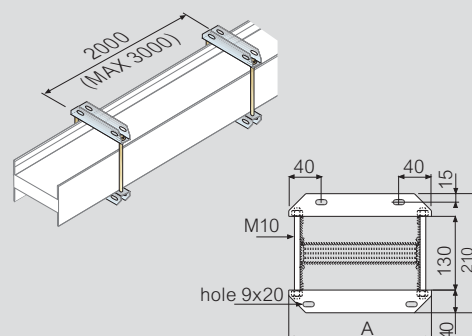
Suspension bracket

EDGEWISE INSTALLATION



| Range | A (mm) | |
|-------|--------|-----|
| | Al | Cu |
| 630 | 210 | - |
| 800 | 210 | 210 |
| 1000 | 210 | 210 |
| 1250 | 210 | 210 |
| 1600 | 250 | 250 |
| 2000 | 300 | 250 |
| 2500 | 460 | 300 |
| 3200 | 520 | 460 |
| 4000 | 560 | 520 |
| 5000 | - | 560 |

FLAT INSTALLATION



| Range | A (mm) | |
|-------|--------|-----|
| | Al | Cu |
| 630 | 190 | - |
| 800 | 190 | 190 |
| 1000 | 190 | 190 |
| 1250 | 190 | 190 |
| 1600 | 315 | 315 |
| 2000 | 315 | 315 |
| 2500 | 430 | 315 |
| 3200 | 490 | 430 |
| 4000 | 530 | 490 |
| 5000 | - | 530 |



Single bar:

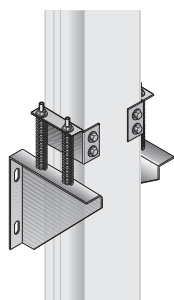
630A-2000A (Al)
800A-2500A (Cu)

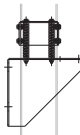



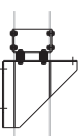

Double bar:

2500A-4000A (Al)
3200A-5000A (Cu)


SUPER COMPACT (SCP)

brackets



| Cat.Nos | | Brackets for vertical elements | |
|----------|----------|--------------------------------|--|
| Al | Cu | In (A) | Type |
| 65213711 | - | 630 | with bracket and springs |
| 65213711 | 65213711 | 800÷1250 |  A |
| 65213712 | 65213712 | 1600 | |
| 65213714 | 65213712 | 2000 | |
| 65213742 | 65213714 | 2500 | |
| 65213743 | 65213742 | 3200 | |
| 65213744 | 65213743 | 4000 |  B |
| - | 65213744 | 5000 | |
| 65213721 | - | 630 | with bracket |
| 65213721 | 65213721 | 800÷1250 |  C |
| 65213722 | 65213722 | 1600 | |
| 65213724 | 65213722 | 2000 | |
| 65213752 | 65213724 | 2500 | |
| 65213753 | 65213752 | 3200 | |
| 65213754 | 65213753 | 4000 |  D |
| - | 65213754 | 5000 | |
| 65213701 | - | 630 | with springs |
| 65213701 | 65213701 | 800÷1250 |  E |
| 65213702 | 65213702 | 1600 | |
| 65213704 | 65213702 | 2000 | |
| 65213732 | 65213704 | 2500 | |
| 65213733 | 65213732 | 3200 | |
| 65213734 | 65213733 | 4000 |  F |
| - | 65213734 | 5000 | |
| 65213761 | - | 630 | bracket only |
| 65213761 | 65213761 | 800÷1250 | G |
| 65213762 | 65213762 | 1600 | |
| 65213764 | 65213762 | 2000 | |
| 65213772 | 65213764 | 2500 | |
| 65213773 | 65213772 | 3200 | |
| 65213774 | 65213773 | 4000 | H |
| - | 65213774 | 5000 | |
| - | - | 630÷2000 | naval applications |
| 65213782 | - | 2500 | I |
| 65213783 | 65213782 | 3200 | |
| 65213784 | 65213783 | 4000 | |
| - | 65213784 | 5000 | |
| - | - | 630÷2000 | * anti-seismic bracket |
| 65213792 | - | 2500 | J |
| 65213793 | 65213792 | 3200 | |
| 65213794 | 65213793 | 4000 | |
| - | 65213794 | 5000 | |

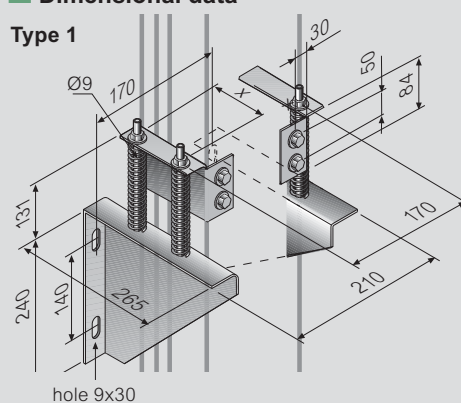
*For more technical details, please contact Legrand

 **Single bar:**
630A-2000A (Al)
800A-2500A (Cu)

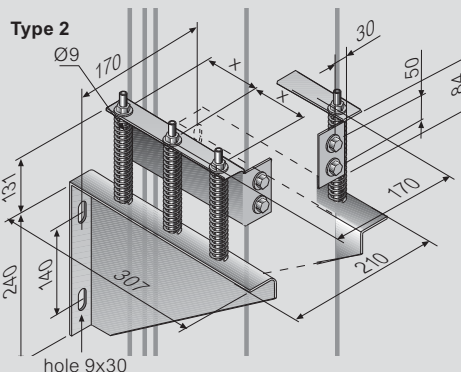
Double bar:
2500A-4000A (Al)
3200A-5000A (Cu)

Dimensional data

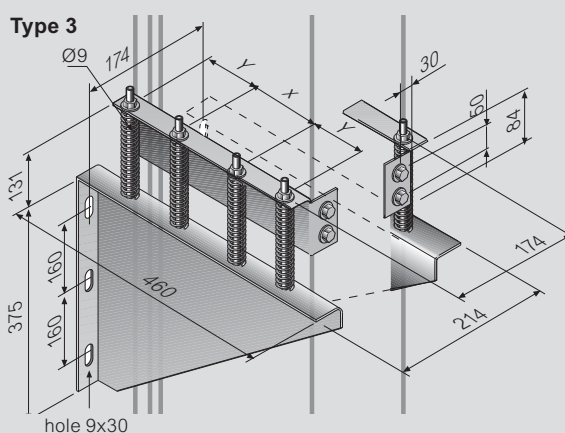
Type 1



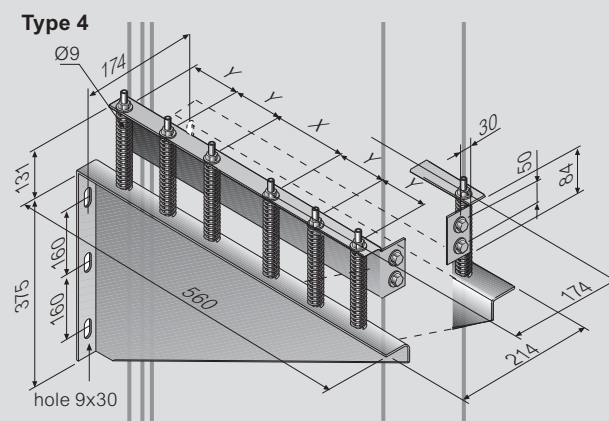
Type 2



Type 3



Type 4



X AND Y DIMENSIONS OF THE BRACKETS

| | Type 1 | Type 1 | Type 2 | Type 3 | Type 4 | Type 4 |
|--------|--------------|---------------|--------|--------|--------|--------|
| Al | 630A - 1250A | 1600A | 2000A | 2500A | 3200A | 4000A |
| Cu | 800A - 1250A | 1600A - 2000A | 2500A | 3200A | 4000A | 5000A |
| x [mm] | 90 | 120 | 90 | 110 | 80 | 80 |
| y [mm] | - | - | - | 115 | 80 | 90 |

FIXING INDICATION

brackets

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

1- HORIZONTAL INSTALLATION FIXING

Fixing recommended: 1 bracket every 1.5 metres.

2- FIXING FOR VERTICAL INSTALLATION (RISING MAINS)

In case of rising mains, in addition to the standard brackets it will also be necessary to use other screw fixed brackets to prevent sliding of the busbar. Thanks to pre-loaded springs, these 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 line 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** + one edgewise installation **standard bracket**.

• Section line of over 4 m

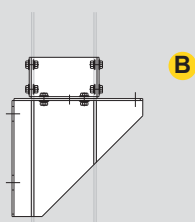
In the lowest point **Type A** vertical bracket if secured **to the wall**, or **Type C** if secured **to the floor** + one edgewise installation **standard bracket** every metre and a half of the path + one **Type A** or **C** bracket based on the following table.

| Al | | Cu | |
|--------|----|--------|----|
| In (A) | m | In (A) | m |
| 630 | 17 | | |
| 800 | 16 | 800 | 10 |
| 1000 | 16 | 1000 | 9 |
| 1250 | 15 | 1250 | 9 |
| 1600 | 12 | 1600 | 7 |
| 2000 | 10 | 2000 | 6 |
| 2500 | 14 | 2500 | 4 |
| 3200 | 12 | 3200 | 7 |
| 4000 | 10 | 4000 | 6 |
| | | 5000 | 5 |

3- FIXING FOR INSTALLATION IN SEISMIC ENVIRONMENTS IN HORIZONTAL

Fit 1 bracket every metre and a half of the busbar.

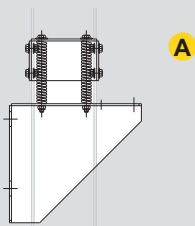
Every 2 anti-seismic brackets with bracket (Type B), use one standard bracket.



4- FIXING FOR INSTALLATION IN SEISMIC ENVIRONMENTS IN VERTICAL (SECTION LENGTHS > 2 m)

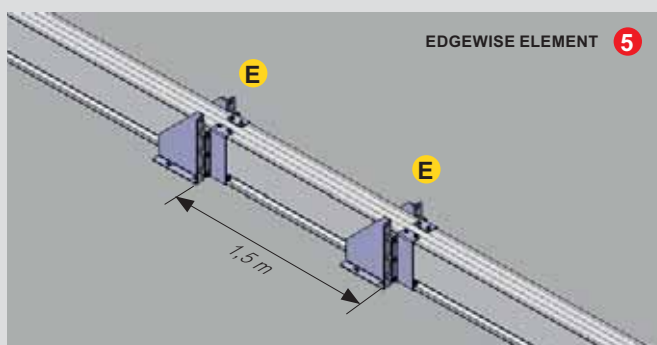
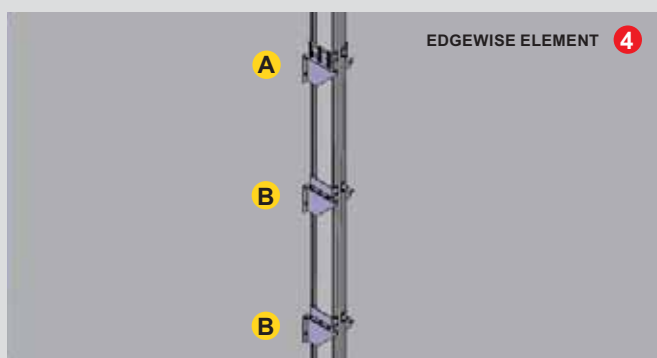
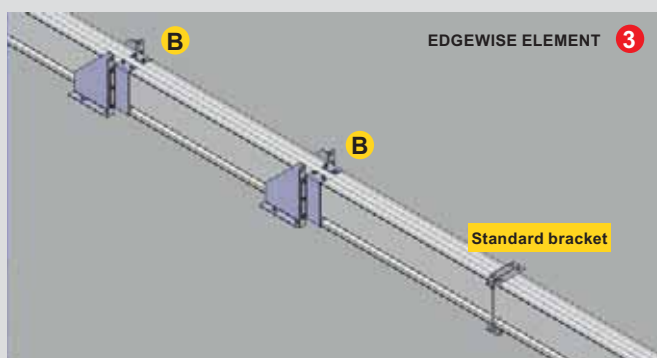
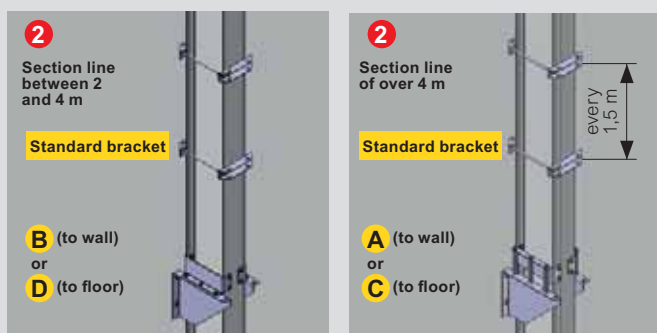
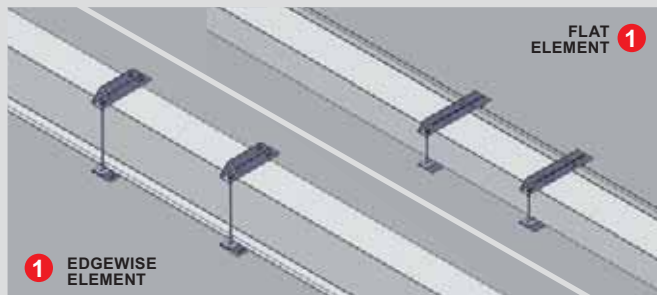
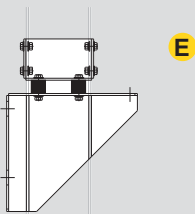
Fit 1 bracket every metre and a half of the busbar.

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



5- FIXING FOR NAVAL INSTALLATION

For naval installations always use a type E bracket every metre and a half of the busbar.

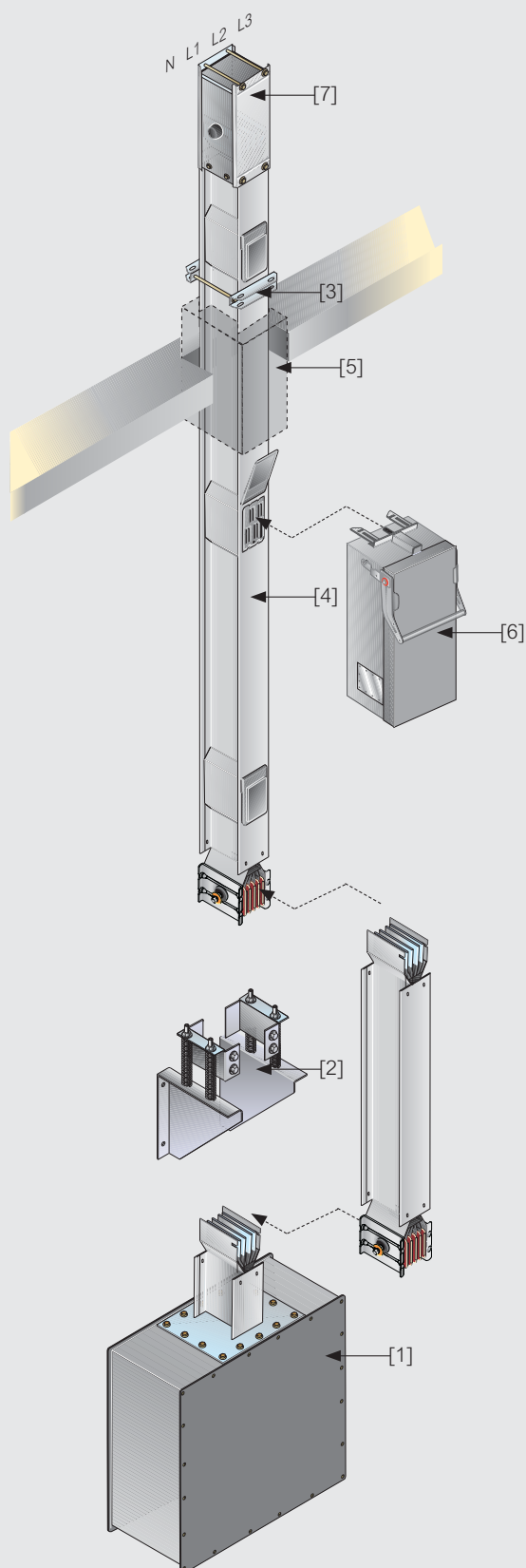


For more installation details, please refer to the installation instructions.

SUPER COMPACT (SCP)

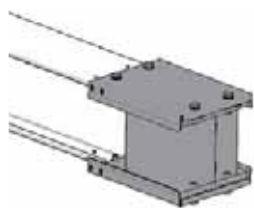
operating instructions on how to design riser mains

- 1) Use an RH end feed unit (without monobloc).
In order to position the tap-off boxes correctly as shown in the figure, the neutral conductor of the riser main must be on the left side of the element.
- 2) Use one or more suspension brackets for the vertical elements, according to the weight of the whole riser mains.
- 3) Use a standard suspension bracket to hang the busbar every 2 metres of riser mains.
- 4) Use elements with tap-off outlets where necessary, distribute the power using plug-in boxes.
- 5) Use S120 fire barrier kit for each compartment floor, where specifically requested.
- 6) The tap-off boxes can be installed in the tap-off outlets and near the connection between the elements.
- 7) At the end of the riser mains, position the IP55 end cover.

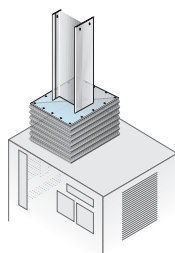


SUPER COMPACT (SCP)

accessories



65283101P



SF766040

| Cat.Nos | | |
|-----------|-----------|------|
| Al | Cu | |
| 65283101P | - | 630 |
| 65283101P | 65283101P | 800 |
| 65283101P | 65283101P | 1000 |
| 65283101P | 65283101P | 1250 |
| 65283102P | 65283102P | 1600 |
| 65283104P | 65283102P | 2000 |
| 65393102P | 65283104P | 2500 |
| 65393103P | 65393102P | 3200 |
| 65393104P | 65393103P | 4000 |
| - | 65393104P | 5000 |

End cover IP55

The end cover is the component that ensures an IP55 protection degree at the end of the line.

In (A)

| Al | Cu | |
|----------|----------|-------------|
| SF766040 | - | 630 |
| SF766040 | SF766040 | 800 - 2000 |
| SF927140 | SF766040 | 2500 |
| SF927140 | SF927140 | 3200 - 4000 |
| - | SF927140 | 5000 |

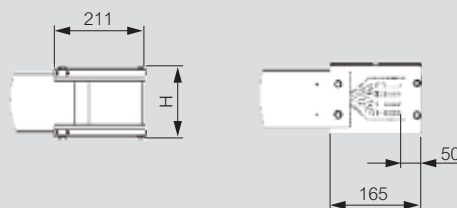
Protective bellow

Recommended for protection of the interface connection on electric boards, dry-type transformer with enclosure and oil-type transformers.

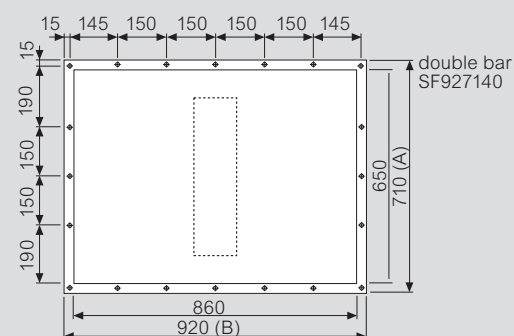
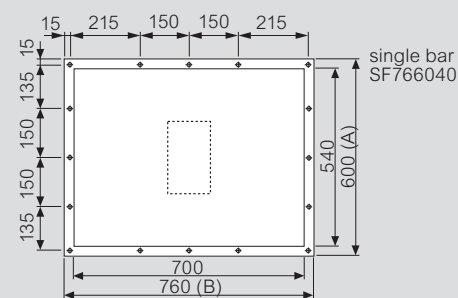
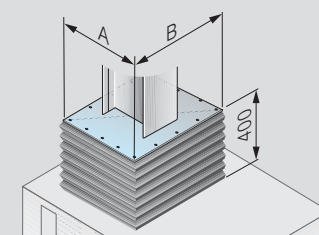
In (A)

Dimensional data

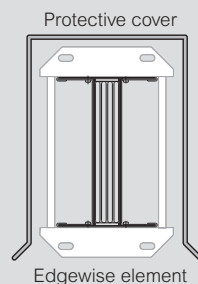
END COVER IP55



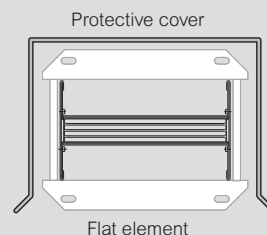
PROTECTIVE BELLOW



PROTECTIVE COVER FOR OUTDOOR APPLICATIONS



Edgewise element



Flat element

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

The protective cover for outdoor applications does not change the degree of protection IP of the busbar duct.



