Zucchini

Busbar Trunking System

Low-medium power

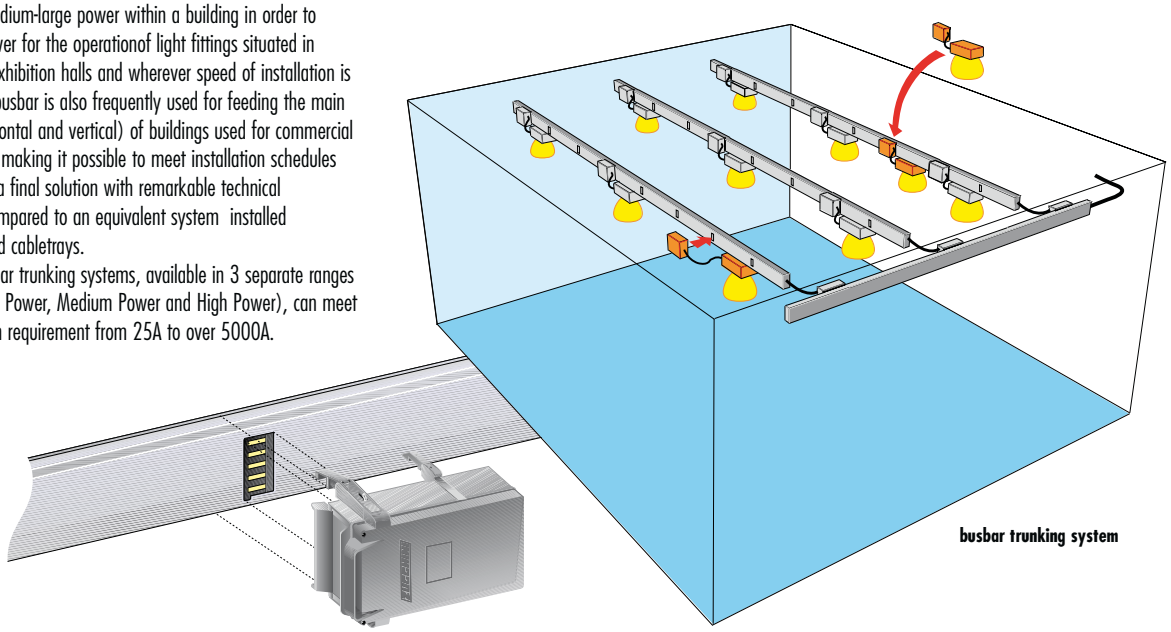
ZUCCHINI BUSBAR TRUNKING SYSTEMS | LOW-MEDIUM POWER

legrand®

BASIC CONCEPTS FOR BUSBAR TRUNKING SYSTEMS

BUSBAR TRUNKING SYSTEMS

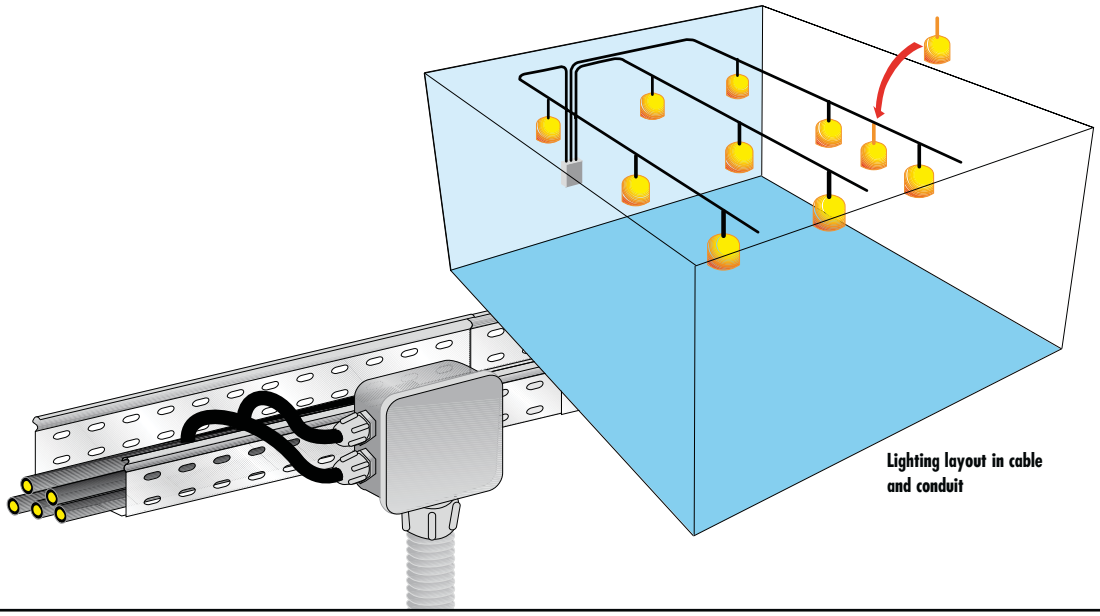
A busbar trunking system is the most advanced solution for distributing medium-large power within a building in order to supply the power for the operationof light fittings situated in warehouses, exhibition halls and wherever speed of installation is required. The busbar is also frequently used for feeding the main incomer (horizontal and vertical) of buildings used for commercial activities, thus making it possible to meet installation schedules and providing a final solution with remarkable technical advantages compared to an equivalent system installed with cables and cabletrays.
Zucchini's busbar trunking systems, available in 3 separate ranges of power (Low Power, Medium Power and High Power), can meet any installation requirement from 25A to over 5000A.