Single bar:

630A-2000A (Al)
800A-2500A (Cu)

Double bar:

2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

flexible braid connections



Flexible

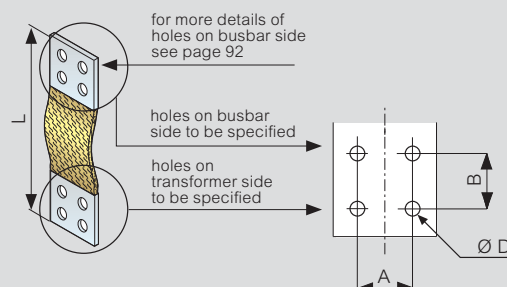
Flexible braid connections are used to connect the transformer to the connection interface of the busbar when mechanically uncoupling the two elements is required, to prevent the transmission of vibrations.

| Cat.Nos | | Flexible braid connections | | |
|----------|----------|----------------------------|--------------------|---------|
| Al | Cu | In (A) | N° braid per phase | L (mm) |
| FC100010 | - | 630 | 1 | 300-450 |
| FC100010 | FC100010 | 800 | | |
| FC200010 | FC200010 | 1000 | | |
| FC300010 | FC300010 | 1250 | | |
| FC500010 | FC500010 | 1600 | | |
| FC600010 | FC600010 | 2000 | | |
| FC400010 | FC400010 | 2500 | 2 | 300-450 |
| FC500010 | FC500010 | 3200 | | |
| FC600010 | FC600010 | 4000 | | |
| - | FC700010 | 5000 | | |
| FC100020 | - | 630 | 1 | 451-600 |
| FC100020 | FC100020 | 800 | | |
| FC200020 | FC200020 | 1000 | | |
| FC300020 | FC300020 | 1250 | | |
| FC500020 | FC500020 | 1600 | | |
| FC600020 | FC600020 | 2000 | | |
| FC400020 | FC400020 | 2500 | 2 | 451-600 |
| FC500020 | FC500020 | 3200 | | |
| FC600020 | FC600020 | 4000 | | |
| - | FC700020 | 5000 | | |
| FC100030 | - | 630 | 1 | 601-750 |
| FC100030 | FC100030 | 800 | | |
| FC200030 | FC200030 | 1000 | | |
| FC300030 | FC300030 | 1250 | | |
| FC500030 | FC500030 | 1600 | | |
| FC600030 | FC600030 | 2000 | | |
| FC400030 | FC400030 | 2500 | 2 | 601-750 |
| FC500030 | FC500030 | 3200 | | |
| FC600030 | FC600030 | 4000 | | |
| - | FC700030 | 5000 | | |
| FC100099 | - | 630 | 1 | > 750 |
| FC100099 | FC100099 | 800 | | |
| FC200099 | FC200099 | 1000 | | |
| FC300099 | FC300099 | 1250 | | |
| FC500099 | FC500099 | 1600 | | |
| FC600099 | FC600099 | 2000 | | |
| FC400099 | FC400099 | 2500 | 2 | > 750 |
| FC500099 | FC500099 | 3200 | | |
| FC600099 | FC600099 | 4000 | | |
| - | FC700099 | 5000 | | |

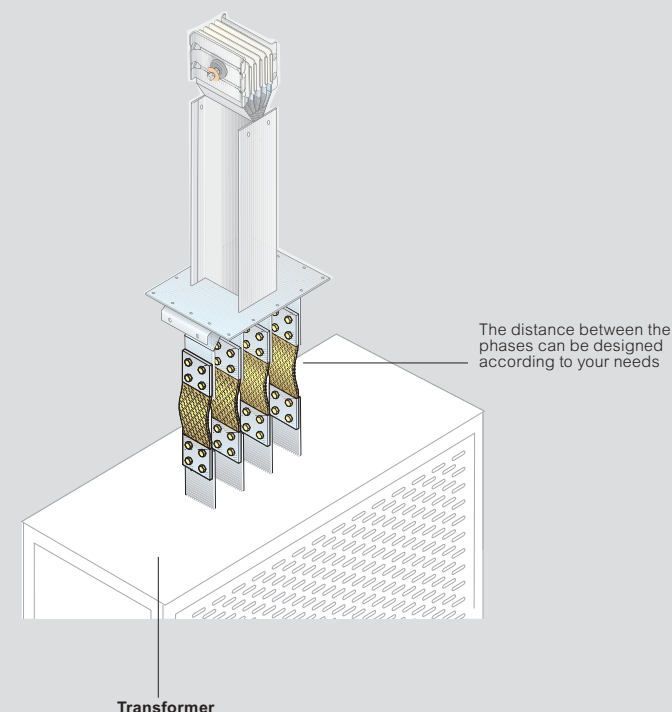
Note: for insulated flexible braid, please contact Legrand.

Dimensional data

Flexible



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



Single bar:

630A-2000A (Al)
800A-2500A (Cu)

Double bar:

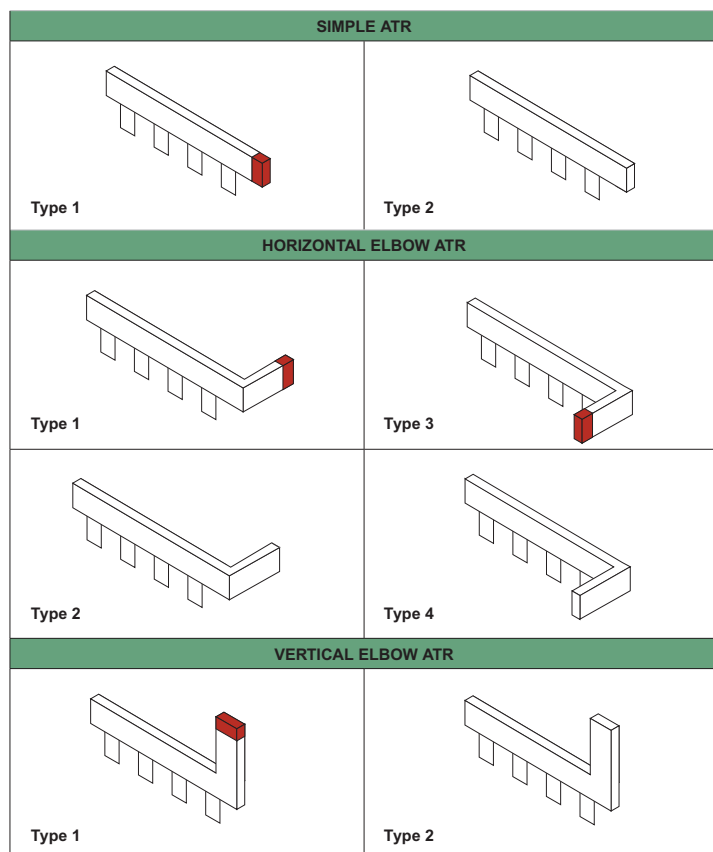
2500A-4000A (Al)
3200A-5000A (Cu)

SUPER COMPACT (SCP)

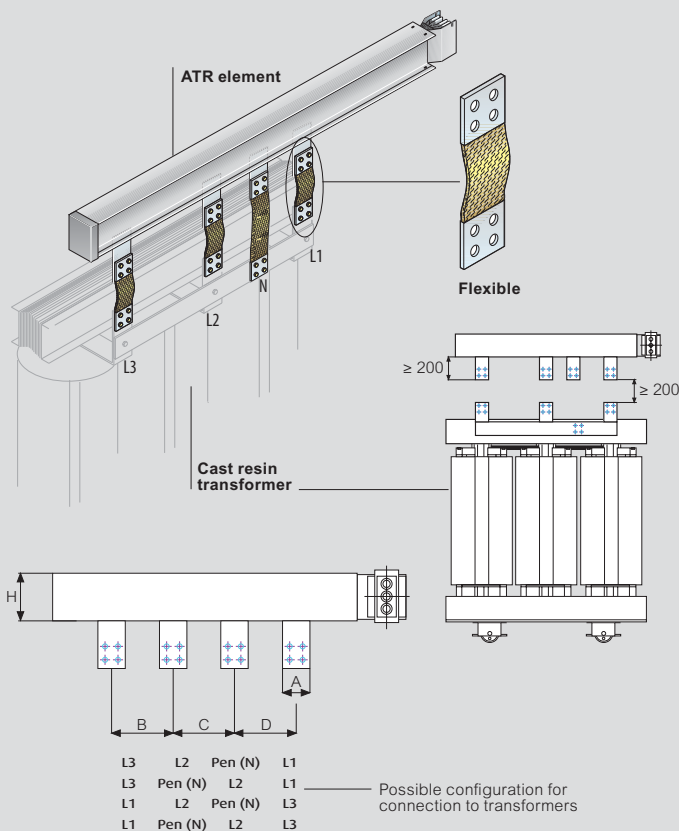
ATR elements

ATR elements

ATR are elements used for connection to electric boards or transformers, similar in everything to straight elements. These elements may be used for connection to both cast resin and oil transformers, and offer the advantage that the connection interfaces may be installed directly on the vertical section of the transformer terminals, minimising the time required for the connection of the busbar trunking system to the transformer. Each element is designed based on precise connection specifications supplied by the customer.



Dimensional data



ATR Dimensional data

Although designed ad-hoc, ATR elements are still subjected to construction limits. Below are the summarizing tables indicating these values.

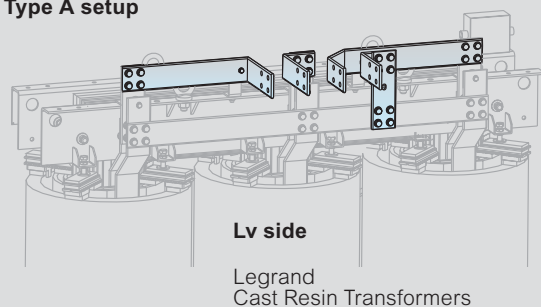
| INTERAXES (mm) | | | | | | | | | | |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Al | | | | | | Cu | | | | |
| In (A) | A | B | C | D | H | A | B | C | D | H |
| 630 | 75 | 165 | 165 | 165 | 130 | - | - | - | - | - |
| 800 | 110 | 165 | 165 | 165 | 130 | 75 | 165 | 165 | 165 | 130 |
| 1000 | 110 | 165 | 165 | 165 | 130 | 110 | 165 | 165 | 165 | 130 |
| 1250 | 120 | 165 | 165 | 165 | 130 | 110 | 165 | 165 | 165 | 130 |
| 1600 | 155 | 205 | 205 | 205 | 170 | 150 | 205 | 205 | 205 | 170 |
| 2000 | 205 | 255 | 255 | 255 | 220 | 160 | 205 | 205 | 205 | 170 |
| 2500 | 150 | 205 | 205 | 205 | 380 | 200 | 255 | 255 | 255 | 220 |
| 3200 | 180 | 235 | 235 | 235 | 440 | 150 | 205 | 205 | 205 | 380 |
| 4000 | 205 | 255 | 255 | 255 | 480 | 180 | 235 | 235 | 235 | 440 |
| 5000 | - | - | - | - | - | 200 | 255 | 255 | 255 | 480 |

SUPER COMPACT (SCP)

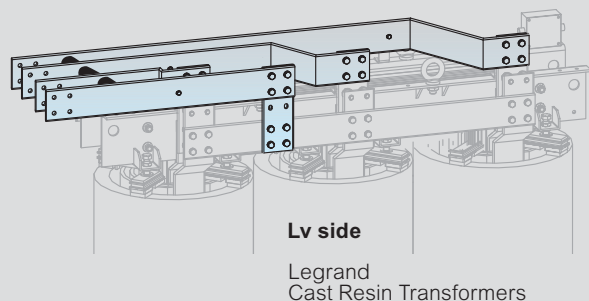
technical information

The system: the Legrand transformer advantage

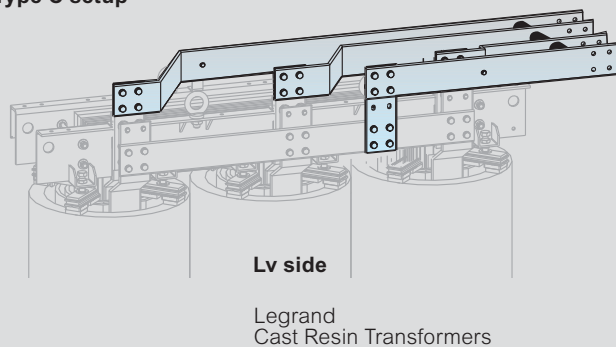
Type A setup



Type B setup



Type C setup

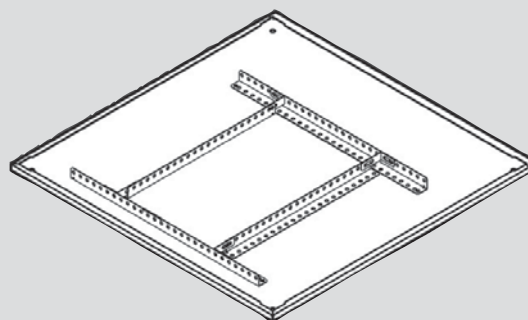


The Legrand group product synergy answers to the global installation need. The Legrand cast resin transformers have specifically designed connections for the Legrand busbars.

The versions shown represent some of the standardized solutions.

Please contact Legrand for more details on the dimensions

The system: the Legrand XL³ advantage



Cat.Nos

Installation kit for XL³ cabinets

0 205 29

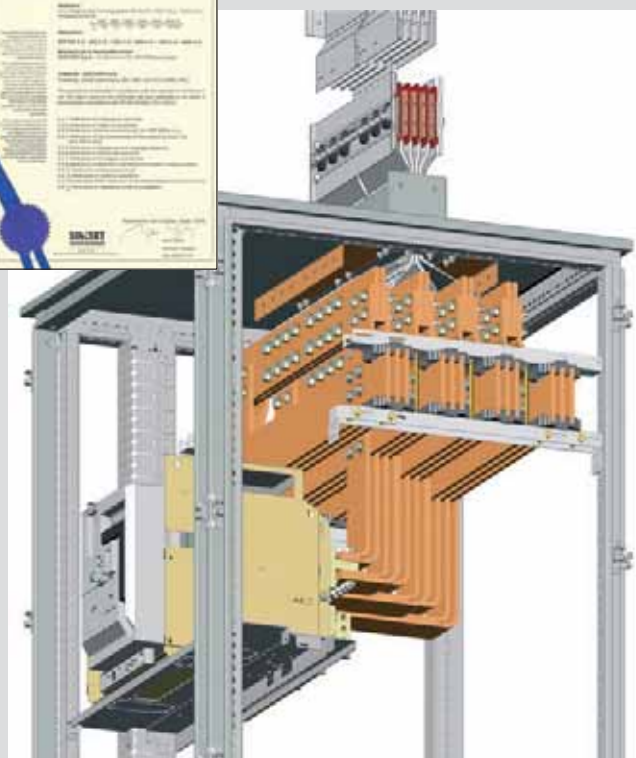
kit for reinforcing the roof of the XL³ cabinets for the installation of the Legrand interface to connect the busbar systems

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

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

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

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



SUPER COMPACT (SCP)

technical information

GENERAL FEATURES

The Super Compact SCP line is available in the standard range: From **630A to 5000A with aluminum alloy** conductors and **from 800A to 6300A with copper conductors**. The super-compact dimensions of the SCP enhance **its resistance to short circuit stresses**; in addition, they can reduce the impedance of the circuit by controlling the voltage drops and allow for the installation of high power electrical systems, even in extremely confined spaces. SCP is available with **a wide selection of tap-off boxes that range from 63A up to 1250A**, thus allowing you to locally protect and feed different types of loads by housing protective devices such as fuses, MCCBs and motorised switches. SCP is not only in **compliance with the harmonised Standards CEI EN 61439-6** but also answers specifically to many clients needs for more severe conditions of use. Thus **the rated current of Legrand's busbar trunking systems is always referred to the average ambient temperature of 40 °C** against the 35 °C required by the Standard, thus providing the markets with suitably **upgraded** products. The nominal range of all SCP Super-Compact busbars is guaranteed both for horizontal installations (flat and edgewise) and for vertical installations without downgrading. SCP busbar trunking systems are designed so that they can **be maintenance-free**, except for the periodic and compulsory inspections required by the Standard IEC 60364. The tightening torque inspection of the junction can be carried out by qualified personnel, even when the busbar is energized.

STRUCTURAL FEATURES

The outer casing of the SCP line consists of four C-ribbed section bars, bordered and riveted (thickness 1.5mm), **with excellent mechanical, electric and heat loss efficiency. The sheetmetal is made of hot galvanized steel**, treated according to UNI EN10327 and **painted with RAL7035 resins with a high resistance to chemical agents. The standard degree of protection is IP55, on request IP65 (only for transport of energy)**; also, with certain accessories, it can also be installed outdoors. The busbar conductors have a rectangular cross section with rounded corners; there are two versions:

- **Electrolytic copper ETP 99.9 UNI EN13601**
- **Aluminum alloy** treated over the entire surface with **5 galvanic processes** (copper plating + tin plating)

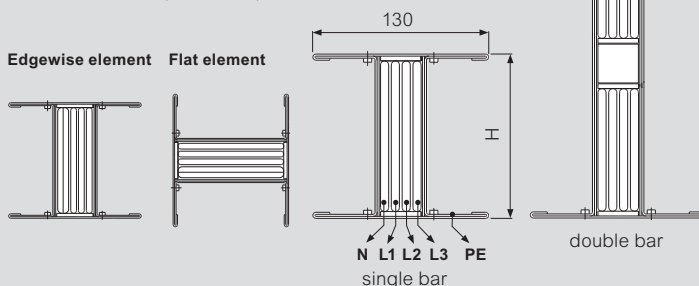
The insulation between bars is ensured by a **double sheath made with polyester film** (total thickness 0.4 mm) **class B (130°C), class F (155°C)** thermal resistance available on request. All plastic components have a **V1 self-extinguishing degree** (as per UL94); they are fire retardant and comply with the glow-wire test according to standards. The SCP line is **Halogen Free**. In order to facilitate storage operations especially to reduce the installation time, the straight elements, trunking components as well as all the components of the SCP Super Compact line are **supplied with a monobloc pre-installed at the factory**. The junction contact is ensured by **tin plated aluminium for SCP Al and copper for SCP Cu for each phase**, insulated with red **class F thermosetting plastic material**. The **monobloc** has **shearhead bolts**: after tightening the nuts with a standard wrench, the outer head will break at the correct torque value, hence giving you the certainty that the connection has been made properly so as to guarantee safety and maximum performance over time. Finally, in order to completely verify the insulation level, every element with a monobloc undergoes an **insulation test** (phase-phase, phase-PE) at the factory with a test voltage of 3500 Vac for 1,5 seconds.

| RATED CURRENT OF SCP BARS (A) | | | | | | | | | | | |
|-------------------------------|-----|-----|------|------|------|------------|------|------|-----------|------|------|
| Al | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 | |
| Single bar | | | | | | Double bar | | | Transport | | |
| Cu | | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 | 6300 |
| Single bar | | | | | | Double bar | | | Transport | | |

Standard versions:

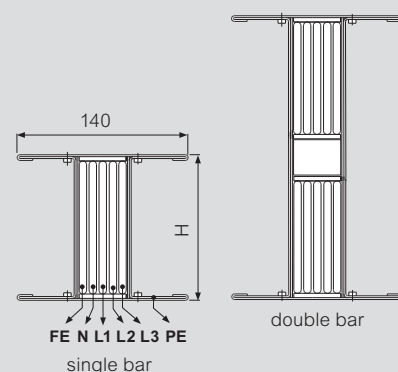
SCP line with 4 conductors 3P+N+PE, 3P+PEN, 3P+FE+PE

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



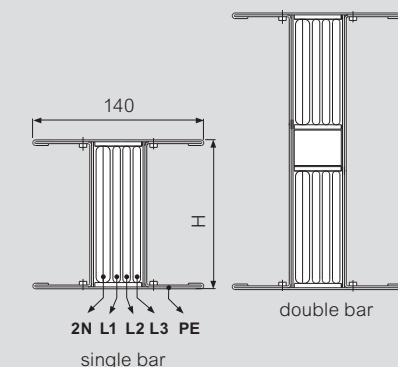
SCP5 line with 5 conductors 3P+N+FE+PE

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



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

Note: For dimension H, see technical data section
PE: Protection Earth
2N: 200% neutral