busbar trunking system

Flexible

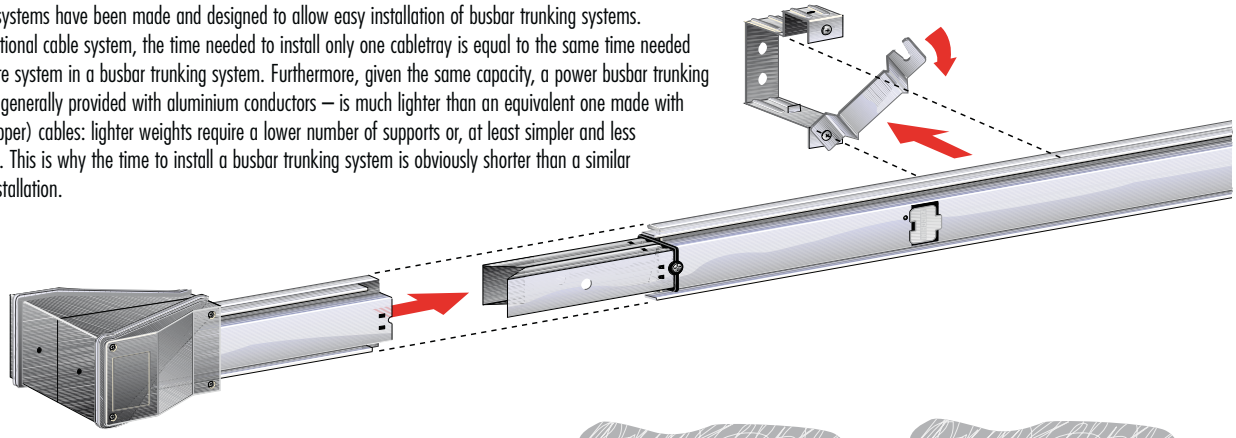
With the use of tap-off outlets situated on the straight lengths, the busbar trunking systems provide high levels of flexibility both during the planning stage (in the engineering department) and during the installation of the system (installer), and the inevitable modifications of the electrical system to meet the end-user's changing needs.
Tap-off boxes can be inserted and removed from their tap-off outlet when the busbar is live and can be inserted in another tap-off outlet, hence avoiding downtime.
The engineer in charge of designing the busbar trunking system does not necessarily need to know the exact position of machines or the electric loads that will be installed in the building.
The designer's plan will take into consideration the end-customer's modifications and variations which will be determined during the operation of the system. No more point-to-point connections but just one power distribution system where power can be tapped-off wherever there is a free tap-off point.
Due to its flexible and long-lasting features, the installation of Zucchini's busbar in a building allows easy modification of its use within business premises, thus providing benefits even to those who manage and rent out different parts of the building.

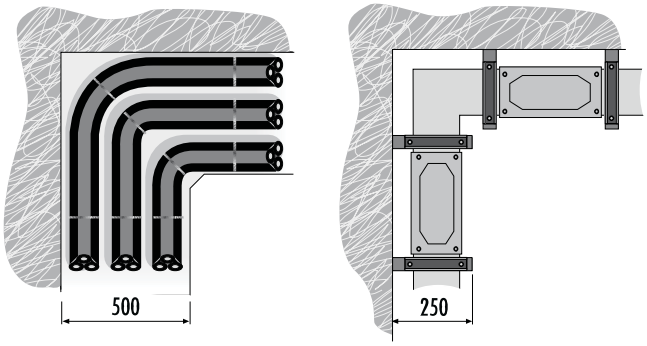


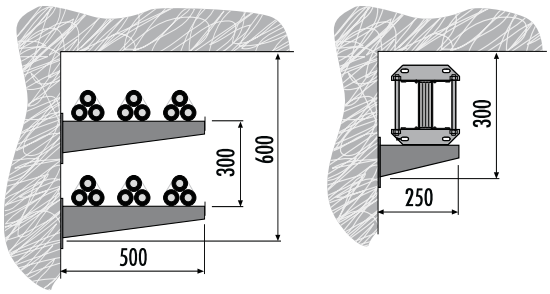
Lighting layout in cable and conduit

Quick installation

Zucchini's jointing systems have been made and designed to allow easy installation of busbar trunking systems. When using a traditional cable system, the time needed to install only one cabletray is equal to the same time needed to install a complete system in a busbar trunking system. Furthermore, given the same capacity, a power busbar trunking system – which is generally provided with aluminium conductors – is much lighter than an equivalent one made with cabletrays and (copper) cables: lighter weights require a lower number of supports or, at least simpler and less expensive supports. This is why the time to install a busbar trunking system is obviously shorter than a similar traditional cable installation.





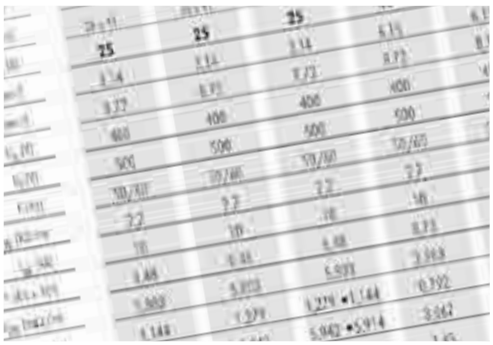


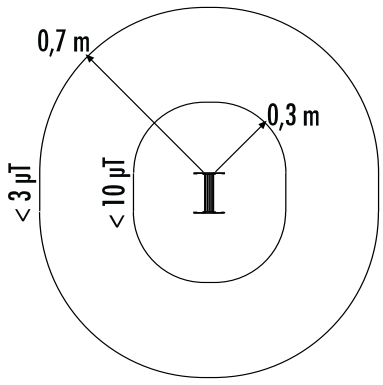
Reduced dimensions

The overall dimensions of busbar trunking systems are generally smaller than an equivalent traditional cable installation, especially when the currents to be carried exceed 1000A and when several cables in parallel are required to ensure such ratings. Further advantages can be found in route changes, where cables have a minimum bending radius to avoid damage to the insulation; the busbar trunking systems allow route changes with 90° angles, thus maximising the use of the reduced spaces available within technical premises.