Special versions on request

SUPER COMPACT (SCP)

technical data

SCP AI (4 Conductors)

| | | 3P+N+PE | | | | | | | | | |
|--|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Rated current | I_n [A] | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 |
| Overall dimension of the busbars | $L \times H$ [mm] | 130x130 | 130x130 | 130x130 | 130x130 | 130x170 | 130x220 | 130x380 | 130x440 | 130x480 | |
| Operational voltage | U_e [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Insulation voltage | U_i [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency | f [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (1 s) | I_{cw} [kA] _{rms} | 36 | 42 | 50 | 75 | 80 | 80 | 150 | 160 | 160 | 160 |
| Peak current | I_{pk} [kA] | 76 | 88 | 110 | 165 | 176 | 176 | 330 | 352 | 352 | 352 |
| Rated short-time current of the neutral bar (1 s) | I_{cw} [kA] _{rms} | 22 | 25 | 30 | 45 | 48 | 48 | 90 | 96 | 96 | 96 |
| Peak current of the neutral bar | I_{pk} [kA] | 48 | 55 | 66 | 99 | 106 | 106 | 198 | 211 | 211 | 211 |
| Rated short-time current of the protective circuit (1 s) | I_{cw} [kA] _{rms} | 22 | 25 | 30 | 45 | 48 | 48 | 90 | 96 | 96 | 96 |
| Peak current of the protective circuit | I_{pk} [kA] | 48 | 55 | 66 | 99 | 106 | 106 | 198 | 211 | 211 | 211 |
| Phase resistance | R_{20} [mΩ/m] | 0,077 | 0,057 | 0,057 | 0,046 | 0,033 | 0,025 | 0,021 | 0,016 | 0,013 | 0,011 |
| 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 | 0,003 |
| Phase impedance | Z [mΩ/m] | 0,080 | 0,059 | 0,059 | 0,048 | 0,036 | 0,027 | 0,022 | 0,017 | 0,014 | 0,011 |
| 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 | 0,012 |
| 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 | 0,013 |
| Neutral resistance | R_{20} [mΩ/m] | 0,077 | 0,057 | 0,057 | 0,046 | 0,033 | 0,025 | 0,021 | 0,016 | 0,013 | 0,011 |
| Resistance of the protective bar (PE 1) | R_{PE} [mΩ/m] | 0,125 | 0,125 | 0,125 | 0,125 | 0,113 | 0,101 | 0,075 | 0,069 | 0,065 | 0,038 |
| Resistance of the protective bar (PE 2) | R_{PE} [mΩ/m] | 0,036 | 0,036 | 0,036 | 0,036 | 0,028 | 0,023 | 0,014 | 0,012 | 0,011 | 0,007 |
| Resistance of the protective bar (PE 3) | R_{PE} [mΩ/m] | 0,050 | 0,050 | 0,050 | 0,050 | 0,041 | 0,033 | 0,021 | 0,018 | 0,017 | 0,011 |
| Reactance of the protective bar (50 Hz) | X_{PE} [mΩ/m] | 0,080 | 0,078 | 0,078 | 0,048 | 0,039 | 0,028 | 0,020 | 0,015 | 0,016 | 0,010 |
| Resistance of the fault loop (PE 1) | R_o [mΩ/m] | 0,209 | 0,188 | 0,193 | 0,180 | 0,152 | 0,131 | 0,099 | 0,088 | 0,081 | 0,050 |
| Resistance of the fault loop (PE 2) | R_o [mΩ/m] | 0,120 | 0,099 | 0,104 | 0,091 | 0,067 | 0,053 | 0,038 | 0,031 | 0,027 | 0,019 |
| Resistance of the fault loop (PE 3) | R_o [mΩ/m] | 0,134 | 0,113 | 0,118 | 0,105 | 0,080 | 0,063 | 0,045 | 0,037 | 0,033 | 0,023 |
| 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 | 0,01 |
| Impedance of the fault loop (PE 1) | Z_o [mΩ/m] | 0,233 | 0,211 | 0,215 | 0,191 | 0,161 | 0,137 | 0,103 | 0,091 | 0,084 | 0,052 |
| Impedance of the fault loop (PE 2) | Z_o [mΩ/m] | 0,158 | 0,137 | 0,141 | 0,111 | 0,085 | 0,066 | 0,046 | 0,038 | 0,035 | 0,023 |
| Impedance of the fault loop (PE 3) | Z_o [mΩ/m] | 0,169 | 0,148 | 0,152 | 0,123 | 0,096 | 0,074 | 0,052 | 0,043 | 0,040 | 0,026 |
| Zero-sequence short-circuit resistance phase - N | R_o [mΩ/m] | 0,306 | 0,257 | 0,257 | 0,238 | 0,172 | 0,140 | 0,107 | 0,080 | 0,070 | 0,054 |
| Zero-sequence short-circuit reactance phase - N | X_o [mΩ/m] | 0,174 | 0,160 | 0,160 | 0,128 | 0,106 | 0,108 | 0,083 | 0,073 | 0,060 | 0,042 |
| Zero-sequence short-circuit impedance phase - N | Z_o [mΩ/m] | 0,352 | 0,303 | 0,303 | 0,270 | 0,202 | 0,177 | 0,135 | 0,108 | 0,092 | 0,068 |
| Zero-sequence short-circuit resistance phase - PE | R_o [mΩ/m] | 0,581 | 0,519 | 0,519 | 0,369 | 0,321 | 0,270 | 0,217 | 0,196 | 0,164 | 0,109 |
| Zero-sequence short-circuit 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 | 0,078 |
| Zero-sequence short-circuit 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 | 0,133 |
| Voltage drop with distributed load | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,70$ | 65,3 | 48,9 | 51,9 | 42,9 | 32,3 | 25,1 | 18,4 | 15,4 | 13,7 | 18,8 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,75$ | 67,9 | 50,9 | 54,1 | 44,6 | 33,4 | 25,9 | 19,2 | 16,0 | 14,1 | 19,6 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,80$ | 70,3 | 52,7 | 56,1 | 46,2 | 34,3 | 26,7 | 19,9 | 16,5 | 14,5 | 20,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,85$ | 72,5 | 54,4 | 58,0 | 47,7 | 35,1 | 27,3 | 20,6 | 16,9 | 14,9 | 21,1 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,90$ | 74,3 | 55,8 | 59,6 | 48,9 | 35,7 | 27,7 | 21,2 | 17,3 | 15,1 | 21,7 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,95$ | 75,5 | 56,7 | 60,8 | 49,7 | 35,9 | 27,8 | 21,6 | 17,5 | 15,2 | 22,1 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 1,00$ | 72,9 | 54,9 | 59,1 | 48,0 | 33,8 | 26,2 | 21,0 | 16,7 | 14,3 | 21,6 |
| Weight (PE 1) | p [kg/m] | 17,3 | 17,0 | 17,0 | 18,7 | 20,3 | 30,7 | 43,7 | 52,3 | 62,7 | 87,4 |
| Weight (PE 2) | p [kg/m] | 20,8 | 20,5 | 20,5 | 23,2 | 24,9 | 36,7 | 53,9 | 64,3 | 75,7 | 107,8 |
| Weight (PE 3) | p [kg/m] | 18,4 | 18,1 | 18,1 | 20,8 | 21,8 | 32,6 | 46,9 | 56,1 | 66,8 | 93,8 |
| Fire load | [kWh/m] | 4,5 | 5,5 | 5,5 | 6,0 | 8,5 | 10,5 | 16,0 | 19,0 | 21,0 | 32,0 |
| Degree of protection | IP | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Insulation material thermal resistance class | | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* |
| Losses for the Joule effect at nominal current | P [W/m] | 81 | 104 | 174 | 207 | 265 | 319 | 399 | 541 | 636 | 773 |
| Ambient temperature min/MAX | [°C] | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

- Regulations and conformity:

IEC/EN 61439-6;

- Product suitable for Constant/Cyclic Warm, humid climates:

- EC 60068 2-11: Environmental tests Part 2-11:

Tests – Test Ka: Salt mist

- IEC 60068 2-30: Environmental tests Part 2-30: Tests – Test Db:

Damp heat, cyclic (12 h + 12 h cycle)

- Degree of protection:

IP55, on request IP65; IPx7 carrying lines available with accessories, on request

- Insulation and surface treatment of the conductors:

Insulated conductors for the whole length, tin-plated aluminium conductors and copper without galvanic treatment

- Busbar casing material:

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

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

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

ΔV : for calculations, see on chapter "Choosing Guide"



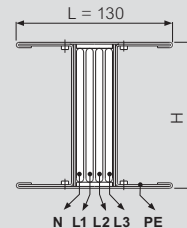
PE 1
Standard version



PE 2
Extra earth - COPPER



PE 3
Extra earth - ALUMINUM
SCP AI 3L+N+50%PE
(available on request)



THREE-PHASE: $\Delta V_{3f} = \sqrt{3}/2 \times I \times L (R_{20} \cos \varphi + X \sin \varphi)$

To calculate the ΔV_{1f} (SINGLE-PHASE): $\Delta V_{1f} = 1/2 \times I \times L (2R_{20} \cos \varphi + 2X \sin \varphi)$ on distributed load

I = current (A)

L = length (m)

Note: **5000A AI – Only for transport of energy

SUPER COMPACT (SCP)

technical data

SCP CU (4 Conductors)

| | | 3P+N+PE | | | | | | | | | |
|--|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Rated current | I_n [A] | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 | 6300 |
| Overall dimension of the busbars | $L \times H$ [mm] | 130x130 | 130x130 | 130x130 | 130x170 | 130x170 | 130x220 | 130x380 | 130x440 | 130x480 | |
| Operational voltage | U_e [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Insulation voltage | U_i [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency | f [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (1 s) | I_{cw} [kA] _{rms} | 45 | 50 | 60 | 85 | 88 | 88 | 170 | 176 | 176 | 176 |
| Peak current | I_{pk} [kA] | 95 | 110 | 132 | 187 | 194 | 194 | 374 | 387 | 387 | 387 |
| Rated short-time current of the neutral bar (1 s) | I_{cw} [kA] _{rms} | 27 | 30 | 36 | 51 | 53 | 53 | 102 | 106 | 106 | 106 |
| Peak current of the neutral bar | I_{pk} [kA] | 57 | 66 | 79 | 112 | 116 | 116 | 224 | 232 | 232 | 232 |
| Rated short-time current of the protective circuit (1 s) | I_{cw} [kA] _{rms} | 27 | 30 | 36 | 51 | 53 | 53 | 102 | 106 | 106 | 106 |
| Peak current of the protective circuit | I_{pk} [kA] | 57 | 66 | 79 | 112 | 116 | 116 | 224 | 232 | 232 | 232 |
| Phase resistance | R_{20} [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| 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 | 0,004 |
| Phase impedance | Z [mΩ/m] | 0,045 | 0,035 | 0,035 | 0,027 | 0,023 | 0,018 | 0,013 | 0,011 | 0,009 | 0,007 |
| 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 | 0,006 |
| Phase impedance at thermal conditions | Z [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| Neutral resistance | R_{20} [mΩ/m] | 0,048 | 0,039 | 0,041 | 0,031 | 0,026 | 0,020 | 0,015 | 0,013 | 0,010 | 0,007 |
| Resistance of the protective bar (PE 1) | R_{PE} [mΩ/m] | 0,125 | 0,125 | 0,125 | 0,113 | 0,113 | 0,101 | 0,075 | 0,069 | 0,065 | 0,038 |
| Resistance of the protective bar (PE 2) | R_{PE} [mΩ/m] | 0,036 | 0,036 | 0,036 | 0,028 | 0,028 | 0,023 | 0,014 | 0,012 | 0,011 | 0,007 |
| Resistance of the protective bar (PE 3) | R_{PE} [mΩ/m] | 0,050 | 0,050 | 0,050 | 0,041 | 0,041 | 0,033 | 0,021 | 0,018 | 0,017 | 0,011 |
| Reactance of the protective bar (50 Hz) | X_{PE} [mΩ/m] | 0,054 | 0,054 | 0,054 | 0,044 | 0,044 | 0,032 | 0,022 | 0,017 | 0,016 | 0,011 |
| 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 | 0,044 |
| 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 | 0,013 |
| 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 | 0,017 |
| 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 | 0,015 |
| 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 | 0,046 |
| 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 | 0,020 |
| 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 | 0,022 |
| Zero-sequence short-circuit 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 | 0,042 |
| Zero-sequence short-circuit 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 | 0,028 |
| Zero-sequence short-circuit 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 | 0,050 |
| Zero-sequence short-circuit 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 | 0,089 |
| Zero-sequence short-circuit 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 | 0,056 |
| Zero-sequence short-circuit 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 | 0,104 |
| Voltage drop with distributed load | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,70$ | 39,9 | 31,5 | 33,0 | 25,6 | 22,1 | 17,1 | 12,2 | 10,5 | 8,9 | 6,1 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,75$ | 40,7 | 32,2 | 33,9 | 26,1 | 22,4 | 17,4 | 12,4 | 10,8 | 8,9 | 6,2 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,80$ | 41,3 | 32,8 | 34,6 | 26,5 | 22,6 | 17,5 | 12,6 | 10,9 | 9,0 | 6,3 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,85$ | 41,7 | 33,3 | 35,1 | 26,7 | 22,7 | 17,5 | 12,8 | 11,0 | 9,0 | 6,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,90$ | 41,7 | 33,4 | 35,4 | 26,7 | 22,5 | 17,4 | 12,8 | 11,0 | 8,9 | 6,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,95$ | 41,1 | 33,1 | 35,1 | 26,2 | 22,0 | 17,0 | 12,6 | 10,9 | 8,6 | 6,3 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 1,00$ | 36,7 | 30,0 | 32,2 | 23,3 | 19,1 | 14,7 | 11,2 | 9,8 | 7,3 | 5,6 |
| Weight (PE 1) | p [kg/m] | 31 | 31 | 31 | 42 | 46 | 69 | 84 | 101 | 126 | 168 |
| Weight (PE 2) | p [kg/m] | 35 | 35 | 35 | 47 | 51 | 70 | 94 | 114 | 139 | 188 |
| Weight (PE 3) | p [kg/m] | 33 | 32 | 32 | 44 | 48 | 66 | 87 | 105 | 130 | 174 |
| Fire load | [kWh/m] | 4,5 | 5,5 | 5,5 | 8 | 8,2 | 10,5 | 16 | 19 | 21 | 32 |
| Degree of protection | IP | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Insulation material thermal resistance class | | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* |
| Losses for the Joule effect at nominal current | P [W/m] | 81 | 104 | 174 | 207 | 265 | 319 | 399 | 541 | 636 | 773 |
| Ambient temperature min/MAX | [°C] | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

Regulations and conformity:

IEC/EN 61439-6;

Product suitable for Constant/Cyclic Warm, humid climates:

- EC 60068 2-11: Environmental tests Part 2-11:

Tests - Test Ka: Salt mist

- IEC 60068 2-30: Environmental tests Part 2-30: Tests - Test Db:

Damp heat, cyclic (12 h + 12 h cycle)

Degree of protection:

IP55, on request IP65; IPx7 carrying lines available with accessories, on request

Insulation and surface treatment of the conductors:

Insulated conductors for the whole length, tin-plated aluminium conductors and copper without galvanic treatment

Busbar casing material:

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

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

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

ΔV : for calculations, see on chapter "Choosing Guide"



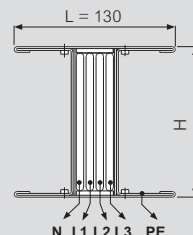
PE 1
Standard version



PE 2
Extra earth - COPPER
SCP Cu 3L+N+50%PE
(tinned copper conductors
available on request)



PE 3
Extra earth - ALUMINUM



THREE-PHASE: $\Delta V_{3f} = \sqrt{3}/2 \times I \times L \times (R_{20} \cos \varphi + X \sin \varphi)$

To calculate the ΔV_{1f} (SINGLE-PHASE): $\Delta V_{1f} = 1/2 \times I \times L \times (2R_{20} \cos \varphi + 2X \sin \varphi)$ on distributed load

I = current (A)

L = length (m)

Note: **6300A Cu - Only for transport of energy

SUPER COMPACT (SCP)

technical data

SCP5 AI - Clean Earth - 5 conductors

| | | 3P+N+PE+FE | | | | | | | | | |
|--|--|------------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Rated current | I_n [A] | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 |
| Overall dimension of the busbars | L x H [mm] | 140x130 | 140x130 | 140x130 | 140x130 | 140x170 | 140x220 | 140x380 | 140x440 | 140x480 | |
| Operational voltage | U_e [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Insulation voltage | U_i [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency | f [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (1 s) | I_{cw} [kA] _{rms} | 36 | 42 | 50 | 75 | 80 | 80 | 150 | 160 | 160 | 160 |
| Peak current | I_{pk} [kA] | 76 | 88 | 110 | 165 | 176 | 176 | 330 | 352 | 352 | 352 |
| Rated short-time current of the neutral bar (1 s) | I_{cw} [kA] _{rms} | 22 | 25 | 30 | 45 | 48 | 48 | 90 | 96 | 96 | 96 |
| Peak current of the neutral bar | I_{pk} [kA] | 48 | 55 | 66 | 99 | 106 | 106 | 198 | 211 | 211 | 211 |
| Rated short-time current of the protective circuit (1 s) | I_{cw} [kA] _{rms} | 22 | 25 | 30 | 45 | 48 | 48 | 90 | 96 | 96 | 96 |
| Peak current of the protective circuit | I_{pk} [kA] | 48 | 55 | 66 | 99 | 106 | 106 | 198 | 211 | 211 | 211 |
| Phase resistance | R_{20} [mΩ/m] | 0,077 | 0,057 | 0,057 | 0,046 | 0,033 | 0,025 | 0,021 | 0,016 | 0,013 | 0,011 |
| 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 | 0,003 |
| Phase impedance | Z [mΩ/m] | 0,080 | 0,059 | 0,059 | 0,048 | 0,036 | 0,027 | 0,022 | 0,017 | 0,014 | 0,011 |
| 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 | 0,012 |
| 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 | 0,013 |
| Neutral resistance | R_{20} [mΩ/m] | 0,077 | 0,057 | 0,057 | 0,046 | 0,033 | 0,025 | 0,021 | 0,016 | 0,013 | 0,011 |
| Functional earth resistance (FE) | R_{20} [mΩ/m] | 0,077 | 0,057 | 0,057 | 0,046 | 0,033 | 0,025 | 0,021 | 0,016 | 0,013 | 0,011 |
| Functional earth reactance (FE) | X [mΩ/m] | 0,023 | 0,017 | 0,017 | 0,015 | 0,014 | 0,011 | 0,006 | 0,006 | 0,006 | 0,003 |
| Resistance of the protective bar (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 | 0,038 |
| Resistance of the protective bar (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 | 0,007 |
| Resistance of the protective bar (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 | 0,010 |
| Reactance of the protective bar (50 Hz) | X_{PE} [mΩ/m] | 0,080 | 0,078 | 0,078 | 0,048 | 0,039 | 0,028 | 0,020 | 0,015 | 0,016 | 0,010 |
| Resistance of the fault loop (PE 1) | R_o [mΩ/m] | 0,131 | 0,102 | 0,107 | 0,089 | 0,064 | 0,050 | 0,041 | 0,032 | 0,027 | 0,021 |
| Resistance of the fault loop (PE 2) | R_o [mΩ/m] | 0,108 | 0,085 | 0,090 | 0,075 | 0,054 | 0,042 | 0,033 | 0,026 | 0,022 | 0,017 |
| Resistance of the fault loop (PE 3) | R_o [mΩ/m] | 0,115 | 0,090 | 0,095 | 0,079 | 0,057 | 0,044 | 0,034 | 0,028 | 0,024 | 0,018 |
| 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 | 0,01 |
| Impedance of the fault loop (PE 1) | Z_o [mΩ/m] | 0,167 | 0,139 | 0,143 | 0,109 | 0,083 | 0,064 | 0,048 | 0,038 | 0,035 | 0,025 |
| Impedance of the fault loop (PE 2) | Z_o [mΩ/m] | 0,149 | 0,128 | 0,131 | 0,098 | 0,076 | 0,057 | 0,042 | 0,034 | 0,031 | 0,021 |
| Impedance of the fault loop (PE 3) | Z_o [mΩ/m] | 0,154 | 0,131 | 0,134 | 0,101 | 0,078 | 0,059 | 0,043 | 0,035 | 0,032 | 0,022 |
| Zero-sequence short-circuit resistance phase - N | R_o [mΩ/m] | 0,306 | 0,257 | 0,257 | 0,238 | 0,172 | 0,140 | 0,107 | 0,080 | 0,070 | 0,054 |
| Zero-sequence short-circuit reactance phase - N | X_o [mΩ/m] | 0,174 | 0,160 | 0,160 | 0,128 | 0,106 | 0,108 | 0,083 | 0,073 | 0,060 | 0,042 |
| Zero-sequence short-circuit impedance phase - N | Z_o [mΩ/m] | 0,352 | 0,303 | 0,303 | 0,270 | 0,202 | 0,177 | 0,135 | 0,108 | 0,092 | 0,068 |
| Zero-sequence short-circuit resistance phase - PE | R_o [mΩ/m] | 0,468 | 0,387 | 0,387 | 0,246 | 0,213 | 0,173 | 0,113 | 0,107 | 0,070 | 0,057 |
| Zero-sequence short-circuit 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 | 0,078 |
| Zero-sequence short-circuit impedance phase - PE | Z_o [mΩ/m] | 0,537 | 0,450 | 0,450 | 0,311 | 0,276 | 0,274 | 0,192 | 0,183 | 0,162 | 0,096 |
| Voltage drop with distributed load | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,70$ | 65,3 | 48,9 | 51,9 | 42,9 | 32,3 | 25,1 | 18,4 | 15,4 | 13,7 | 9,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,75$ | 67,9 | 50,9 | 54,1 | 44,6 | 33,4 | 25,9 | 19,2 | 16,0 | 14,1 | 9,8 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,80$ | 70,3 | 52,7 | 56,1 | 46,2 | 34,3 | 26,7 | 19,9 | 16,5 | 14,5 | 10,2 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,85$ | 72,5 | 54,4 | 58,0 | 47,7 | 35,1 | 27,3 | 20,6 | 16,9 | 14,9 | 10,5 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,90$ | 74,3 | 55,8 | 59,6 | 48,9 | 35,7 | 27,7 | 21,2 | 17,3 | 15,1 | 10,9 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,95$ | 75,5 | 56,7 | 60,8 | 49,7 | 35,9 | 27,8 | 21,6 | 17,5 | 15,2 | 11,1 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 1,00$ | 72,9 | 54,9 | 59,1 | 48,0 | 33,8 | 26,2 | 21,0 | 16,7 | 14,3 | 10,8 |
| Weight (PE 1) | p [kg/m] | 21,6 | 21,3 | 21,3 | 23,4 | 25,4 | 38,4 | 54,6 | 65,4 | 78,4 | 109,3 |
| Weight (PE 2) | p [kg/m] | 23,0 | 22,8 | 22,8 | 26,4 | 28,6 | 41,4 | 60,1 | 72,1 | 84,9 | 134,8 |
| Weight (PE 3) | p [kg/m] | 20,6 | 20,4 | 20,4 | 24,0 | 25,5 | 37,4 | 53,1 | 64,0 | 76,0 | 117,3 |
| Fire load | [kWh/m] | 5,6 | 6,9 | 6,9 | 7,5 | 10,6 | 13,1 | 20,0 | 23,8 | 26,3 | 40,0 |
| Degree of protection | IP | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Insulation material thermal resistance class | | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* |
| Losses for the Joule effect at nominal current | P [W/m] | 100 | 122 | 205 | 260 | 300 | 363 | 455 | 592 | 790 | 935 |
| Ambient temperature min/MAX | [°C] | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