Easy to rate

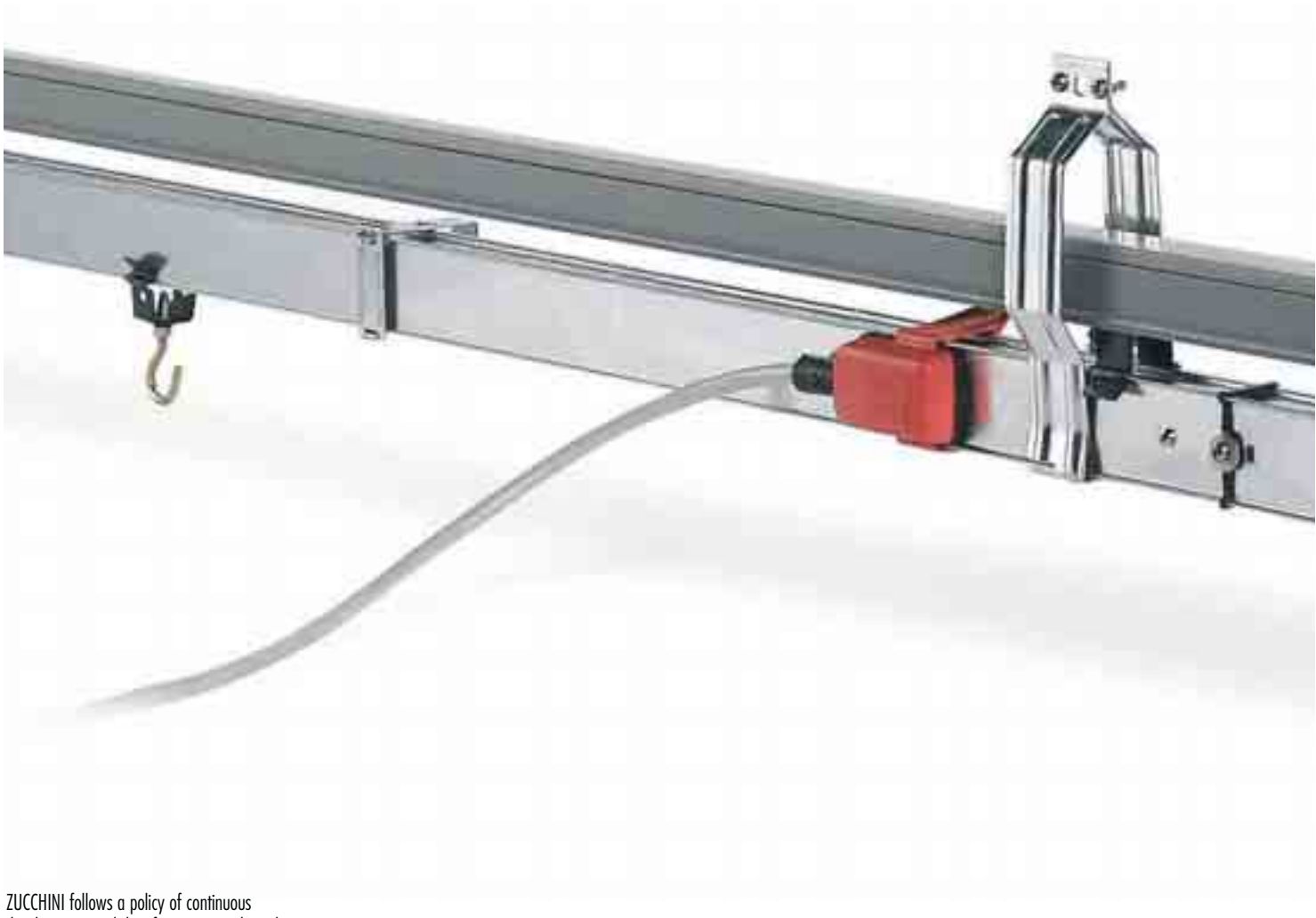
The electrical rating of busbar trunking systems is carried out by Zucchini in compliance with the product Standards. The rated current of Zucchini's busbars is guaranteed for room temperatures at 40°C (the Standard requires 35°C). After choosing the appropriate current requirements for the busbar, it is extremely easy to check the voltage drop as well as the protection against overcurrents. To do so, use the technical charts available for all Zucchini product lines. These charts basically specify: the short-circuit currents and the peak current withstand of the busbar while waiting for the protection device to start operating upstream, the voltage drop of the average cosφ of the loads, the losses as well as a series of additional data (R, X, Rpe, etc.) which allow the designer to make calculations using the results from tests carried out in accredited LOVAG laboratories for heat and short-circuit tests which have been used to certify all of our ranges. With busbar trunking systems, the protection device is located close to the load (decentralised protection); as a result, protection devices such as thermal magnetic circuit breakers, fusecarriers and motorised switches can be housed in the tap-off boxes, thus allowing easy and effective management of the system.





Fail-safe behaviour

Due to its particular features, a busbar trunking system does not normally use great amounts of insulating plastic material potentially dangerous material in case of fire. Moreover, plastic material used for the insulating parts of busbar trunking systems are always of the self-extinguishing type (from V0 to V2) and generally have low smoke emission (Halogen Free). Another advantage of the busbar trunking system is in its low electromagnetic emission compared to that of an equivalent traditional cable installation: as a result, the steel casing of the busbar serves as a shield for the electric field (shielded enclosure) and the sandwiching of the phase conductors considerably reduces the emission of the magnetic component, too. The Italian law, 8/7/2003 DPCM (Prime Ministerial Decree), sets 10 µTs as the "target level" and a maximum limit of 3 µT as the "quality level". Tests carried out on one of Zucchini's 2500A SCP busbars at full rated current show that the emission of the magnetic field (magnetic induction) is lower than the "target level" specified in the Decree when at a distance of 0.3 m, whereas the threshold considered as the "acceptable level" is set at a distance of only 0.7 m from the busbar. These features make busbar trunking systems the unavoidable choice for hospital facilities, data processing centres and wherever it is necessary to supply great amounts of power for workplaces.



ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

LIGHTING BUSWAY 25 - 40A

LB

INDEX

LB
TECHNICAL DESCRIPTION

GENERAL FEATURES

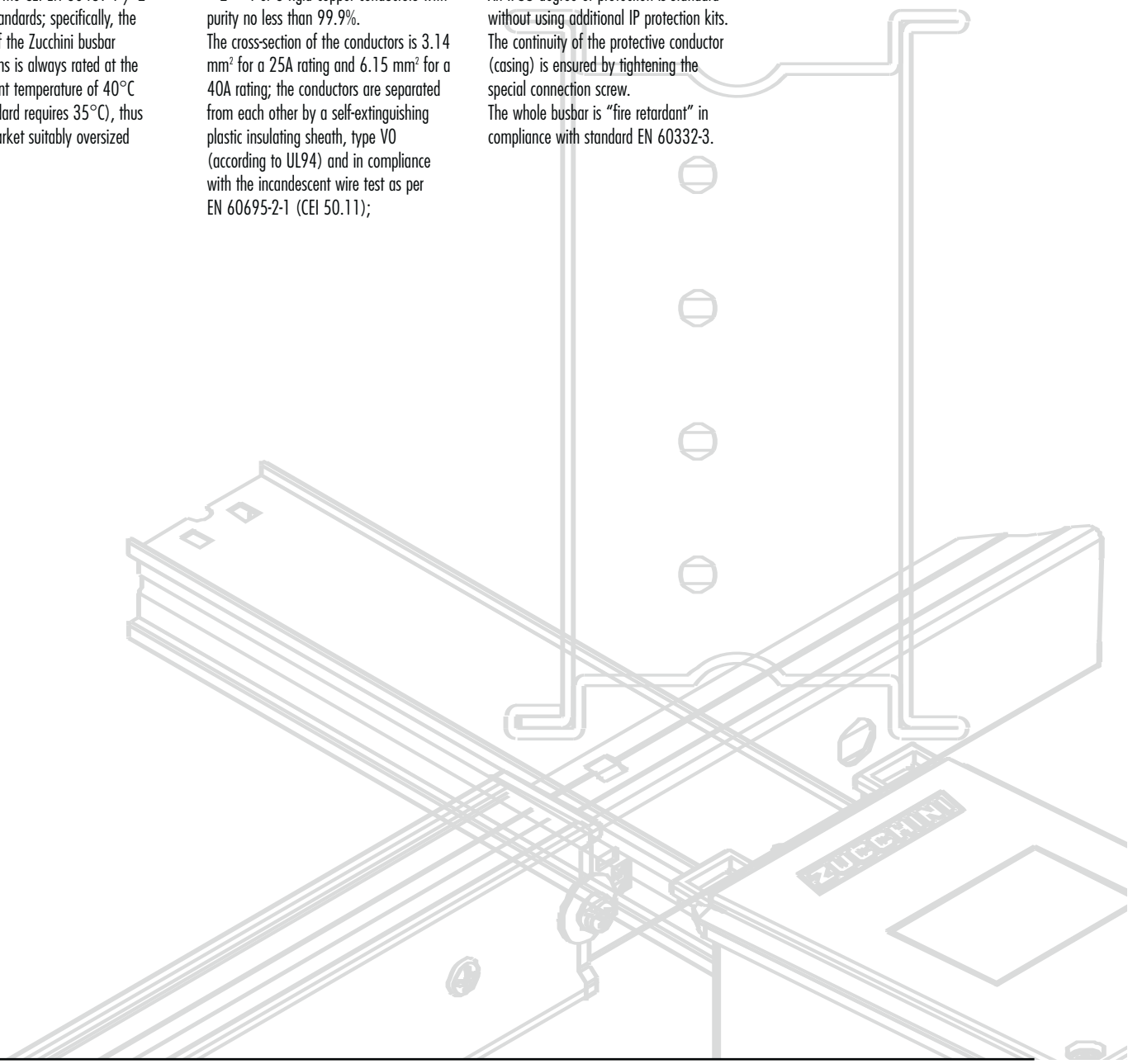
LB (Lighting Busbar) is part of the Zucchini range. It can be used for supplying power to light fittings within the service sector, advanced service sector and in most manufacturing industries.
Zucchini LB is extremely fast and simple to install. In addition, its flexibility can be used during the planning stage, during installation and during every day use.
The IP55 degree of protection makes it suitable for false ceiling and raised floor installations.
LB, as with all Zucchini products, is fully compliant with the CEI EN 60439-1 / 2 Harmonised Standards; specifically, the rated current of the Zucchini 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.
LB straight lengths include the following components:
• a closed and ribbed section casing (26x41 mm, thickness 0.6 mm), made of hot-galvanised steel (Senzimir) 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 colours (optional) and in a version with an anodized aluminium casing;
• 2 – 4 or 6 rigid copper conductors with purity no less than 99.9%.
The cross-section of the conductors is 3.14 mm^2 for a 25A rating and 6.15 mm^2 for a 40A rating; the conductors are separated from each other by a self-extinguishing plastic insulating sheath, type V0 (according to UL94) and in compliance with the incandescent wire test as per EN 60695-2-1 (CEI 50.11);
• tap-off outlets to accept plug-in units are located on the busbar with a spacing distance of 1 m (3 outlets every 3 m) or 0.5 m (6 outlets every 3 m).
The outlets in the LB version with 6 conductors (LB256/406) are situated on both sides of the busbar: 3+3 or 6+6 outlets;
• 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.
An IP55 degree of protection is standard without using additional IP protection kits.
The continuity of the protective conductor (casing) is ensured by tightening the special connection screw.
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END FEED UNITS

These enable the LB range to be supplied by cable ; the assembly is carried out with a quick joint arrangement as with the straight lengths.
The end feed units have connection terminals to accept 25 mm^2 flexible copper cables.
There is an anti-pull cable clamp inside the unit.
The entrance point for the cables is located at the base of the end feed unit.



END COVERS

End covers ensure the IP55 degree of protection at the end of the run.
Two versions are available, 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.

HANGERS

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:
- simple bracket: when used with its bracket-holder, it enables the installation of the busbar at a distance of about 25 cm below the ceiling
- wall bracket: enables the fixing of the run directly onto the wall of a building, setting it at the required clearance to enable the mounting of all the necessary accessories;
- snap clamp: the snap-on installation is extremely fast.
This clamp can be used both for suspending the busbar from the ceiling and for hanging accessories such as fluorescent lamps, tap-off boxes, etc. on the busbar;
- snap clamp with ring or hook: the ring or hook enables accessories to be mounted onto the busbar .
The technical chart on page 138 shows the suspension centre distance according to the maximum load distributed between two fixing points.

TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Zucchini is able to offer different technical solutions:
a) 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.
b) 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 appropriate spacers and brackets which retain the cable-channel system. The channel is 3 m long. Its dimensions are 28x28 mm.
c) 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.