Regulations and conformity:

IEC/EN 61439-6;

Product suitable for Constant/Cyclic Warm, humid climates:

- EC 60068 2-11: Environmental tests Part 2-11:

Tests – Test Ka: Salt mist

- IEC 60068 2-30: Environmental tests Part 2-30: Tests – Test Db:

Damp heat, cyclic (12 h + 12 h cycle)

Degree of protection:

IP55, on request IP65; IPx7 carrying lines available with accessories, on request

Insulation and surface treatment of the conductors:

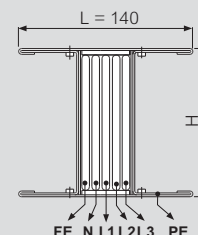
Insulated conductors for the whole length, tin-plated aluminium conductors and copper without galvanic treatment

Busbar casing material:

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

Note: **5000A AI – Only for transport of energy

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

 I_n : rated current referred to a room temperature of 40°C
 ΔV : for calculations, see on chapter "Choosing Guide"PE 1
Standard versionPE 2
Extra earth - COPPERPE 3
Extra earth - ALUMINUM
SCP AI 3L+N+50%PE
(available on request)THREE-PHASE: $\Delta V/3 = \sqrt{3}/2 \times I \times L (R_{20} \cos \varphi + X \sin \varphi)$ To calculate the $\Delta V/1$ (SINGLE-PHASE): $\Delta V/1 = 1/2 \times I \times L (2R_{20} \cos \varphi + 2X \sin \varphi)$ on distributed load I = current (A) L = length (m)

SUPER COMPACT (SCP)

technical data

SCP5 CU - Clean Earth - 5 conductors

| | | 3P+N+PE+FE | | | | | | | | | |
|--|--|------------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Rated current | I_n [A] | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 | 6300 |
| Overall dimension of the busbars | $L \times H$ [mm] | 140x130 | 140x130 | 140x130 | 140x170 | 140x170 | 140x220 | 140x380 | 140x440 | 140x480 | |
| Operational voltage | U_e [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Insulation voltage | U_i [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency | f [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (1 s) | I_{cw} [kA] _{rms} | 45 | 50 | 60 | 85 | 88 | 88 | 170 | 176 | 176 | 176 |
| Peak current | I_{pk} [kA] | 95 | 110 | 132 | 187 | 194 | 194 | 374 | 387 | 387 | 387 |
| Rated short-time current of the neutral bar (1 s) | I_{cw} [kA] _{rms} | 27 | 30 | 36 | 51 | 53 | 53 | 102 | 106 | 106 | 106 |
| Peak current of the neutral bar | I_{pk} [kA] | 57 | 66 | 79 | 112 | 116 | 116 | 224 | 232 | 232 | 232 |
| Rated short-time current of the protective circuit (1 s) | I_{cw} [kA] _{rms} | 27 | 30 | 36 | 51 | 53 | 53 | 102 | 106 | 106 | 106 |
| Peak current of the protective circuit | I_{pk} [kA] | 57 | 66 | 79 | 112 | 116 | 116 | 224 | 232 | 232 | 232 |
| Phase resistance | R_{20} [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| 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 | 0,004 |
| Phase impedance | Z [mΩ/m] | 0,045 | 0,035 | 0,035 | 0,027 | 0,023 | 0,018 | 0,013 | 0,011 | 0,009 | 0,007 |
| 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 | 0,006 |
| Phase impedance at thermal conditions | Z [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| Neutral resistance | R_{20} [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| Functional earth resistance (FE) | R_{20} [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| Functional earth reactance (FE) | X [mΩ/m] | 0,023 | 0,017 | 0,017 | 0,015 | 0,014 | 0,011 | 0,007 | 0,006 | 0,006 | 0,004 |
| Resistance of the protective bar (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 | 0,038 |
| Resistance of the protective bar (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 | 0,007 |
| Resistance of the protective bar (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 | 0,011 |
| Reactance of the protective bar (50 Hz) | X_{PE} [mΩ/m] | 0,054 | 0,054 | 0,054 | 0,044 | 0,044 | 0,032 | 0,022 | 0,017 | 0,016 | 0,011 |
| 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 | 0,011 |
| 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 | 0,010 |
| 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 | 0,010 |
| 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 | 0,015 |
| 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 | 0,018 |
| 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 | 0,017 |
| 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 | 0,018 |
| Zero-sequence short-circuit 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 | 0,042 |
| Zero-sequence short-circuit 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 | 0,028 |
| Zero-sequence short-circuit 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 | 0,050 |
| Zero-sequence short-circuit 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 | 0,046 |
| Zero-sequence short-circuit 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 | 0,052 |
| Zero-sequence short-circuit 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 | 0,069 |
| Voltage drop with distributed load | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,70$ | 39,9 | 31,5 | 33,0 | 25,6 | 22,1 | 17,1 | 12,2 | 10,5 | 8,9 | 6,1 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,75$ | 40,7 | 32,2 | 33,9 | 26,1 | 22,4 | 17,4 | 12,4 | 10,8 | 8,9 | 6,2 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,80$ | 41,3 | 32,8 | 34,6 | 26,5 | 22,6 | 17,5 | 12,6 | 10,9 | 9,0 | 6,3 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,85$ | 41,7 | 33,3 | 35,1 | 26,7 | 22,7 | 17,5 | 12,8 | 11,0 | 9,0 | 6,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,90$ | 41,7 | 33,4 | 35,4 | 26,7 | 22,5 | 17,4 | 12,8 | 11,0 | 8,9 | 6,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,95$ | 41,1 | 33,1 | 35,1 | 26,2 | 22,0 | 17,0 | 12,6 | 10,9 | 8,6 | 6,3 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 1,00$ | 36,7 | 30,0 | 32,2 | 23,3 | 19,1 | 14,7 | 11,2 | 9,8 | 7,3 | 5,6 |
| Weight (PE 1) | p [kg/m] | 39 | 39 | 39 | 53 | 58 | 86 | 105 | 126 | 158 | 210 |
| Weight (PE 2) | p [kg/m] | 41 | 41 | 41 | 55 | 60 | 83 | 111 | 134 | 174 | 235 |
| Weight (PE 3) | p [kg/m] | 38 | 38 | 38 | 52 | 57 | 79 | 104 | 126 | 163 | 218 |
| Fire load | [kWh/m] | 5,6 | 6,9 | 6,9 | 10,0 | 10,3 | 13,1 | 20,0 | 23,8 | 26,3 | 40 |
| Degree of protection | IP | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Insulation material thermal resistance class | | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* |
| Losses for the Joule effect at nominal current | P [W/m] | 81 | 104 | 174 | 207 | 265 | 319 | 399 | 541 | 636 | 773 |
| Ambient temperature min/MAX | [°C] | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

Regulations and conformity:

IEC/EN 61439-6;

Product suitable for Constant/Cyclic Warm, humid climates:

- EC 60068 2-11: Environmental tests Part 2-11:

Tests – Test Ka: Salt mist

- IEC 60068 2-30: Environmental tests Part 2-30: Tests – Test Db:

Damp heat, cyclic (12 h + 12 h cycle)

Degree of protection:

IP55, on request IP65; IPx7 carrying lines available with accessories, on request

Insulation and surface treatment of the conductors:

Insulated conductors for the whole length, tin-plated aluminium conductors and copper without galvanic treatment

Busbar casing material:

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

Note: **6300A Cu – Only for transport of energy

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

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

ΔV : for calculations, see on chapter "Choosing Guide"



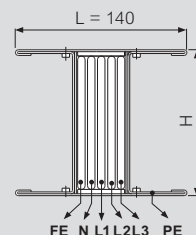
PE 1
Standard version



PE 2
Extra earth - COPPER
SCP Cu 3L+N+50%PE
(tinned copper conductors
available on request)



PE 3
Extra earth - ALUMINUM



THREE-PHASE: $\Delta V_{3f} = \sqrt{3} \times I \times L \times (R_{20} \cos \varphi + X \sin \varphi)$

To calculate the ΔV_{1f} (SINGLE-PHASE): $\Delta V_{1f} = 1/2 \times I \times L \times (2R_{20} \cos \varphi + 2X \sin \varphi)$ on distributed load

I = current (A)

L = length (m)

SUPER COMPACT (SCP)

technical data

SCP 2N AI - Double Neutral

| Rated current | In [A] | 3P+2N+PE | | | | | | | | | |
|--|--|----------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| | | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 |
| Overall dimension of the busbars | L x H [mm] | 140x130 | 140x130 | 140x130 | 140x130 | 140x170 | 140x220 | 140x380 | 140x440 | 140x480 | |
| Operational voltage | Ue [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Insulation voltage | Ui [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency | f [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/61 |
| Rated short-time current (1 s) | Icw [kA] _{rms} | 36 | 42 | 50 | 75 | 80 | 80 | 150 | 160 | 160 | 160 |
| Peak current | Ipk [kA] | 76 | 88 | 110 | 165 | 176 | 176 | 330 | 352 | 352 | 352 |
| Rated short-time current of the neutral bar (1 s) | Icw [kA] _{rms} | 22 | 25 | 30 | 45 | 48 | 48 | 90 | 96 | 96 | 96 |
| Peak current of the neutral bar | Ipk [kA] | 48 | 55 | 66 | 99 | 106 | 106 | 198 | 211 | 211 | 211 |
| Rated short-time current of the protective circuit (1 s) | Icw [kA] _{rms} | 22 | 25 | 30 | 45 | 48 | 48 | 90 | 96 | 96 | 96 |
| Peak current of the protective circuit | Ipk [kA] | 48 | 55 | 66 | 99 | 106 | 106 | 198 | 211 | 211 | 211 |
| Phase resistance | R20 [mΩ/m] | 0,077 | 0,057 | 0,057 | 0,046 | 0,033 | 0,025 | 0,021 | 0,016 | 0,013 | 0,011 |
| 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 | 0,003 |
| Phase impedance | Z [mΩ/m] | 0,080 | 0,059 | 0,059 | 0,048 | 0,036 | 0,027 | 0,022 | 0,017 | 0,014 | 0,011 |
| Phase resistance at thermal conditions | Rt [mΩ/m] | 0,084 | 0,063 | 0,068 | 0,055 | 0,039 | 0,030 | 0,024 | 0,019 | 0,016 | 0,012 |
| 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 | 0,013 |
| Neutral resistance | R20 [mΩ/m] | 0,039 | 0,029 | 0,029 | 0,023 | 0,017 | 0,013 | 0,011 | 0,008 | 0,007 | 0,006 |
| Resistance of the protective bar (PE type 2) | RPE [mΩ/m] | 0,121 | 0,121 | 0,121 | 0,121 | 0,110 | 0,098 | 0,074 | 0,068 | 0,064 | 0,038 |
| Resistance of the protective bar (PE type 2) | RPE [mΩ/m] | 0,035 | 0,035 | 0,035 | 0,035 | 0,028 | 0,023 | 0,014 | 0,012 | 0,011 | 0,007 |
| Resistance of the protective bar (PE type 3) | RPE [mΩ/m] | 0,050 | 0,050 | 0,050 | 0,050 | 0,040 | 0,033 | 0,020 | 0,018 | 0,017 | 0,010 |
| Reactance of the protective bar (50 Hz) | XPE [mΩ/m] | 0,080 | 0,078 | 0,078 | 0,048 | 0,039 | 0,028 | 0,020 | 0,015 | 0,016 | 0,010 |
| Resistance of the fault loop (PE 1) | Ro [mΩ/m] | 0,205 | 0,184 | 0,189 | 0,176 | 0,149 | 0,128 | 0,098 | 0,087 | 0,080 | 0,050 |
| Resistance of the fault loop (PE 2) | Ro [mΩ/m] | 0,119 | 0,098 | 0,103 | 0,090 | 0,067 | 0,053 | 0,038 | 0,031 | 0,027 | 0,019 |
| Resistance of the fault loop (PE 3) | Ro [mΩ/m] | 0,134 | 0,113 | 0,118 | 0,105 | 0,079 | 0,063 | 0,044 | 0,037 | 0,033 | 0,022 |
| Reactance of the fault loop (50 Hz) | Xo [mΩ/m] | 0,10 | 0,10 | 0,10 | 0,06 | 0,05 | 0,04 | 0,03 | 0,02 | 0,02 | 0,01 |
| Impedance of the fault loop (PE 1) | Zo [mΩ/m] | 0,230 | 0,207 | 0,212 | 0,187 | 0,158 | 0,134 | 0,102 | 0,090 | 0,083 | 0,052 |
| Impedance of the fault loop (PE 2) | Zo [mΩ/m] | 0,158 | 0,137 | 0,140 | 0,110 | 0,085 | 0,066 | 0,046 | 0,038 | 0,035 | 0,023 |
| Impedance of the fault loop (PE 3) | Zo [mΩ/m] | 0,169 | 0,148 | 0,152 | 0,123 | 0,095 | 0,074 | 0,051 | 0,043 | 0,040 | 0,026 |
| Zero-sequence short-circuit resistance phase - N | Ro [mΩ/m] | 0,147 | 0,135 | 0,135 | 0,132 | 0,129 | 0,126 | 0,084 | 0,063 | 0,048 | 0,042 |
| Zero-sequence short-circuit reactance phase - N | Xo [mΩ/m] | 0,198 | 0,180 | 0,180 | 0,166 | 0,160 | 0,190 | 0,135 | 0,165 | 0,103 | 0,068 |
| Zero-sequence short-circuit impedance phase - N | Zo [mΩ/m] | 0,247 | 0,225 | 0,225 | 0,212 | 0,206 | 0,228 | 0,159 | 0,177 | 0,114 | 0,080 |
| Zero-sequence short-circuit resistance phase - PE | Ro [mΩ/m] | 0,581 | 0,519 | 0,519 | 0,369 | 0,321 | 0,270 | 0,217 | 0,196 | 0,164 | 0,109 |
| Zero-sequence short-circuit reactance phase - PE | Xo [mΩ/m] | 0,263 | 0,229 | 0,229 | 0,191 | 0,175 | 0,212 | 0,155 | 0,148 | 0,146 | 0,078 |
| Zero-sequence short-circuit impedance phase - PE | Zo [mΩ/m] | 0,638 | 0,567 | 0,567 | 0,416 | 0,366 | 0,343 | 0,267 | 0,246 | 0,220 | 0,133 |
| Voltage drop with distributed load | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 0,70$ | 65,3 | 48,9 | 51,9 | 42,9 | 32,3 | 25,1 | 18,4 | 15,4 | 13,7 | 9,4 |
| | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 0,75$ | 67,9 | 50,9 | 54,1 | 44,6 | 33,4 | 25,9 | 19,2 | 16,0 | 14,1 | 9,8 |
| | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 0,80$ | 70,3 | 52,7 | 56,1 | 46,2 | 34,3 | 26,7 | 19,9 | 16,5 | 14,5 | 10,2 |
| | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 0,85$ | 72,5 | 54,4 | 58,0 | 47,7 | 35,1 | 27,3 | 20,6 | 16,9 | 14,9 | 10,5 |
| | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 0,90$ | 74,3 | 55,8 | 59,6 | 48,9 | 35,7 | 27,7 | 21,2 | 17,3 | 15,1 | 10,9 |
| | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 0,95$ | 75,5 | 56,7 | 60,8 | 49,7 | 35,9 | 27,8 | 21,6 | 17,5 | 15,2 | 11,1 |
| | $\Delta V [V/m/A] 10^{-6} \cos \varphi = 1,00$ | 72,9 | 54,9 | 59,1 | 48,0 | 33,8 | 26,2 | 21,0 | 16,7 | 14,3 | 10,8 |
| Weight (PE 1) | p [kg/m] | 21,6 | 21,3 | 21,3 | 23,4 | 25,4 | 38,4 | 54,6 | 65,4 | 78,4 | 109,3 |
| Weight (PE 2) | p [kg/m] | 23,0 | 22,8 | 22,8 | 26,4 | 28,6 | 41,4 | 60,1 | 72,1 | 84,9 | 134,8 |
| Weight (PE 3) | p [kg/m] | 20,6 | 20,4 | 20,4 | 24,0 | 25,5 | 37,4 | 53,1 | 64,0 | 76,0 | 117,3 |
| Fire load | [kWh/m] | 5,6 | 6,9 | 6,9 | 7,5 | 10,6 | 13,1 | 20,0 | 23,8 | 26,3 | 40,0 |
| Degree of protection | IP | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Insulation material thermal resistance class | | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* |
| Losses for the Joule effect at nominal current | P [W/m] | 100 | 122 | 205 | 260 | 300 | 363 | 455 | 592 | 790 | 935 |
| Ambient temperature min/MAX | [°C] | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

- Regulations and conformity:

IEC/EN 61439-6;

- Product suitable for Constant/Cyclic Warm, humid climates:

- EC 60068 2-11: Environmental tests Part 2-11:

Tests – Test Ka: Salt mist

- IEC 60068 2-30: Environmental tests Part 2-30: Tests – Test Db:

Damp heat, cyclic (12 h + 12 h cycle)

- Degree of protection:

IP55, on request IP65; IPx7 carrying lines available with

accessories, on request

- Insulation and surface treatment of the conductors:

Insulated conductors for the whole length, tin-plated aluminium

conductors and copper without galvanic treatment

- Busbar casing material:

1,5mm galvanized steel plate, pre-painted or stainless steel

(available, if required, with special paint and/or with

thickness 2 mm or with stainless steel casing)

Note: **5000A AI – Only for transport of energy

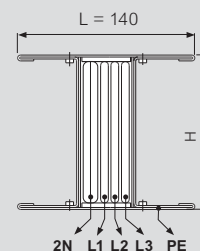
* Class F thermal resistance (155°C) available on request

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

 ΔV : for calculations, see on chapter "Choosing Guide"PE 1
Standard versionPE 2
Extra earth - COPPERPE 3
Extra earth - ALUMINUM
SCP AI 3L+N+50%PE
(available on request)THREE-PHASE: $\Delta V_{3f} = \sqrt{3/2} \times I \times L (R_{20} \cos \varphi + X \sin \varphi)$ To calculate the ΔV_{1f} (SINGLE-PHASE): $\Delta V_{1f} = 1/2 \times I \times L (2R_{20} \cos \varphi + 2X \sin \varphi)$ on distributed load

I = current (A)

L = length (m)