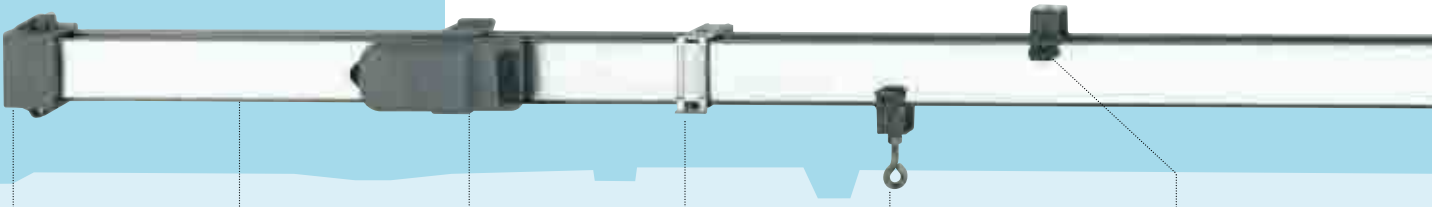
PLUG-IN UNITS

These are used for connecting and supplying light fittings. They include the following features:
- they can be operated when energized and when under load conditions;
- 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 V1 self-extinguishing degree (UL94);
- the standard degree of protection is IP55 without using additional IP protection kits;
- the plugs are polarised in the LB 6-conductor line, which means that the plug installed on one side of the busbar cannot be installed on the other side due to a mechanical interlock on the outlet;
- the plug-in units are common for the LB 2-4 and 6 conductor offer; these include:
a) 10A fixed phase selection plug-in units, pre-wired with 1m, 3m or 5m of 3x1.5mm² FROR cable;
b) 16A phase selection plug-in units, with terminals for connecting a L+N+PE cable;
b) 16A phase selection plug-in units, with a 5x20 cylindrical ceramic fuse and terminals for connecting a L+N+PE cable;
d) 16A three-phase plug-in units, with cylindrical fuseholder – CH8 type (8x31) - with terminals for connecting a 3L+N+PE cable.

LB

LIGHTING BUSWAY

LIGHTING AND DISTRIBUTION LINES



Right end cover: completes the installation and guarantees the IP55 protection degree.

Straight elements with one outlet every metre on one side only, supplied with installed outlet covers.

Plugs with phase selection device, empty or with fuse.

Wall bracket

Ring clamp to hang lamps or other line accessoires (boxes, loudspeaker, etc.)

Snap clamp, to suspend the busbar or accessories etc. (fluorescent lamps)

LINE DETAILS

Plug with phase selection device

Three-phase fused plug

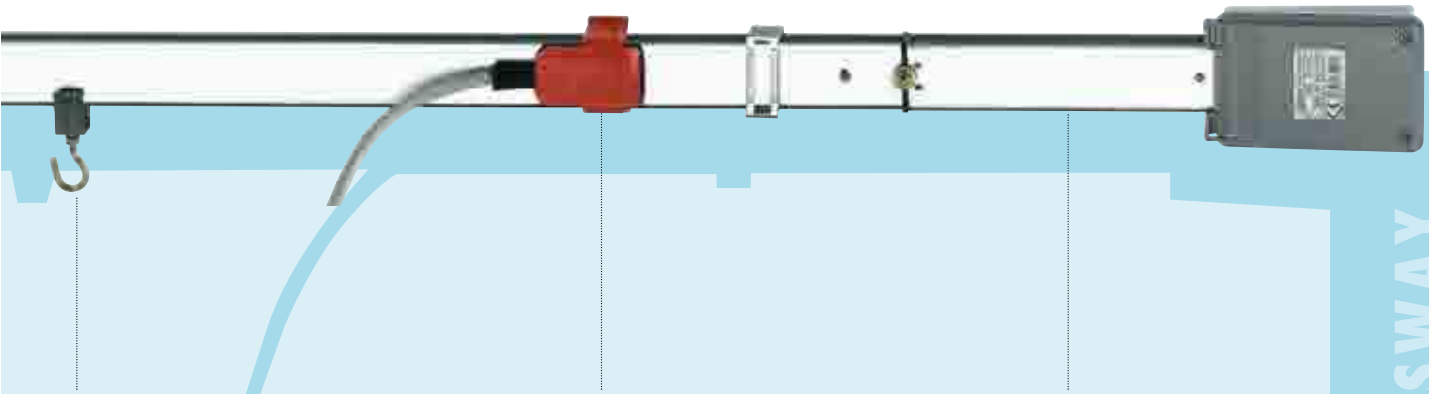
Single-phase plugs with 1, 3, 5 m cable

Shopping centres

Offices

Warehouses

Hospitals



Hook clamp to hang lamps or other line accessoires (boxes, loudspeakers, etc.)

Single-phase 10A plug with prewired cable and colour based identification system.

Right end feed unit with cable gland and terminals for 25 mm² flexible cables.

LIGHTING BUSWAY

Hook, ring and snap STAINLESS STEEL clamps

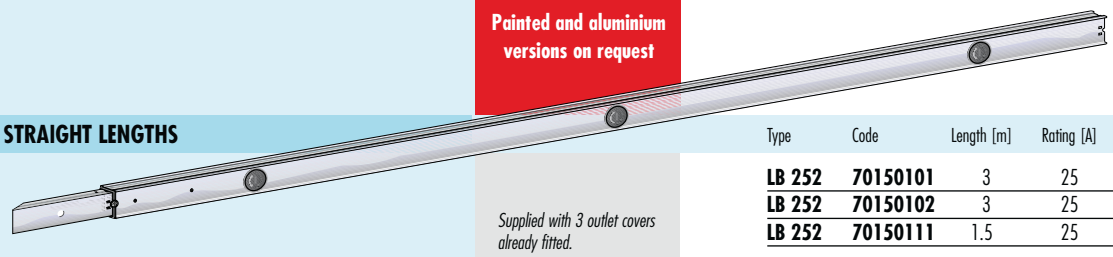
Simple suspension bracket

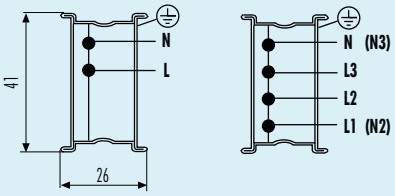
Bracket for element coupling

Outlet cover (spare part). Already installed on element outlets

Painted and aluminium versions on request

STRAIGHT LENGTHS

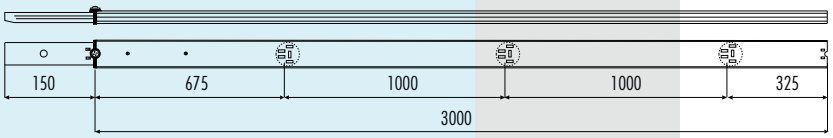




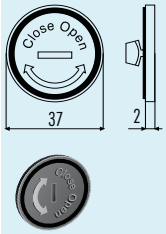
Supplied with 3 outlet covers already fitted.

• Element with 6 outlets. 3 outlet covers already fitted.

Type	Code	Length [m]	Rating [A]	Conductors	outlets n.	Weight kg
LB 252	**70150101**	3	25	2	3	2.900
LB 252	**70150102**	3	25	2	6 •	2.900
LB 252	**70150111**	1.5	25	2	2	1.500
LB 402	**70170101**	3	40	2	3	3.200
LB 402	**70170102**	3	40	2	6 •	3.200
LB 402	**70170111**	1.5	40	2	2	1.650
LB 254	**70160101**	3	25	4	3	3.100
LB 254	**70160102**	3	25	4	6 •	3.100
LB 254	**70160111**	1.5	25	4	2	1.550
LB 404	**70180101**	3	40	4	3	3.400
LB 404	**70180102**	3	40	4	6 •	3.400
LB 404	**70180111**	1.5	40	4	2	1.750



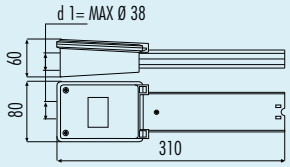
PLUG-OUTLET COVER (spare parts)

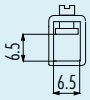


Already installed on the elements

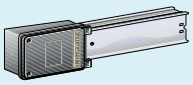
Type	Code	Weight kg
All	**70102054**	0.004

RIGHT END FEED UNIT





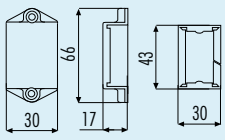
Max cable size 25 mm²

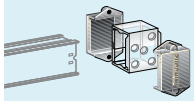


For cable glands see page 134

Type	Code	Weight kg
LB 252	**70161001**	0.400
LB 402	**70181001**	0.430
LB 254	**70161001**	0.400
LB 404	**70181001**	0.430

RIGHT END COVER



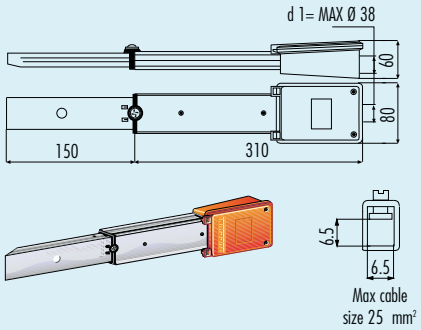


To be used with a right end feed unit

Type	Code	Weight kg
All	**70101351**	0.060

Painted and aluminium versions on request

LEFT END FEED UNIT

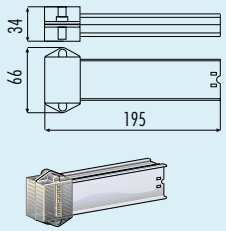


For cable glands see page 134

Complete with integral electrical and mechanical joint block.

Type	Code	Weight kg
LB 252	**70161002**	0.600
LB 402	**70181002**	0.630
LB 254	**70161002**	0.600
LB 404	**70181002**	0.630

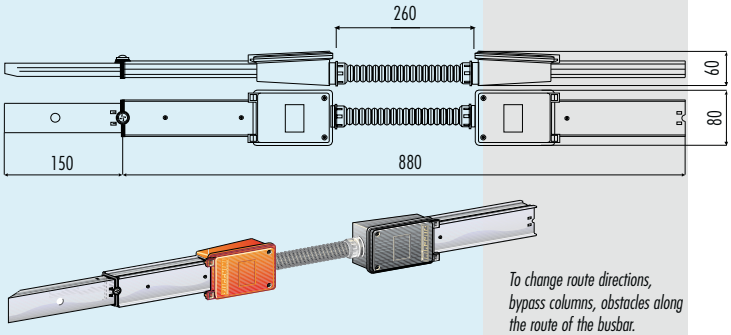
LEFT END COVER



To be used with a left end feed unit

Type	Code	Weight kg
All	**70161352**	0.200

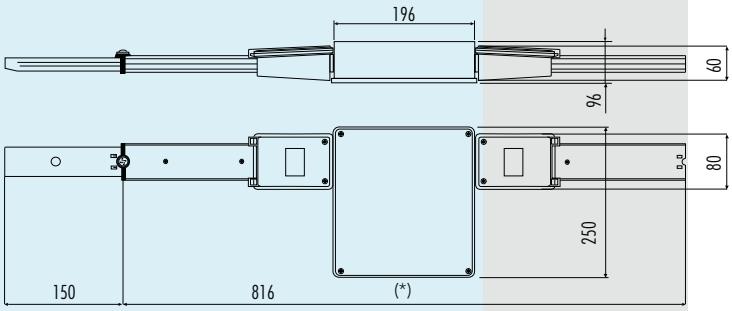
FLEXIBLE JOINT



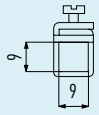
To change route directions, bypass columns, obstacles along the route of the busbar.

Type	Code	Weight kg
LB 252	**70161261**	1.350
LB 402	**70181261**	1.400
LB 254	**70161261**	1.350
LB 404	**70181261**	1.400

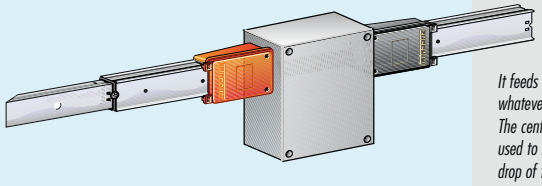
CENTRE FEED UNIT 25/40A



(*) Max. hole PG Ø48



Max cable size 35 mm²

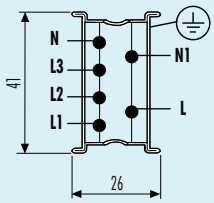


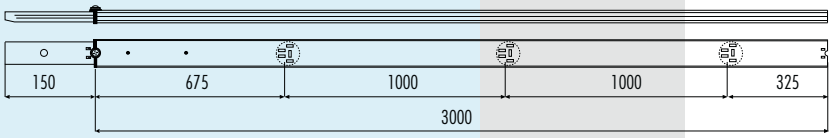
It feeds a trunking system from whatever intermediate position. The centre feed unit is also used to reduce the volt drop of the line.

Type	Code	Weight kg
All	**70181151**	2.100

Painted and aluminium versions on request

STRAIGHT LENGTHS



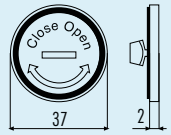


Supplied with 3 + 3 outlet covers already fitted.

• Element with 6 + 6 outlets. 3 outlet covers already fitted.