SUPER COMPACT (SCP)

technical data

SCP 2N CU - Double Neutral

| | | 3P+2N+PE | | | | | | | | | |
|--|--|----------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Rated current | I_n [A] | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3200 | 4000 | 5000 | 6300 |
| Overall dimension of the busbars | $L \times H$ [mm] | 140x130 | 140x130 | 140x130 | 140x170 | 140x170 | 140x220 | 140x380 | 140x440 | 140x480 | |
| Operational voltage | U_e [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Insulation voltage | U_i [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Frequency | f [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Rated short-time current (1 s) | I_{cw} [kA] _{rms} | 45 | 50 | 60 | 85 | 88 | 88 | 170 | 176 | 176 | 176 |
| Peak current | I_{pk} [kA] | 95 | 110 | 132 | 187 | 194 | 194 | 374 | 387 | 387 | 387 |
| Rated short-time current of the neutral bar (1 s) | I_{cw} [kA] _{rms} | 27 | 30 | 36 | 51 | 53 | 53 | 102 | 106 | 106 | 106 |
| Peak current of the neutral bar | I_{pk} [kA] | 57 | 66 | 79 | 112 | 116 | 116 | 224 | 232 | 232 | 232 |
| Rated short-time current of the protective circuit (1 s) | I_{cw} [kA] _{rms} | 27 | 30 | 36 | 51 | 53 | 53 | 102 | 106 | 106 | 106 |
| Peak current of the protective circuit | I_{pk} [kA] | 57 | 66 | 79 | 112 | 116 | 116 | 224 | 232 | 232 | 232 |
| Phase resistance | R_{20} [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| 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 | 0,004 |
| Phase impedance | Z [mΩ/m] | 0,045 | 0,035 | 0,035 | 0,027 | 0,023 | 0,018 | 0,013 | 0,011 | 0,009 | 0,007 |
| 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 | 0,006 |
| Phase impedance at thermal conditions | Z [mΩ/m] | 0,039 | 0,030 | 0,030 | 0,022 | 0,018 | 0,014 | 0,011 | 0,009 | 0,007 | 0,006 |
| Neutral resistance | R_{20} [mΩ/m] | 0,020 | 0,015 | 0,015 | 0,011 | 0,009 | 0,007 | 0,006 | 0,005 | 0,003 | 0,003 |
| Resistance of the protective bar (PE type 2) | R_{PE} [mΩ/m] | 0,125 | 0,125 | 0,125 | 0,113 | 0,113 | 0,101 | 0,075 | 0,069 | 0,065 | 0,038 |
| Resistance of the protective bar (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 | 0,007 |
| Resistance of the protective bar (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 | 0,011 |
| Reactance of the protective bar (50 Hz) | X_{PE} [mΩ/m] | 0,054 | 0,054 | 0,054 | 0,044 | 0,044 | 0,032 | 0,022 | 0,017 | 0,016 | 0,011 |
| 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 | 0,044 |
| 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 | 0,013 |
| 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 | 0,017 |
| 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 | 0,015 |
| 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 | 0,046 |
| 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 | 0,020 |
| 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 | 0,022 |
| Zero-sequence short-circuit 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 | 0,044 |
| Zero-sequence short-circuit 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 | 0,039 |
| Zero-sequence short-circuit 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 | 0,059 |
| Zero-sequence short-circuit 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 | 0,089 |
| Zero-sequence short-circuit 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 | 0,056 |
| Zero-sequence short-circuit 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 | 0,104 |
| Voltage drop with distributed load | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,70$ | 39,9 | 31,5 | 33,0 | 25,6 | 22,1 | 17,1 | 12,2 | 10,5 | 8,9 | 6,1 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,75$ | 40,7 | 32,2 | 33,9 | 26,1 | 22,4 | 17,4 | 12,4 | 10,8 | 8,9 | 6,2 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,80$ | 41,3 | 32,8 | 34,6 | 26,5 | 22,6 | 17,5 | 12,6 | 10,9 | 9,0 | 6,3 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,85$ | 41,7 | 33,3 | 35,1 | 26,7 | 22,7 | 17,5 | 12,8 | 11,0 | 9,0 | 6,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,90$ | 41,7 | 33,4 | 35,4 | 26,7 | 22,5 | 17,4 | 12,8 | 11,0 | 8,9 | 6,4 |
| | ΔV [V/m/A] $10^{-6} \cos \varphi = 0,95$ | 41,1 | 33,1 | 35,1 | 26,2 | 22,0 | 17,0 | 12,6 | 10,9 | 8,6 | 6,3 |
| Weight (PE 1) | ΔV [V/m/A] $10^{-6} \cos \varphi = 1,00$ | 36,7 | 30,0 | 32,2 | 23,3 | 19,1 | 14,7 | 11,2 | 9,8 | 7,3 | 5,6 |
| | p [kg/m] | 39 | 39 | 39 | 53 | 58 | 86 | 105 | 126 | 158 | 210 |
| | p [kg/m] | 41 | 41 | 41 | 55 | 60 | 83 | 111 | 134 | 174 | 235 |
| | p [kg/m] | 38 | 38 | 38 | 52 | 57 | 79 | 104 | 126 | 163 | 218 |
| | [kWh/m] | 5,6 | 6,9 | 6,9 | 10,0 | 10,3 | 13,1 | 20,0 | 23,8 | 26,3 | 40 |
| | IP | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Degree of protection | | IP55 | IP55 | IP55 | IP55 | IP55 | IP55 | IP55 | IP55 | IP55 | IP55 |
| Insulation material thermal resistance class | | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* | B/F* |
| Losses for the Joule effect at nominal current | P [W/m] | 81 | 104 | 174 | 207 | 265 | 319 | 399 | 541 | 636 | 773 |
| Ambient temperature min/MAX | [°C] | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 | -5/50 |

Regulations and conformity:

IEC/EN 61439-6;

Product suitable for Constant/Cyclic Warm, humid climates:

- EC 60068 2-11: Environmental tests Part 2-11:

Tests – Test Ka: Salt mist

- IEC 60068 2-30: Environmental tests Part 2-30: Tests – Test Db:

Damp heat, cyclic (12 h + 12 h cycle)

Degree of protection:

IP55, on request IP65; IPx7 carrying lines available with

accessories, on request

Insulation and surface treatment of the conductors:

Insulated conductors for the whole length, tin-plated aluminium

conductors and copper without galvanic treatment

Busbar casing material:

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

(available, if required, with special paint and/or with

thickness 2 mm or with stainless steel casing)

Note: **6300A Cu – Only for transport of energy

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

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

ΔV : for calculations, see on chapter "Choosing Guide"



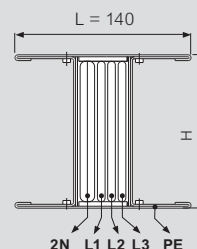
PE 1
Standard version



PE 2
Extra earth - COPPER
SCP Cu 3L+N+50%PE
(tinned copper conductors
available on request)



PE 3
Extra earth - ALUMINUM



THREE-PHASE: $\Delta V/3 = \sqrt{3}/2 \times I \times L (R_{20} \cos \varphi + X \sin \varphi)$

To calculate the **$\Delta V/1f$ (SINGLE-PHASE):** $\Delta V/1 = 1/2 \times I \times L (2R_{20} \cos \varphi + 2X \sin \varphi)$ on distributed load

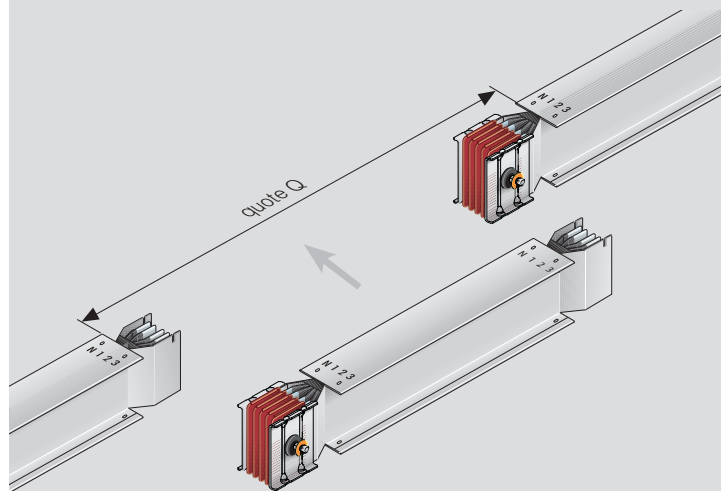
I = current (A)

L = length (m)

SUPER COMPACT (SCP)

measurement of special element lengths

Measurement of straight elements

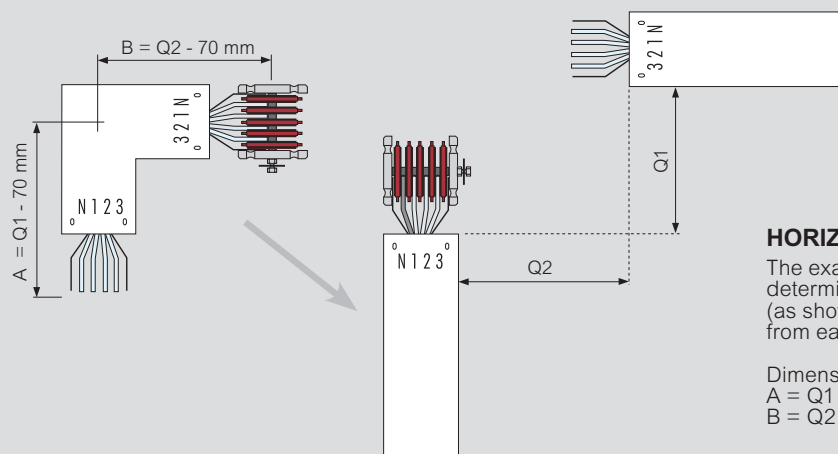


The exact length of the piece to be ordered can be determined by measuring the distance between the elements (as shown in the picture) and then subtracting 270 mm from the dimension that has been taken.

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

Example: Dimension measured $Q = 2500 \text{ mm}$
Order a element $(2500 - 270) = 2230 \text{ mm}$

Measurement of the size for the ordering of a special path element



HORIZONTAL ELBOW

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

Dimension of the element to order:

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

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

SUPER COMPACT (SCP)

suggestions for the project development

1. Rating

2500 A

2. Application:

Transport ☐

Distribution ☐ No. of outlets

3. Icc at the beginning of the linekA

4. Material:

Aluminium



Copper



5. Degree of protection:

IP55 (standard)



6. Painting:

RAL7035 (standard)



Different RAL

colour on request ☐

7. Neutral section:

100% SCP (standard)



200% SCP2N



8. Nominal ambient

temperature:

40°C (standard)



Other on request.....



9. Attach Busbar layout*

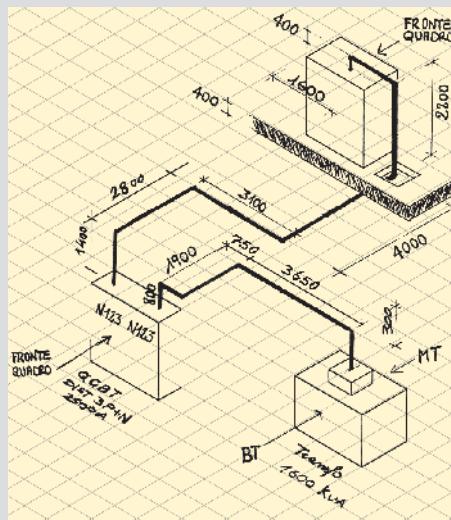
Drawing



Dwg file



* Example of drawing to attach

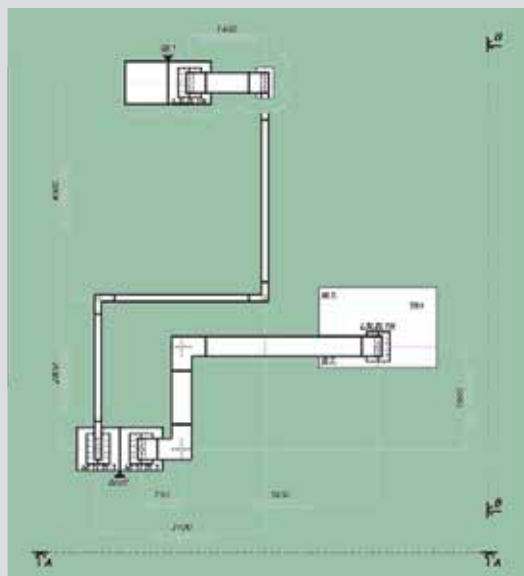
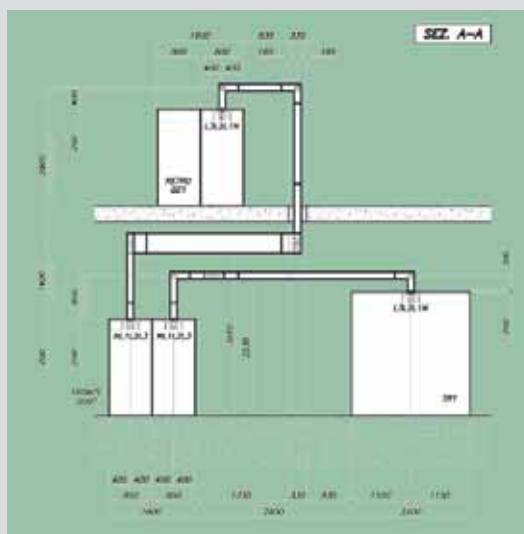


■ **Example for quotation check list:**

Checklist to be done during the project

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

Example of detail of the project



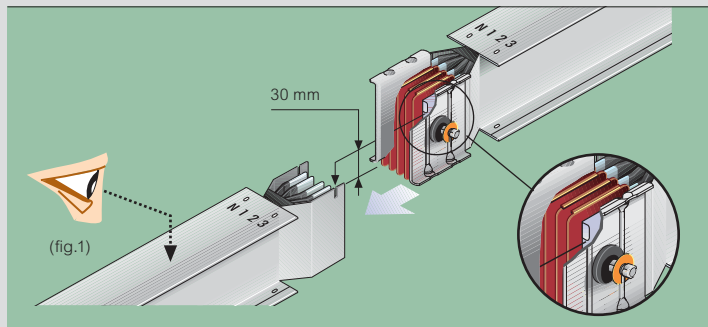
Legrand provides without charge, if required:

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

SUPER COMPACT (SCP)

installation guidelines

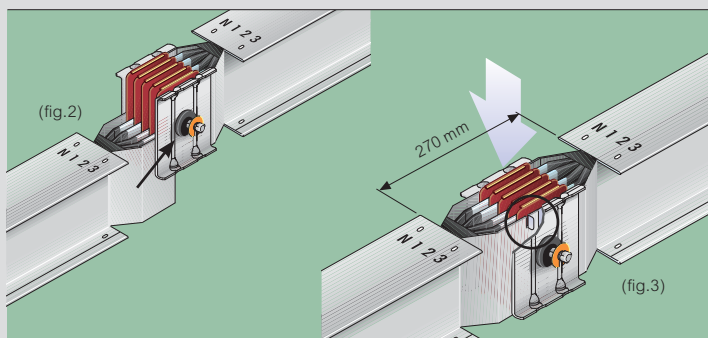
INSTALLATION SEQUENCE OF THE JUNCTION



The installation instructions are placed on every element near the junction.

Make sure that the contacts are clean.

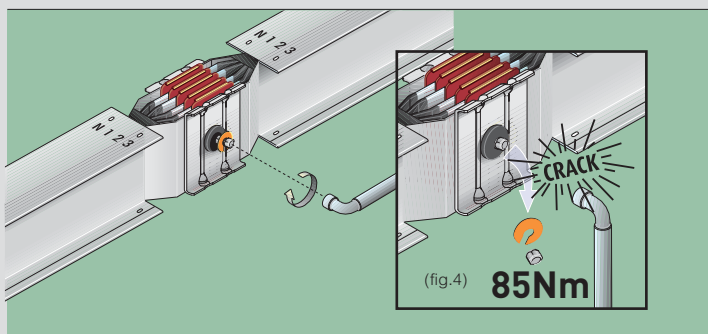
Join the two elements together (Fig.1).



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

The positioning pin on the monobloc should be fitted into the corresponding slot on the earth plate.

Verify the distance between elements, 270mm, before tightening the monobloc completely (Fig.3).

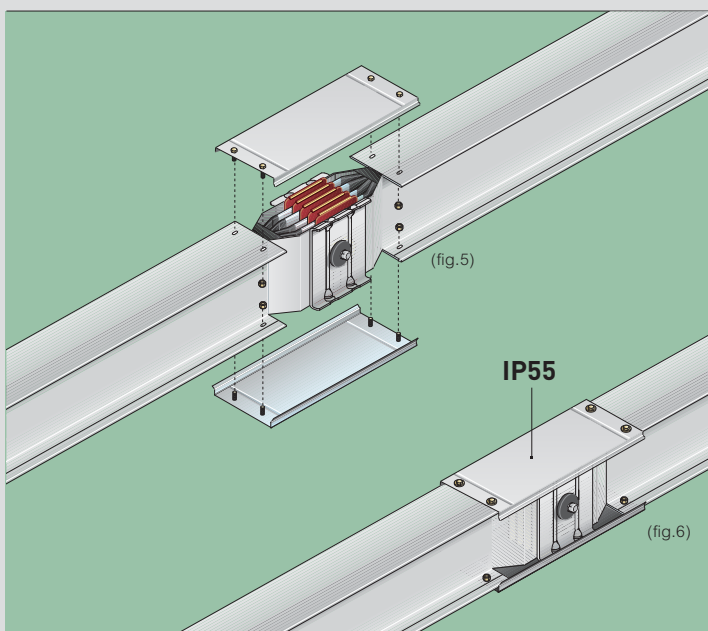
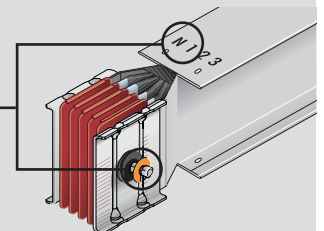


Tighten the bolt of the monobloc until the 1st head breaks off (Fig. 4).

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.

In standard execution the self-shearing bolt is fitted on the opposite side of the Neutral.



Install the covers of the junction (fig. 5)

Connection completed correctly with Protection degree IP55 (fig.6)

SUPER COMPACT (SCP)

mechanical design precautions

Below are some precautions that may be useful to avoid problems during the assembly, which we recommend should be taken into account during the design.

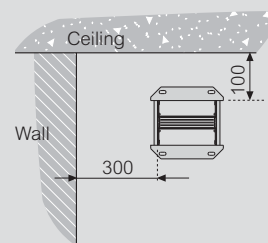
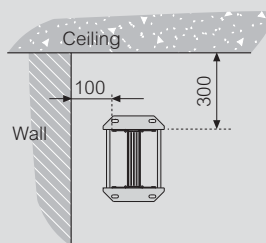
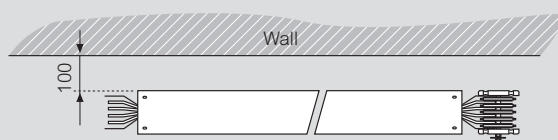
MINIMUM DISTANCES FROM THE STRUCTURE

The minimum distance from the walls, to avoid problems during edgewise installation of the busbar, is 300 mm. The variables that must be taken into account for correct assembly are:

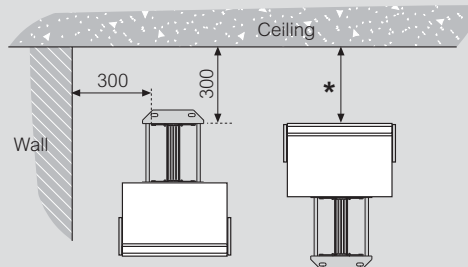
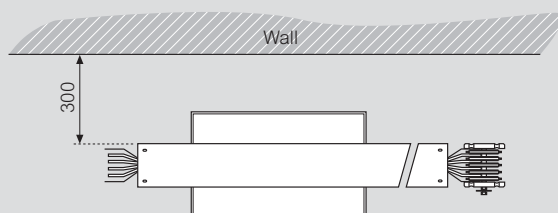
- position of the bolt for tightening the Monobloc; the minimum required distance is 100 mm;
- sizes of the distribution element (box) selected for the collection of power (at least 300 mm);
- any brackets and their assembly;
- accessibility to the screws for the installation of the brackets and the closing of the junctions;
- any material required for the actual installation in order to compensate for wall imperfections.

In case of rising mains installation, if the system does not require fire barriers, the bracket supporting the bracket can be directly secured to the wall. Otherwise, allow for a spacing support between the bracket and the wall, to ensure that the back of the busbar remains at a distance of 100 mm from the wall, therefore ensuring enough space for the positioning of the partitions.

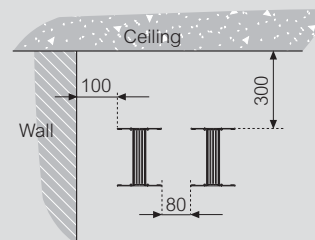
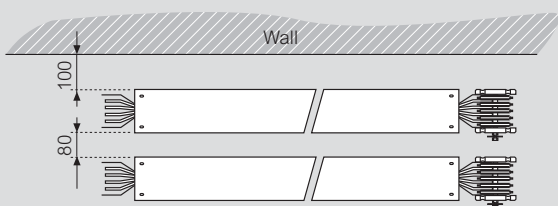
Minimum distance of the wall / ceiling elements



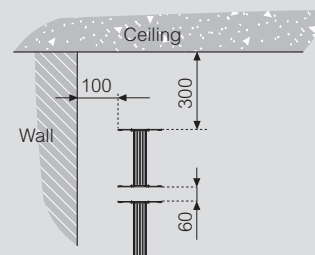
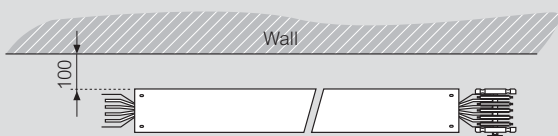
When there are tap-off units along the busbars, the minimum distances depend on the dimensions of the tap-offs selected.



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



Minimum installation distance when there are several adjacent lines



Minimum installation distance when there are several overlapped lines

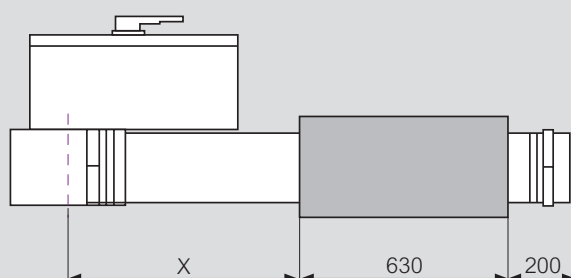
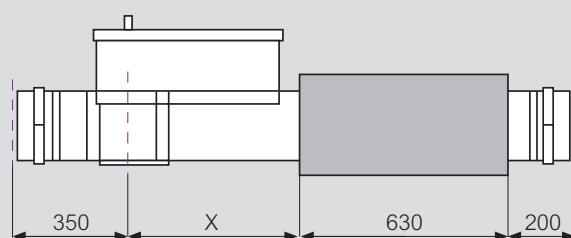
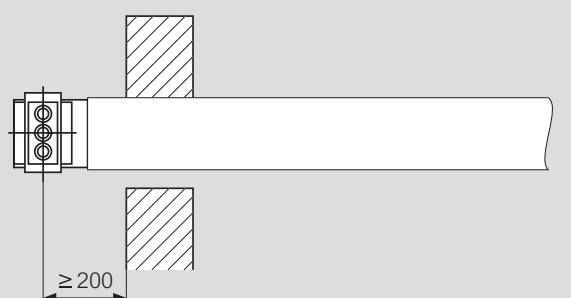
SUPER COMPACT (SCP)

mechanical design precautions

The minimum distance from the junction to the point the busbar crosses the wall or other structure must be at least 200 mm, to ensure the junction of the junctions.

In case plug-in boxes and fire barriers are required on the same element the minimum distance between the box and the partition must be taken into account, at the same time allowing for the necessary free space in the junction area and the minimum distance between the distribution outlet and the start of the element.

By taking all these variables into account, it is possible to obtain the minimum size of the element in order to be able to fit the partition and the plug-in box. The tables that follow summarise the minimum sizes.



CONNECTION TO THE BOARD

As a rule, the manufacturer of the board is responsible for connecting the connection element and the distribution busbars inside the board.

On request Legrand may develop and supply the connections, subject to all necessary details being available.

All types of connections must be agreed and checked with the board manufacturer.

Referred to Aluminium

| PLUG-IN TAP OF BOXES (X MINIMUM SIZE) | | |
|---------------------------------------|------------|--------|
| Type | Rating (A) | X (mm) |
| 1 | 63 – 160 | 520 |
| 2 | 250 – 630 | 720 |
| 3 | 125 – 400 | 620 |

Referred to Aluminium

| PLUG-IN BOXES ON THE JUNCTION | | |
|-------------------------------|------------|--------|
| Type | Rating (A) | X (mm) |
| 4/5 | 125 – 400 | 700 |
| 4/5 | 630 | 820 |
| 4/5 | 800 – 1250 | 1120 |

SHORT CIRCUIT WITHSTAND

The short circuit withstand of the connection elements depends on the connection of the busbars inside the distribution board.

The declaration of short circuit withstand for the system busbars may only be supplied by the board manufacturer. When using Legrand boards and Legrand busbar trunking system it will be possible to obtain a short circuit certification.

SUPER COMPACT (SCP)

technical information

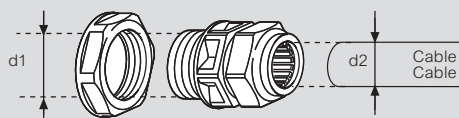
Table of comparison between boxes and cable glands (Legrand)

The following table shows the maximum number of Legrand cable glands that can be installed on Plug-in boxes using the appropriate flanges.

| COMPARISON TABLE BETWEEN Plug-in boxes AND CABLE GLANDS (LEGRAND) | | | | | | |
|---|--|--|---|--|---|---|
| | Useful dimension for the passage of the cables and flange size | M16-PG9 (63 A cable) 10 mm2 section PVC insulated one-pole cable | M20-PG13.5 (63 A cable) 10 mm2 section PVC insulated one-pole cable | M25-PG21 (250 A cable) 70 mm2 section PVC insulated one-pole cable | M32-PG29 (400 A cable) 150 mm2 section PVC insulated one-pole cable | M40-PG36 (630 A cable) 300 mm2 section PVC insulated one-pole cable |
| 63/160 A Plug-in box with section cover (Type 1/3) | 80 x 70 FL 110 x 100 | No. 10 | No. 5 | — | — | — |
| 250/630 A Plug-in box with section cover (Type 2) | 150 x 220 FL 235x 180 | No. 66 | No. 36 | No. 20 | No. 13 | No. 8 |
| 125/400 A Plug-in box on the junction (Type 4/5) | 130 x 180 FL 180 x 230 | — | No. 30 | No. 16 | No. 9 | — |
| 630 A Plug-in box on the junction (Type 4/5) | 270 x 160 FL 340 x 230 | — | — | No. 28 | No. 15 | No. 10 |
| 800/1250 A Plug-in box on the junction (Type 4/5) | 380 x 210 FL 430 x 260 | — | — | No. 57 | No. 32 | No. 18 |

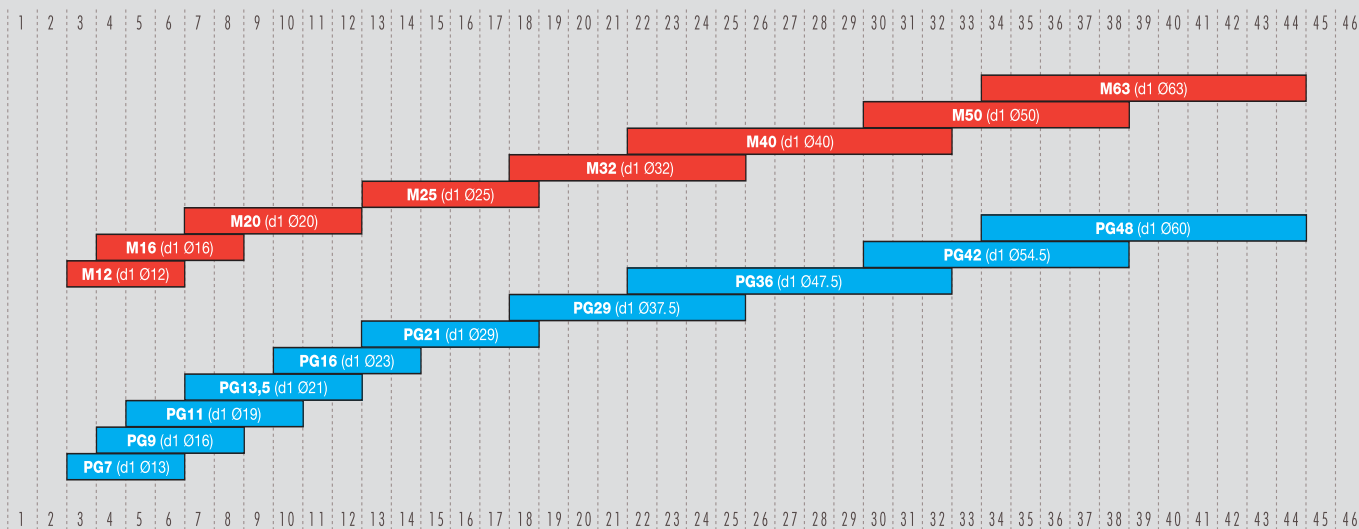
Note: The value shown on the table is the max no. of PG that may be installed in the cable flange.
For boxes with section cover the most demanding condition is considered, which means that only one of the two cable flanges is used.

Cable glands table



When choosing the cable glands, please refer to the LEGRAND catalogue

Dimension d2 Ø cable [mm]

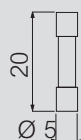


Dimension d2 Ø cable [mm]

Ceramic fuse 5 x 20

Operating features

| | | | | | |
|----------------------|-----------|-------------|--------------|---------|----------|
| $I_n = 6.3$ | $1.5 I_n$ | $2.1 I_n$ | $2.75 I_n$ | $4 I_n$ | $10 I_n$ |
| Operating time > 1 h | < 30 min | 10 ms - 3 s | 3 ms - 30 ms | < 20 ms | |



Quick fuse

- $I_n = 6.3A$
- U_e 250V ceramic fuse IEC 127
- Breaking capacity H 1500A
- Voltage drop $\Delta V = 150$ mV
- $I^2t = 48A^2s$

When choosing all fuses, please refer to the general Legrand catalogue.

CHOOSING GUIDE



SECTION CONTENT

| | |
|-----|---|
| 143 | Joule Effect Losses in Busbar |
| 144 | Overload Protection |
| 145 | Selection of the Busbar Trunking System Based on Voltage Drop |
| 146 | Short Circuit Withstand |
| 148 | Harmonics |
| 149 | IP - Degree of Protections & IK |

JOULE EFFECT LOSSES IN BUSBARS

technical information

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 a 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 one-phase regime:

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

Where:

I_b = Utilisation current (A)

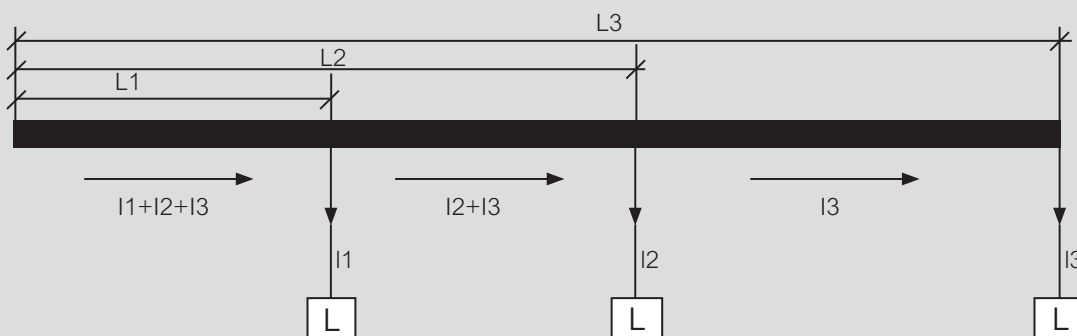
R_t = Phase resistance for unit of length of the busbar trunking system, measured at thermal regime (mΩ/m)

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 figure one has:

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

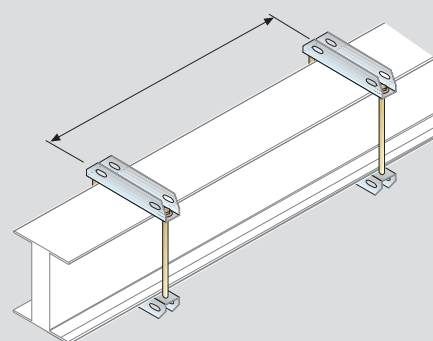
Total losses in the busbar trunking system $P_t = P_1 + P_2 + P_3$



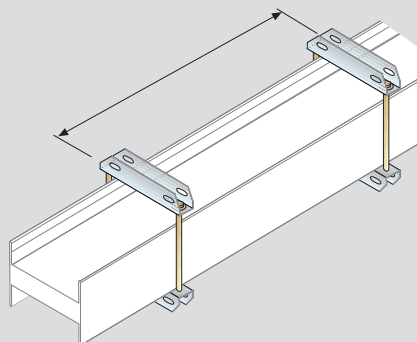
Losses based on the installation method

Thermal dispersion, rating and IP protection degree are independent from the type of installation (edgewise, flat, vertical).

This means that it is possible to install the SCP busbar trunking system as preferred, without having to consider a possible system downgrading.



Edgewise element



Flat element

OVERLOAD PROTECTION

technical information

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:

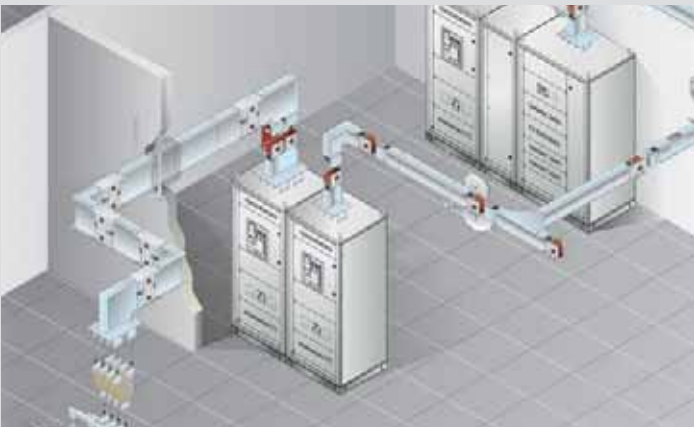
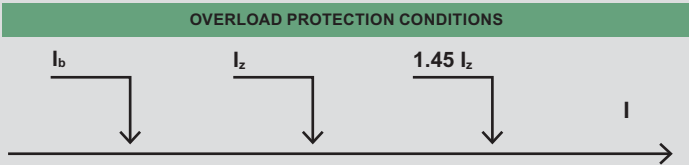
- I_b = Circuit utilisation current
- I_n = Switch rated current
- I_z = Rating at permanent cable regime

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

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

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;
 - if the trunking is powered from the centre or from both ends at the same time
- U_e = Operating voltage in [V]
- $\cos \varphi$ = Average power factor of the loads
- I_b = Operating current [A]
- α = Diversity coefficient of the loads [.]
- β = 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 will be necessary to multiply the rating value at the reference temperature by a correction coefficient referred to the final operating temperature.

All Legrand 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_1 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:

$I_z = I_{z0} \cdot Kt$

Where:

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

| KT CORRECTION COEFFICIENT FOR AMBIENT TEMPERATURE OTHER THAN 40 °C | | | | | | | | | | |
|--|------|------|------|------|-------|----|-------|------|------|------|
| Ambient temperature [°C] | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| kt thermal correction factor [.] | 1.15 | 1.12 | 1.08 | 1.05 | 1.025 | 1 | 0.975 | 0.95 | 0.93 | 0.89 |

SELECTION OF THE BUSBAR TRUNKING SYSTEM BASED ON VOLTAGE DROP

technical information

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 ($\cos\varphi_m$) not lower than 0.8 the voltage loss can be calculated using the following formulas:

THREE PHASE SYSTEM

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

ONE-PHASE SYSTEMS

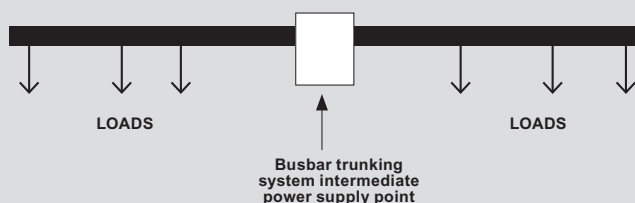
$$\Delta v = \frac{b \cdot 2 \cdot I_b \cdot L \cdot (R_t \cdot \cos\varphi_m + x \cdot \sin\varphi_m)}{1000}$$

The percentage voltage drop can be obtained from:

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

Where V_r is the system rated voltage.

In order to limit the voltage drop in case of 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

In case 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 can be calculated using the following formula, on the assumption (generally verified) that the section of the busbar trunking system is consistent:

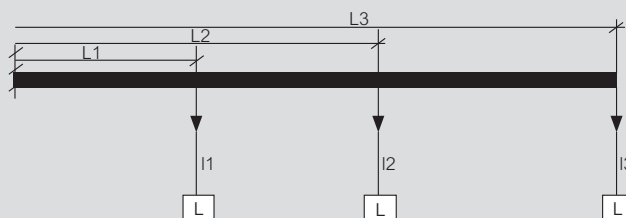
$$\Delta v = \sqrt{3} [R_t (I_{L1} \cos\varphi_1 + I_{L2} \cos\varphi_2 + I_{L3} \cos\varphi_3) + x (I_{L1} \sin\varphi_1 + I_{L2} \sin\varphi_2 + I_{L3} \sin\varphi_3)]$$

In general terms this becomes:

$$\Delta v = \frac{\sqrt{3} (R_t \cdot \sum I_i \cdot L_i \cdot \cos\varphi_{mi} + x \cdot \sum I_i \cdot L_i \cdot \sin\varphi_{mi})}{1.000}$$

If the three-phase system and the power factor are not lower than $\cos\varphi = 0.7$, the voltage loss may be calculated using the voltage drop coefficient shown in Table 1.

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



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

Table 1 - The distribution factor of the current "b"

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

Example: SCP 2000A AI for riser mains feed

I_b = 1600A operating current
 b = 1/2 load evenly distributed
 k = 27.3 see technical data table (SCP 2000 A AI $\cos\varphi = 0.85$)
 $\cos\varphi$ = 0.85
 L = 100 m line length
 V_n = 400 V operating voltage

$$\Delta v\% = 1/2 \cdot \frac{27.3 \cdot 10^6 \cdot 1600}{100 \cdot 400} \cdot 100 = 1.10\%$$

Legend:

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)
 $\cos\varphi_m$ = Average power factor of the loads
 x = phase reactance by unit of length of the busbar (mΩ/m)
 R_t = phase resistance by unit of length of the busbar (mΩ/m)
 $\cos\varphi_{mi}$ = i-th load average power factor
 I_i = i-th load current (A)
 L_i = distance of the i-th load from the origin of the busbar trunking system

SHORT CIRCUIT WITHSTAND

technical information

The CEI 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 in fact to correctly select 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, or/and 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 in 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 is the power, the higher is the current;
- length of the line upstream

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

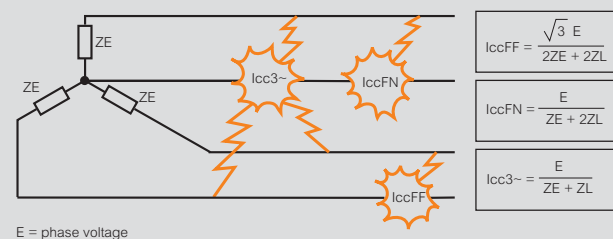
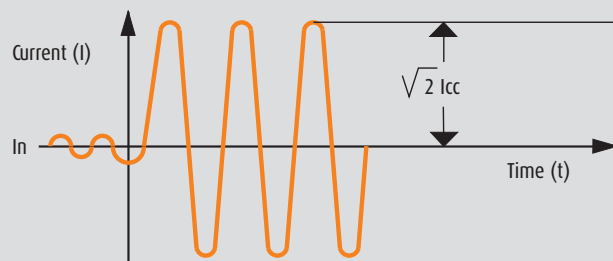
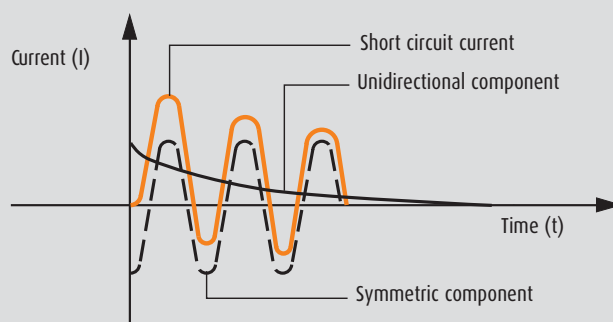
- phase-phase;
- phase-Neutral;
- balanced three-phase (most demanding condition).

The formula for the calculation of the symmetric component is:

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

Where:

- **E** is the phase voltage;
- **ZE** is the secondary equivalent impedance of the TRANSFORMER measured between the phase and the Neutral;
- **ZL** is the impedance of the phase conductor only.