Type	Code	Length [m]	Rating [A]	Conductors	outlets n.	Weight kg
LB 256	**70250101**	3	25	6	3 + 3	3.100
LB 256	**70250102**	3	25	6	6 + 6 •	3.100
LB 256	**70250111**	1.5	25	6	2 + 2	1.550
LB 406	**70260101**	3	40	6	3 + 3	3.400
LB 406	**70260102**	3	40	6	6 + 6 •	3.400
LB 406	**70260111**	1.5	40	6	2 + 2	1.750

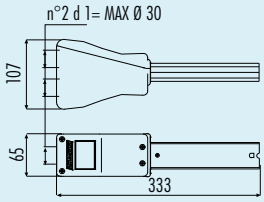
PLUG-OUTLET COVER (spare parts)



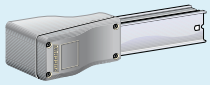
Already fitted on the elements

Type	Code	Weight kg
All	**70102054**	0.004

RIGHT END FEED UNIT



Max cable size 25 mm²

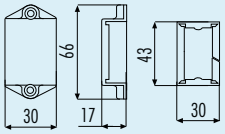


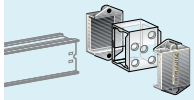
For cable glands see page 134

Removable upper and lower covers facilitating cable connection.

Type	Code	Weight kg
All	**70261101**	0.430

RIGHT END COVER



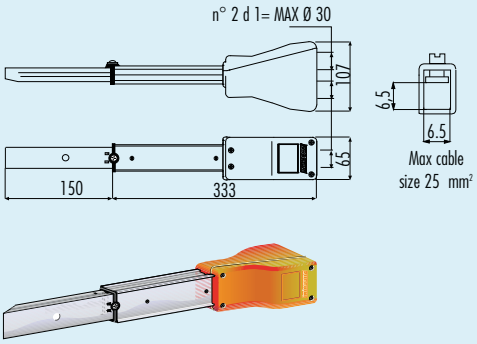


To be used with a right end feed unit

Type	Code	Weight kg
All	**70101351**	0.080

Painted and aluminium version on request

LEFT END FEED UNIT



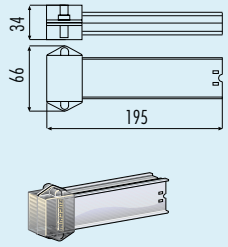
For cable glands see page 134

Complete with integral electrical and mechanical joint block.

Removable upper and lower covers facilitating cable connection.

Type	Code	Weight kg
All	**70261102**	0.600

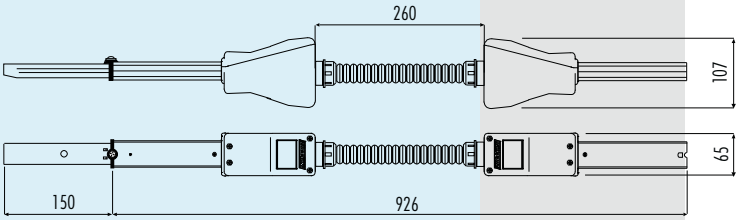
LEFT END COVER

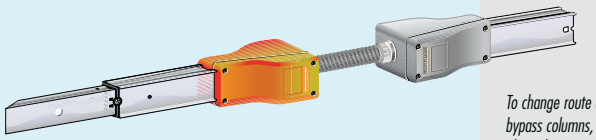


To be used with a left end feed unit.

Type	Code	Weight kg
All	**70263102**	0.130

FLEXIBLE JOINT

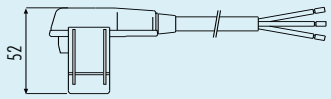


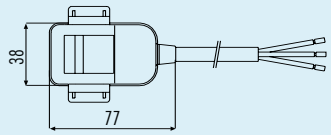


To change route directions, bypass columns, obstacles along the run.

Type	Code	Weight kg
All	**70263201**	1.350

SINGLE PHASE PLUGS WITH CABLE



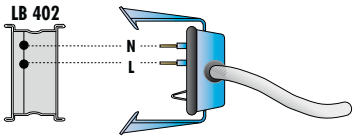


	LB Type 252 402	LB Type 254 404	LB Type 256 406	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
			4 conductors side							
=>		•	•	**70105016**	10	-	L1-N	1m	FROR	grey
		•	•	**70105116**	10	-	L1-N	3m	FROR	grey
		•	•	**70105126**	10	-	L1-N	5m	FROR	grey
		•	•	**70105090**	10	-	L1-N	1m	FG7	grey
=>		•	•	**70105017**	10	-	L2-N	1m	FROR	orange
		•	•	**70105117**	10	-	L2-N	3m	FROR	orange
		•	•	**70105127**	10	-	L2-N	5m	FROR	orange
		•	•	**70105091**	10	-	L2-N	1m	FG7	orange
=>	•	•	•	**70105018**	10	-	L3-N	1m	FROR	blue
	•	•	•	**70105118**	10	-	L3-N	3m	FROR	blue
	•	•	•	**70105128**	10	-	L3-N	5m	FROR	blue
	•	•	•	**70105092**	10	-	L3-N	1m	FG7	blue
=>		•	•	**70105063**	10	-	L2-N2	1m	FROR	black
		•	•	**70105163**	10	-	L2-N2	3m	FROR	black
		•	•	**70105173**	10	-	L2-N2	5m	FROR	black
		•	•	**70105093**	10	-	L2-N2	1m	FG7	black
			2 conductors side							
=>			•	**70265001**	10	-	L1-N	1m	FROR	orange
			•	**70265101**	10	-	L1-N	3m	FROR	orange
			•	**70265111**	10	-	L1-N	5m	FROR	orange
			•	**70265004**	10	-	L1-N	1m	FG7	orange

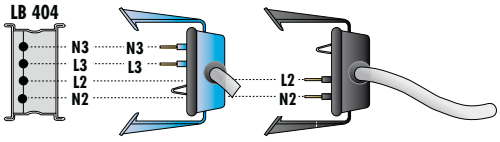
The wide range of colours available allows identification of the circuit to the user immediately, giving advantages both while installing the plant and during possible future changes.
Quick load balance check on the different phases, by using the different colours.

=> Most commonly used plugs.