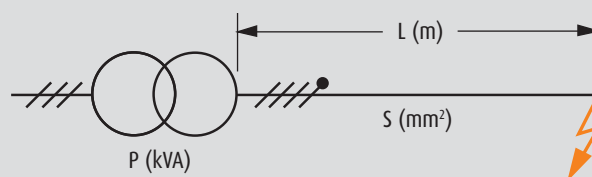


ANALYTICAL DETERMINATION OF SHORT CIRCUIT CURRENTS

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

| ALUMINIUM | | | | |
|------------|--------------------------------|--------------------------------|------------------------------|------------------------------|
| Rating (A) | kA three-phase I _{cw} | kA three-phase I _{pk} | kA one-phase I _{cw} | kA one-phase I _{pk} |
| 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 three-phase I _{cw} | kA three-phase I _{pk} | kA one-phase I _{cw} | kA one-phase I _{pk} |
| 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 |

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, sometime 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 three-phase lines), one-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), which frequency a whole multiple of the frequency of the wave shape observed.

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

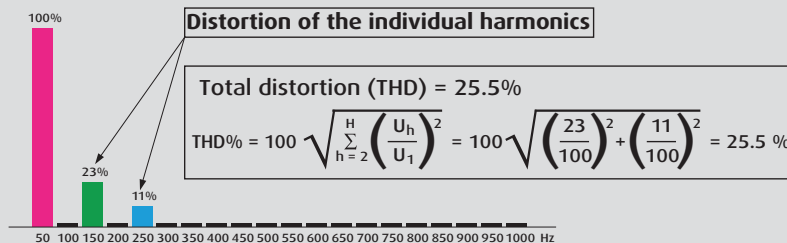
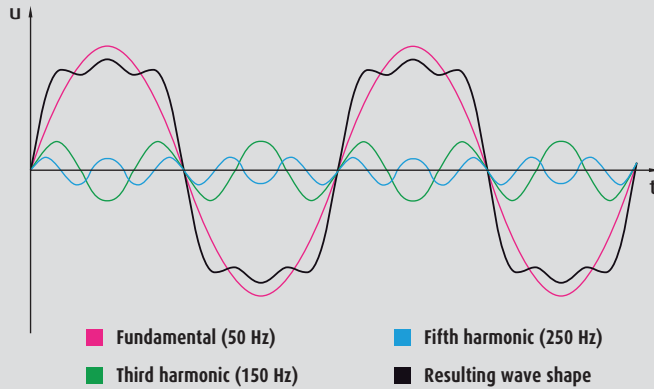
The presence of current harmonics represents an important problem, causing overload conditions both on phase conductors, and on any Neutral conductor, and results in the reduction of the conductor permitted load.

CHOICE OF THE RATING WHEN IN THE PRESENCE OF HARMONICS

When in the presence of harmonics, and when using the chosen Int rated current, the SCP busbar to be used shall have the rating specified in the table by side.

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

Measurement of harmonic distortion carried out with a network analyser



DEGREES OF PROTECTION








IP: degree of protection provided against intrusion

The protection enclosures are classified (IEC 60529) in according to their degree of protection against weather conditions and external agents. The degree of protection is indicated by two digits (protection against solid bodies and liquids) following the symbol IP.

To increase the ease of choice of the most suitable busbar, in according to installation requirements, below there is a summary of their performance, based on the IP degree of protection according to the IEC 60529 standard.








1st digit IP

Protection against penetration of solid bodies

| | |
|---|---|
|  | 0 No protection |
|  | 1 Protection against solid bodies larger than 50 mm (e.g.: accidental contact) |
|  | 2 Protection against solid bodies larger than 12 mm (e.g.: finger) |
|  | 3 Protection against solid bodies larger than 2.5 mm |
|  | 4 Protection against solid bodies larger than 1 mm |
|  | 5 Protection against dust |
|  | 6 Complete protection against dust |











2nd digit IP

Protection against penetration of liquids

| | |
|---|--|
|  | 2 Protection against drops of water falling up to 15° from the vertical |
|  | 3 Protection against drops of water up to 60° from the vertical |
|  | 4 Protection against sprays of water from all directions |
|  | 5 Protection against jets of water from all directions |
|  | 6 Protection against jets of water (similar force to heavy seas) |
|  | 7 Protection against the effects of immersion |
|  | 8 Protection against effects of immersion under pressure |

IK: degree of protection of equipment to mechanical impact.

Standard IEC 62262 defines an IK code that characterises the aptitude of equipment to resist mechanical impacts on all sides

| IK | Test | Impact energy (In joules) |
|-------|--|---------------------------|
| IK 00 | | 0 |
| IK 01 |  | 0.15 |
| IK 02 |  | 0.2 |
| IK 03 |  | 0.35 |
| IK 04 |  | 0.5 |
| IK 05 |  | 0.7 |
| IK 06 |  | 1 |
| IK 07 |  | 2 |
| IK 08 |  | 5 |
| IK 09 |  | 10 |
| IK 10 |  | 20 |

ELECTROMAGNETIC EMISSIONS AND BUSBAR



SECTION CONTENT

| | |
|-----|-----------------------------------|
| 151 | Measurement of Magnetic Induction |
| 153 | Magnetic Induction Graphs |

MEASUREMENT OF MAGNETIC INDUCTION

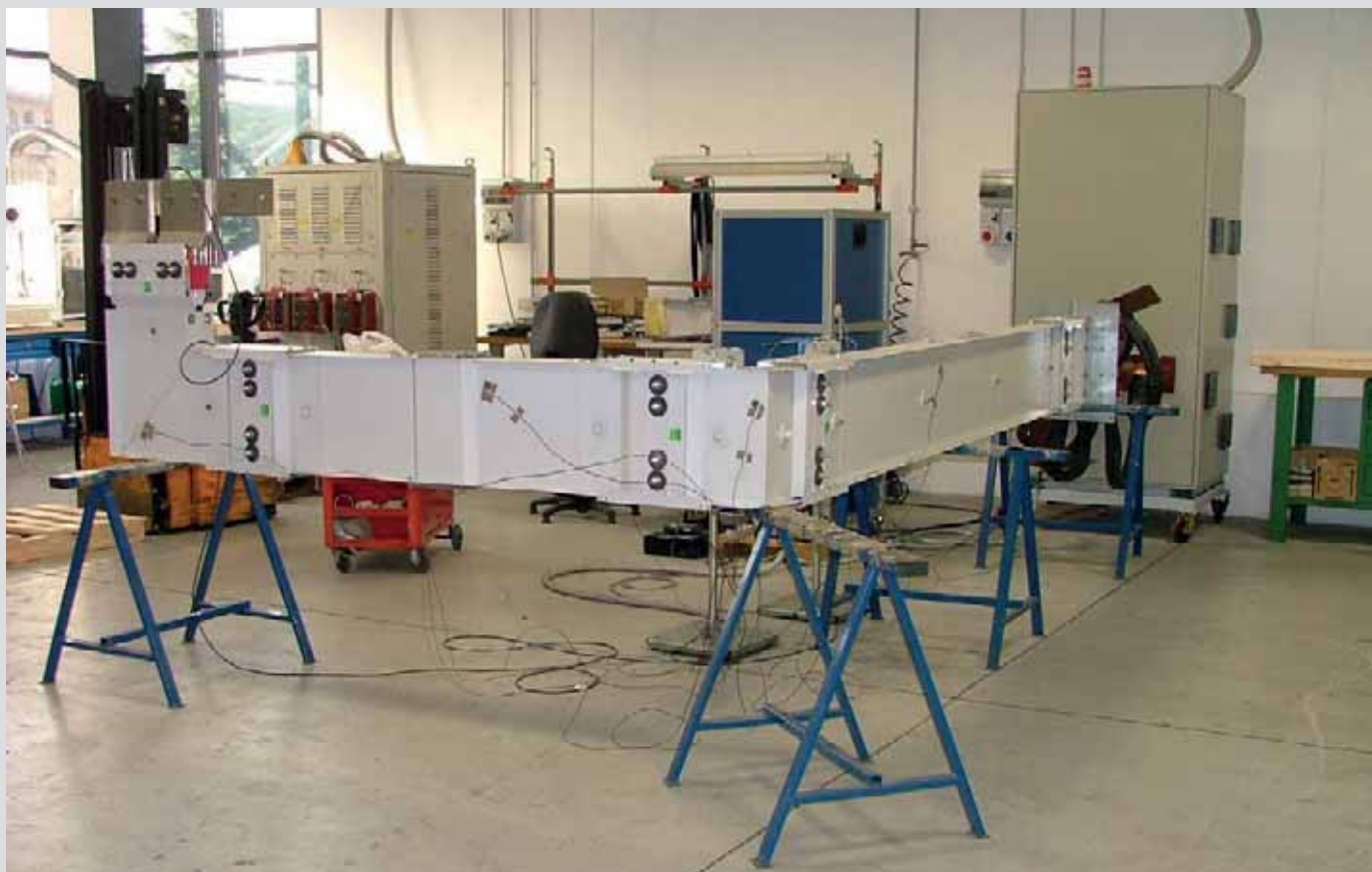
Since 1994, with a study carried out by Chalmers University of Technology of Goteborg, Legrand has taken an interest in the issues linked with the electromagnetic emissions in their own products, keeping at the front of the legislative directive of the latest years, which only recently have imposed quality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

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

The solution of 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 one 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 the 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 structure making up the casing of the busbar trunking system is capable of reducing most of the magnetic field, which otherwise would spread through the surrounding environment.



The Legrand lab during the tests for the approval certification of SCP busbar trunking systems

MEASUREMENT OF MAGNETIC INDUCTION

The lab tests carried out on the products 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 μT .

With Legislative Decree DPCM dated 8/7/2003, Italian law set the first exposure limit at 100 μT .

In addition, in locations where attendance is expected for no less than four hours a day, an attention value of 10 μT has been set, to avoid possible long term effects on health.

In the decree, the 3 μT 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 μT as the maximum permitted threshold in certain structures, like 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.

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 CEI 211-6 standard.

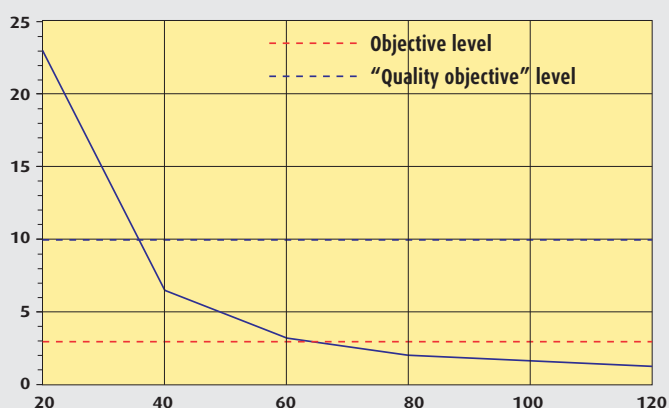
The measurements obtained on aluminium SCP busbar trunking systems with ratings of 2500 A (carried out in compliance with the requirements of the technical product standard CEI EN 61439-6), show that the magnetic induction generated by the busbar is in the range of 1.5 - 2 μT at a distance of one metre from the busbar itself.

These values also apply near the electro-mechanic 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 CEI 211-6 standard)

| Source | Magnetic induction (μT) | 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 bust |
| 100 W welding machine | 14.5 | on the bust |
| 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 |

B [μT]



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

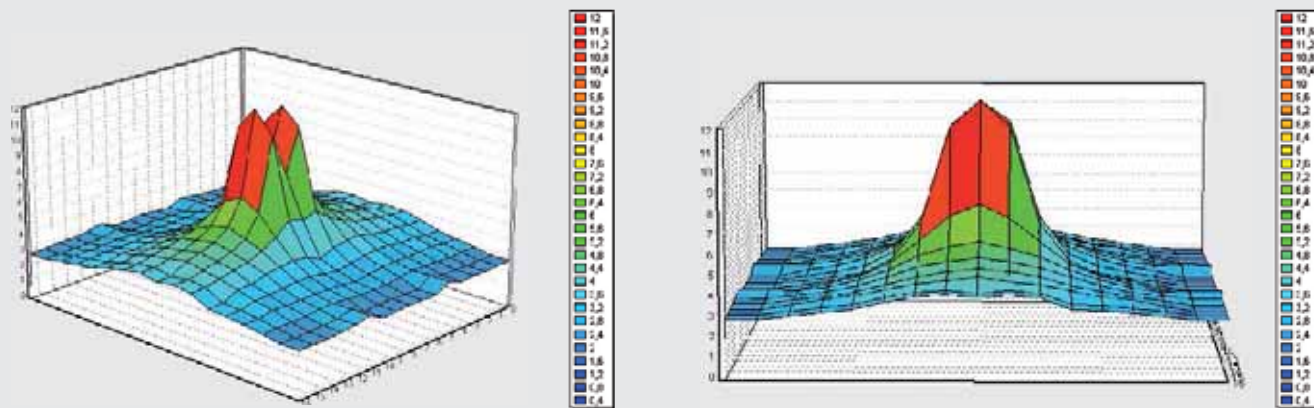
MAGNETIC INDUCTION GRAPHS

AT 60 cm FROM THE BUSBAR

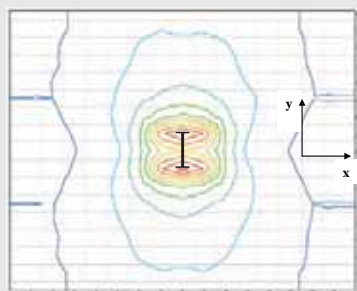
The graphs shown refer to the measurements carried out on the Aluminium SCP prefabricated electric busbar with rated load of 2500 A, crossed by a 2500 A current.

The measurements carried out at 60 cm from the junction are to be considered as made higher due to the magnetic induction generated by the busbar power supply: due to the intrinsic geometry of the measurement lab 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.



Three-dimensional development of magnetic induction around the busbar at 60 cm from the junction.



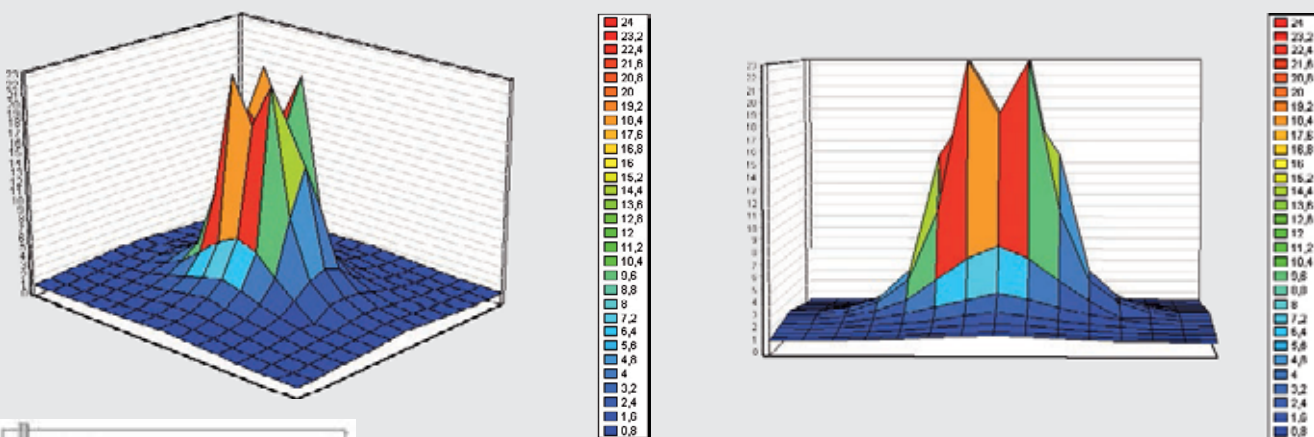
Two-dimensional map of the magnetic induction around the busbar at 60 cm from the junction. At the centre of the graphic is a schematic representation of the busbar

Note: the cells making up the measurement grid are 20 cm squares

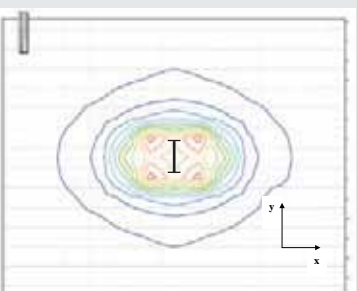
As it can be seen on the graph, up to a distance of 40 cm approximately from the axis of the busbar, the field appears generated by two separate sources. This is due to the fact that the busbar being analysed consists of two series of busbar conductors set in parallel at a distance of approximately 5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

NEAR THE JUNCTION

It is considered important to show, side by side with the results relating to straight elements, also the results of the measurement carried nearby the electro-mechanic junction of the busbar element. 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.



Three-dimensional development of magnetic induction near the joint



Two-dimensional map of magnetic induction near the junction. At the centre of the graphic is a schematic representation of the busbar

INSTALLATION AND CHECKS



SECTION CONTENT

- 155 Assembly Checks Before Operation
- 157 Regular Checks

ASSEMBLY CHECKS BEFORE OPERATION

Once the line assembly has been completed, before starting operation of the system it is recommended that some checks are carried out, to ensure correct installation and integrity of the components. The checks must be carried out by competent and suitably trained personnel, following the requirements of CEI 11-27 and EN 50110- 1:2004- 11 (CEI 11-48) standards, or equivalent international standards or specifications from individual countries.

BUSBAR CHECKS

Junctions

Open a sample (10%) of the mechanical junctions.

Check the following:

- 1) Correct assembly direction of the Monobloc and correspondence of mechanical positioning marks (pins and lines) In case of wrong positioning, remove the Monobloc and reassemble correctly after checking its integrity. Otherwise, fully replace the Monobloc.
- 2) Integrity of the insulating parts, paying particular attention to breaks and chipping. Check for any dust or dirt. In case of damaged insulating parts, replace the whole Monobloc. In case of dust and dirt, clean as necessary.
- 3) Ensure that the Monobloc is correctly centred in relation to the element busbar conductors. In case of wrong positioning realign as necessary, after checking the Monobloc for integrity.
- 4) Check the torque of the self-shearing bolts (80-90 Nm) using a calibrated torque wrench. This check must be carried out with the line at ambient temperature. If the torque is lower than required (below the required value), adjust as necessary.

Connection to the control panel

On the control panel connection carry out the following checks:

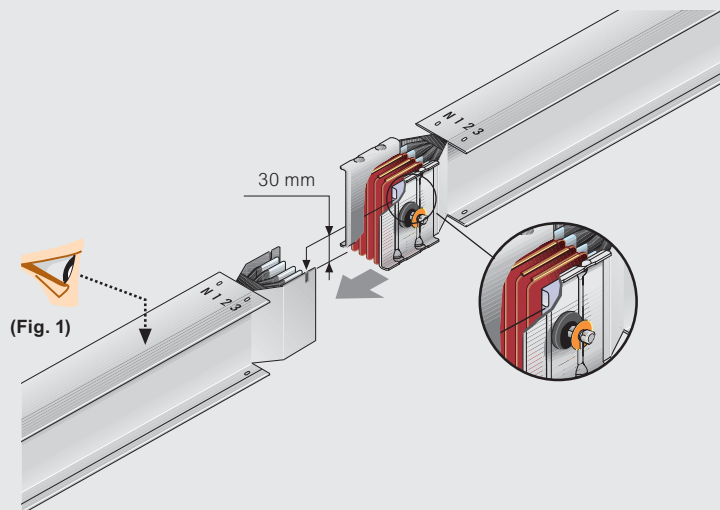
- 1) The distance between busbar conductors with different power must exceed 40 mm. In case of shorter distance, contact the Legrand System Development Office for assessing the possible use of suitable insulating material.
- 2) Check the connection screws for correct torque values (value required 85 Nm for M12, 100 Nm for M14, 120 Nm for M16, 170 Nm for M18, 25 Nm for M8 and 50 Nm for M10). The above checks must be carried out by qualified personnel with suitable technical training, and having control duties/responsibilities during the installation activities.

Electric safety tests

Carry out all the tests required by the applicable technical installation regulations, such as tests on the insulation between the phases and towards the earth at 1000 V, with minimum value of 100 MOhm for each line section. If the insulation value is lower than 100 MOhm, it will be necessary to carry out a full system check, starting from the integrity of the insulating parts of the individual Monoblocs. If insulation is still insufficient, split the system in two sections and check each section individually to identify the element with low insulation. Continue splitting the system into further sections if insulation remains insufficient.

Thermal checks

The measurement of temperatures may be carried out using contact thermal sensors, optical pyrometers, or thermo-chambers. After leaving the system in operation at maximum operating current for at least six hours, carry out a thermal measurement. Affix labels on the hot points and mark them with progressive numbers to identify the different elements. Repeat the thermal measurements on the labels.



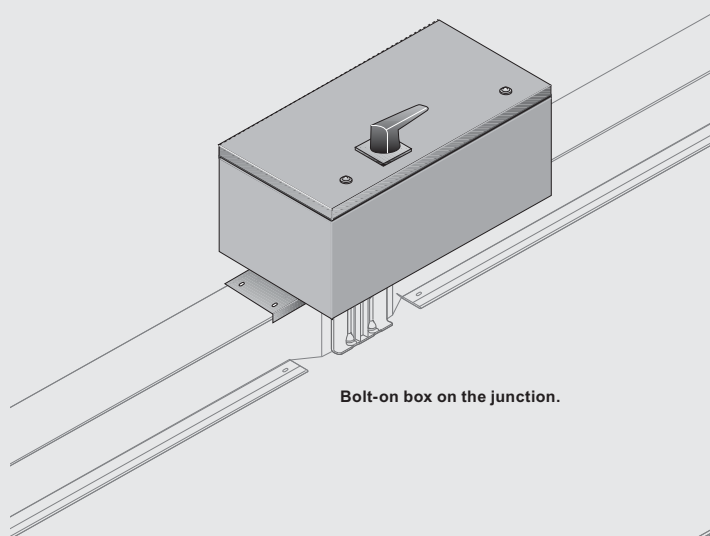
ASSEMBLY CHECKS BEFORE OPERATION

CHECKS ON Plug-in boxes

Tests to be carry out with the system voltage disconnected and after connecting to the earth the phases downstream the plug-in box, in order to discharge any static charges that may be present downstream the circuit (with an insulated device).

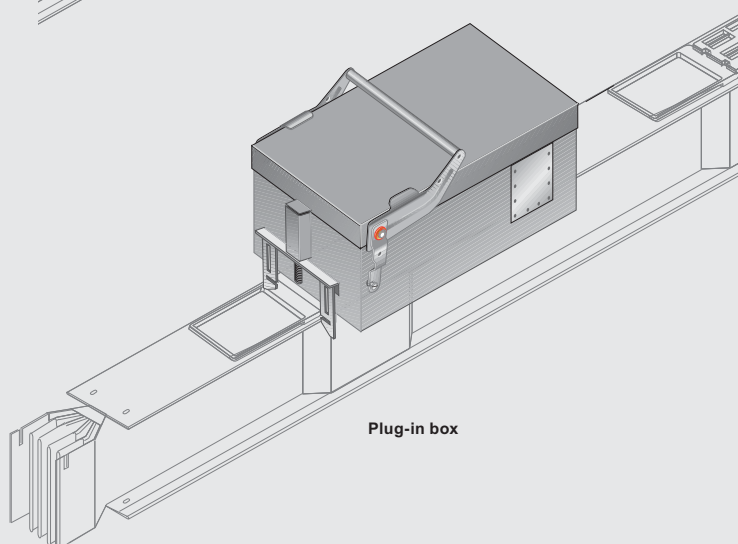
Bolt-on box type

Carry out the same checks required for junctions. Check the torque of the screws connecting the electro-mechanic junctions and the busbar conductors. If necessary, tighten the connection screws again.



Plug-in box type

Check the contact resistance between the clamp upstream the protection device and the corresponding busbar conductor on the previous window. In case of resistance over 100 μOhm , the box may have been fitted incorrectly. Remove the box, check the status of the clamp block and the outlet on the element. If the outlet is broken and the contacts have moved back inside the clamp block, it will be necessary to check insulation between the phases of the system, replace the box, and identify the distribution outlet as non-usable. Fit the new box on a different outlet. Do not use the damaged one.



Thermal checks

Carry out a thermal check on the cover near the lock. This can be carried out using contact thermal sensors, optical pyrometers or thermo-chambers. The measurement must be carried out on boxes that have been in operation for at least six hours at regime conditions. Indicate the values on the attached form together with the ambient temperature and the operating current.



REGULAR CHECKS

These are regular checks to be carried out after the first year the line has been in operation. Subsequently, the same checks should be carried out every two years.

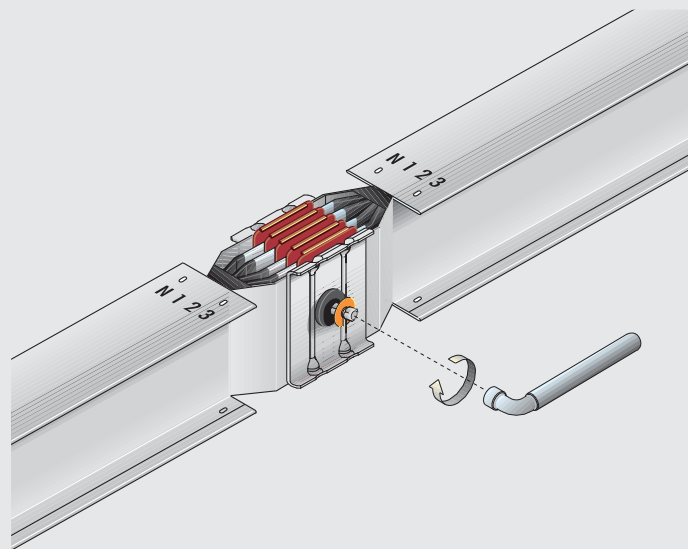
BUSBAR CHECKS

Thermal checks

With the system operating at maximum operating current for at least six hours, carry out a thermal measurement, particularly on the points of the labels applied during installation. If the relative overtemperature detected (DT) exceeds 55 K, or deviates of more than 15 K from the temperature measured during the checks carried out when the line was installed, contact Legrand Technical support. The measurement of temperatures may be carried out using contact thermal sensors, optical pyrometers, or thermo-chambers.

Junctions

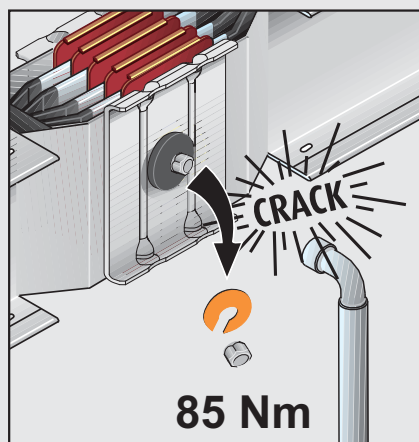
Open a sample (10%) of the electro-mechanic junctions.



On each electromechanical junction check the following:

- 1) Integrity of the insulating material, with particular attention to any breaks and colour alteration. If any are present, fully replace the monobloc.
- 2) Ensure that the protection flanges of mechanical junctions are free from any traces of water, lime scale, or foreign material (dust, dirt, etc.). If this is the case, also check the condition of the busbars near the Monobloc. Dry any wet parts using hot air at a temperature not exceeding 80 °C, and remove any residual with bland reactants (e.g. trichloroethylene) that will not attack or cause abrasions to the surface treatment (galvanic, tin), or the contact surface (Copper).

- 3) Correct adhesion of the Monobloc to the busbar conductors (if necessary using a 0.05 mm feeler), and full contact of conductor parts.
- 4) Check the torque of the self-shearing bolts using torque wrench calibrated at 85 Nm. This check must be carried out with the line at ambient temperature. In case of values lower than the required ones adjust as necessary (85 Nm).



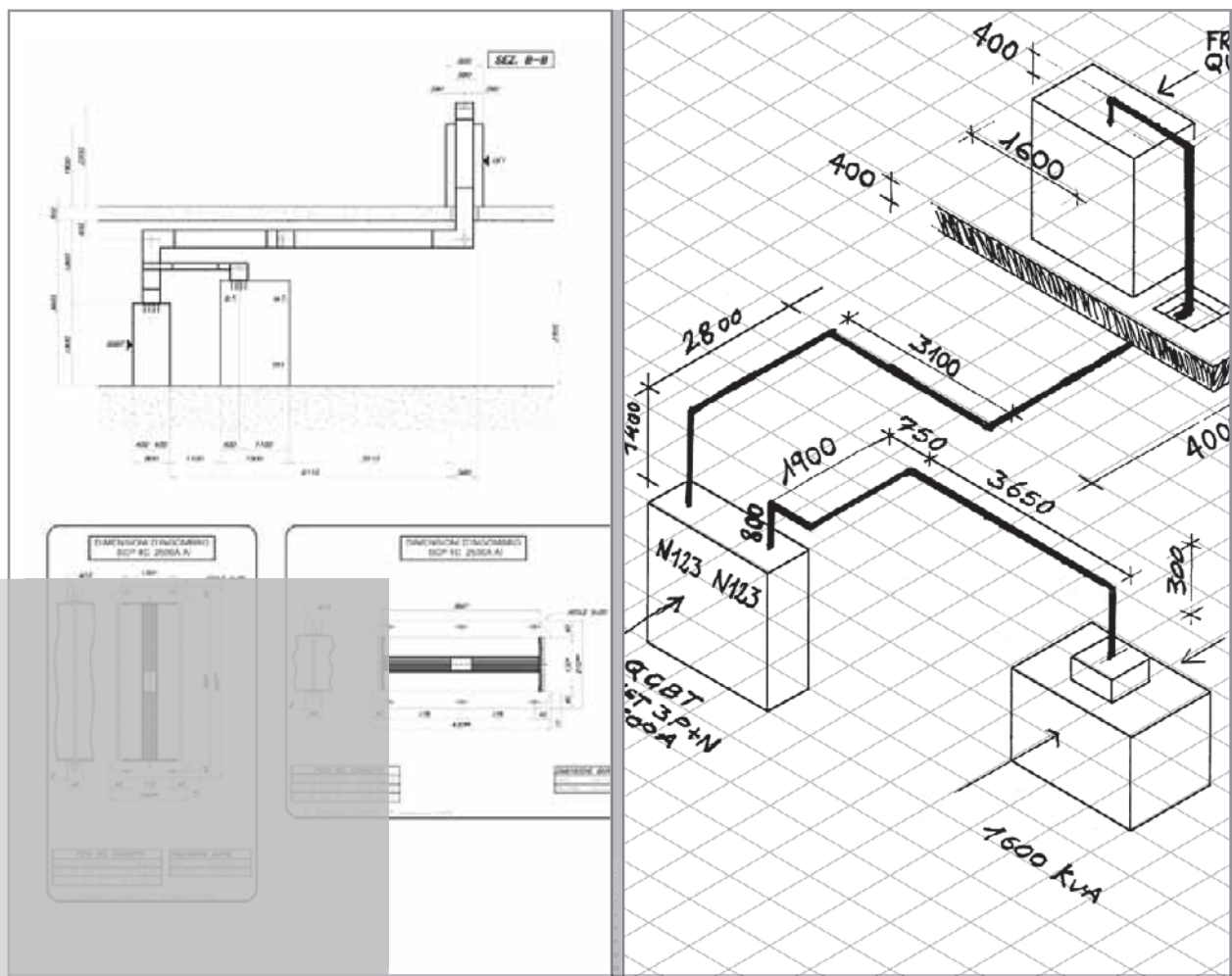
- 5) Insulation tests at 1000 V, with minimum value 100 MOhm, for each insulated section of the line. The insulation test must be carried out between phase and phase, phase and neutral, and phase and casing for each single phase. If this test is unsuccessful, identify the faulty line section and replace or carry out further checks as necessary.

In case of negative results, extend the checks to all junctions and contact Legrand Technical support.

CHECKS ON PLUG-IN BOXES

It is recommended that these checks are carried out every year. Carry out a thermal check on the cover near the lock. This can be carried out using contact thermal sensors, optical pyrometers or thermo-chambers. The measurement must be carried out on boxes that have been in operation for at least six hours at regime conditions. Indicate the values on the attached form together with the ambient temperature and the operating current. If the relative temperature detected (DT) exceeds 55 K or deviates of more than 15 K from the temperature measured during the checks carried out when the line was installed, contact Legrand Technical support. Check the connection screws for correct torque.

DESIGN EXAMPLE



SECTION CONTENT

- 159 Design Example
- 160 Data Center: example of application

DESIGN EXAMPLE

technical information

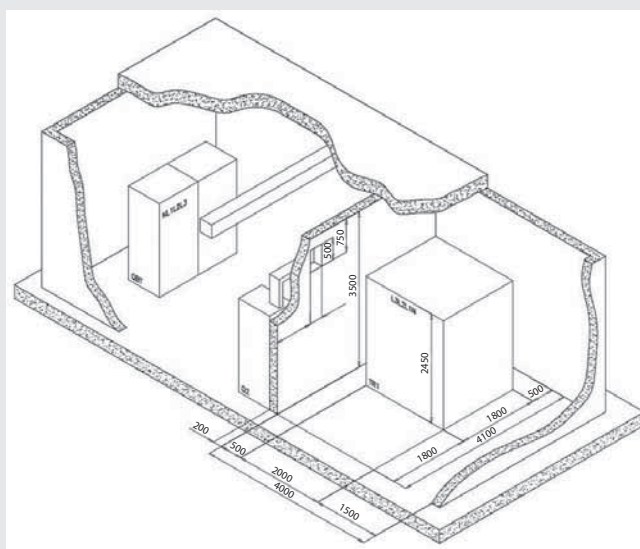
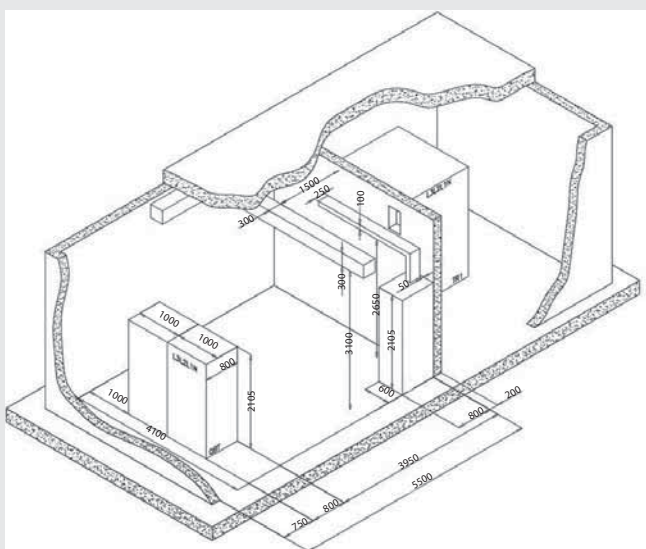
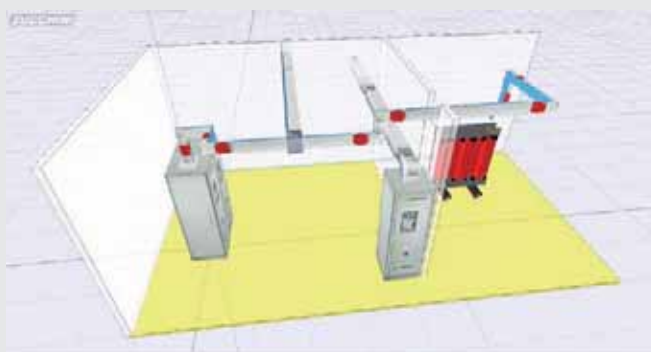
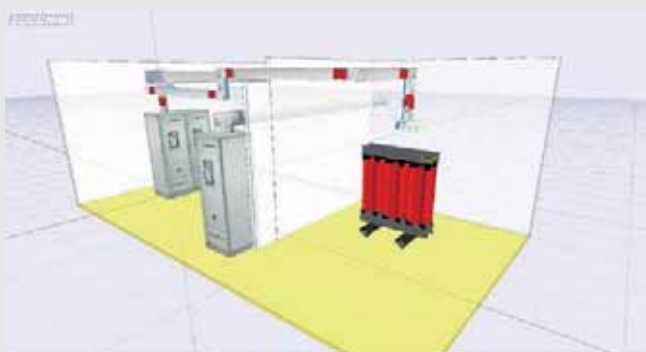
Thanks to the flexibility of the SCP line, the possibility of customising the system according to one's own requirements. It is therefore possible to request special products such as continuous current or particular frequency (60Hz) distribution systems, or, as it is the case for the food sector, with stainless steel casing.

Possible special requirements:

- 200% neutral
- 5 conductor version with separate FE earth
- 3 conductor version
- painting in customised colour
- fitting with Al/Cu earth conductors
- F class insulation
- arrangement for continuous current systems
- stainless steel casing
- Aluminium casing

Below is the example of a system path.

The figures below show the initial situation, listing all the measurements that must be known.

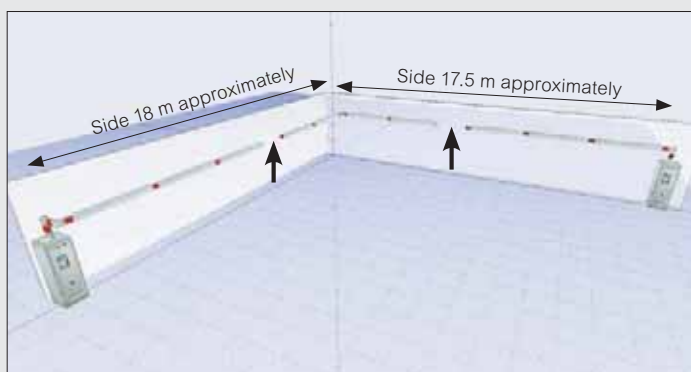


■ PATH NOT COMPLETELY DEFINED

If the path cannot be defined with sufficient degree of precision, some parts may be left out and ordered at a later stage.

In order to simplify the process of taking the necessary measurements for the definition of the completion items, it is recommended that the supply of all sections with direction changes is defined from the start, leaving the completion of straight section to a later stage.

To obtain the correct measures of the elements to be ordered see page 124.



NOTE: The yellow arrows indicate the elements that can be dealt with at a later stage, and the correct layout of those supplied initially.

DATA CENTER

real example of Legrand busbar applied in a Data Center



Year of installation: **2013**

Building with **3 floors**

MATERIAL USED FOR SUPPLY ELECTRICAL POWER ENERGY:

Number of total busbar lines: **54**

6 lines (SCP 3200A AI – 3P+N – IP55)

Dedicated to supply electrical energy

54 used SCP PLUG-IN BOX 630A SWITCH DPX

48 lines (MR 400A AI – 3P+N – IP40)

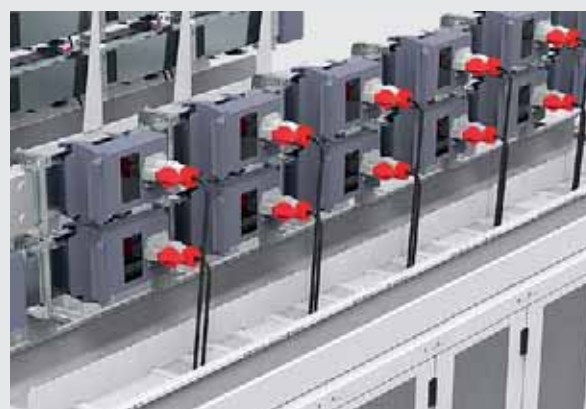
16 lines for floor

Dedicated to distribute the electrical energy at different rack present in data center

1194 used MRF PLUG-IN BOX 63A EMPTY

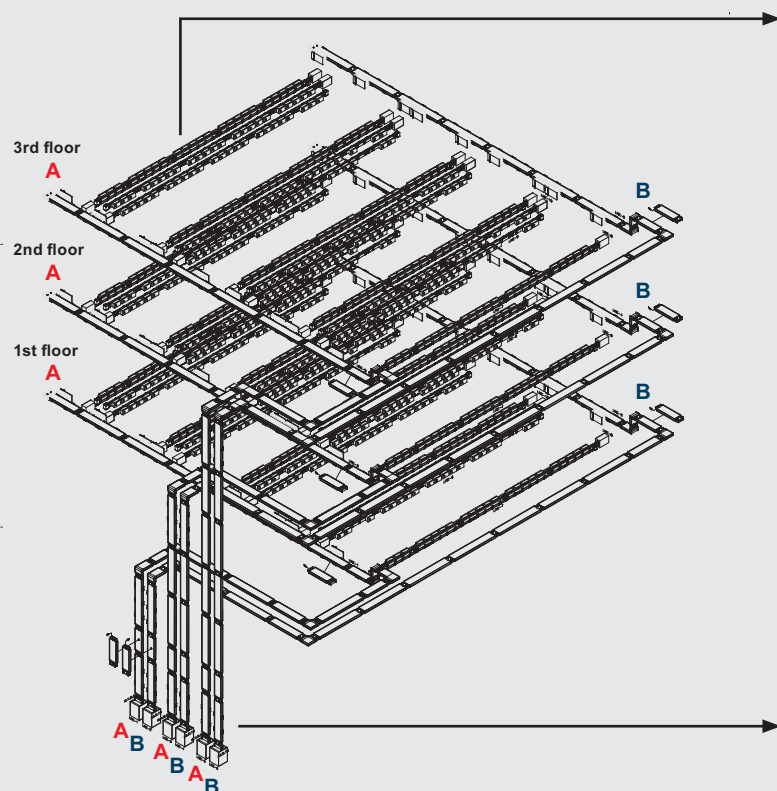


MR 400 A AI
3P + N - IP40



A **B** **A** **B**

A: power supply line
B: emergency line



SCP 3200A AI
3P+N – IP55

NOTES

NOTES



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