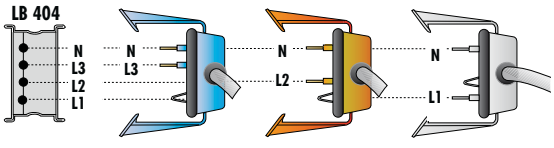
LB 252
LB 402
SINGLE PHASE



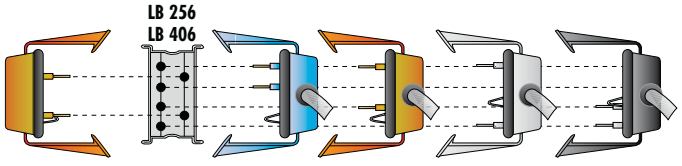
LB 254
LB 404
TWO CIRCUIT SINGLE PHASE



LB 254
LB 404
THREE PHASE BALANCED SYSTEM

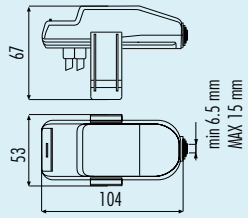


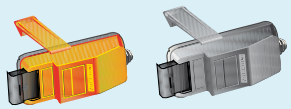
LB 256
LB 406



PLUGS FOR ALL LB VERSIONS

PLUGS

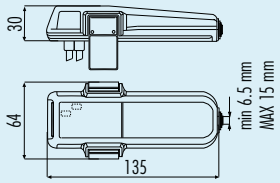


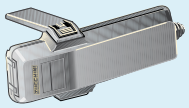


	LB Type 252 402	254 404	256 406	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
			4 conductors side	**SINGLE PHASE SELECTION PLUGS**						
=>	•	•	•	**70105030**	16	Ø5x20 6.3A	to be selected	-	-	grey
=>	•	•	•	**70105031**	16	-	to be selected	-	-	grey
	•	•	•	**70105130**	16	Ø5x20 6.3A	to be selected	3m	FROR	grey
	•	•	•	**70105131**	16	Ø5x20 6.3A	to be selected	5m	FROR	grey
				THREE-PHASE PLUGS						
=>		•	•	**70105141**	16	-	L1-L2-L3-N	-	-	grey
		•	•	**70105142**	16	-	L1-L2-L3-N	3m	FROR	grey
		•	•	**70105143**	16	-	L1-L2-L3-N	5m	FROR	grey
			2 conductors side							
=>			•	**70265002**	16	Ø5x20 6.3A	-	-	-	orange
=>			•	**70265003**	16	-	-	-	-	orange
			•	**70265102**	16	-	-	3m	FROR	orange
			•	**70265103**	16	-	-	5m	FROR	orange

=> Most commonly used plugs.

CH8 FUSED 16A PLUGS - SINGLE PHASE

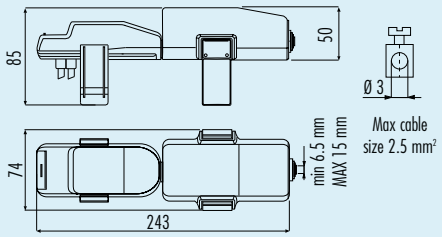


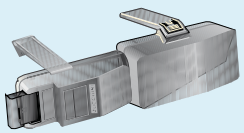


	Type LB 252 402	254 404	256 406	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
			4 conductors side							
	•	•	•	**70105071**	16	CH8 Ø8.5x31.5 (*)	to be selected	-	-	grey

(*) Fuses not included

CH8 FUSED 16A PLUGS - THREE-PHASE

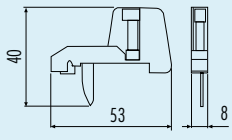




	Type LB 252 402	254 404	256 406	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
			4 conductors side							
	•	•	•	**70105035**	16	CH8 Ø8.5x31.5 (*)	L1-L2-L3-N	-	-	grigio
	•	•	•	**70105045**	16	Ø6.3x31.5 (*)	L1-L2-L3-N	-	-	grigio

(*) Fuses not included

MOBILE CONTACT (spare part)

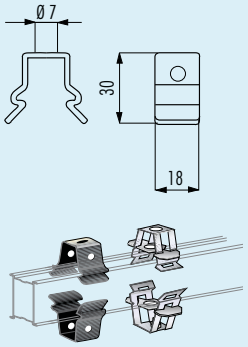


Code		Rating [A]	Fuses	Weight Kg
71005028	(**)	16	1	0.008
71005029		16	0	0.008

(**) 16A contact with 6.3A ceramic fuse

For fuse characteristics see page 134

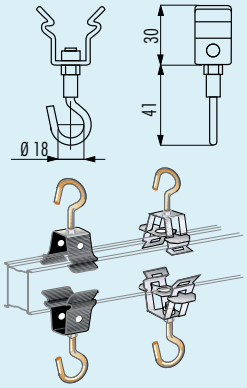
SNAP CLAMP (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
Burnished steel	**71003003**	0.021
Stainless steel	**71203701**	0.021

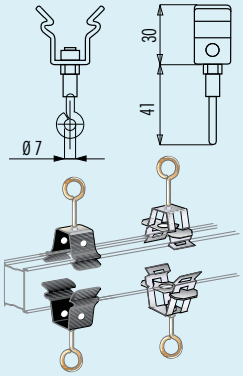
SUSPENSION HOOK (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
Burnished steel	**71005002**	0.025
Stainless steel	**71203702**	0.025

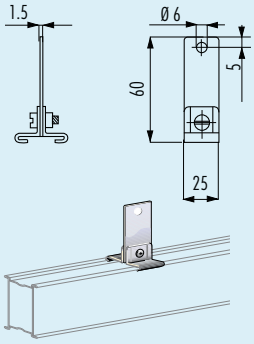
SUSPENSION RING (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
Burnished steel	**71005015**	0.025
Stainless steel	**71203703**	0.025

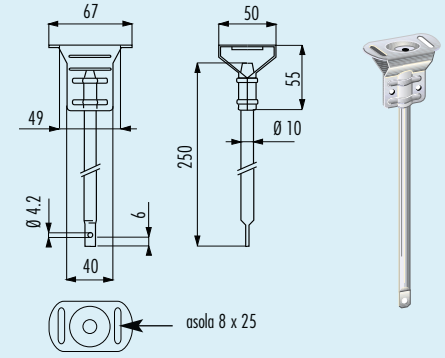
SIMPLE SUSPENSION CLAMP (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
	71003001	0.033

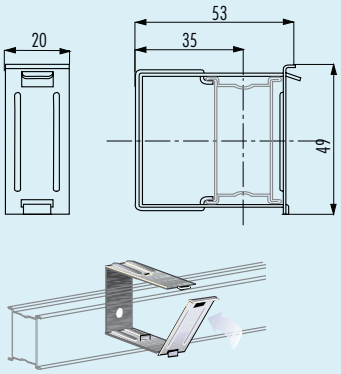
CEILING BRACKET HOLDER



Use it with code 71003001: simple suspension hanger.

Type	Code	Weight k
	73003312	0.136

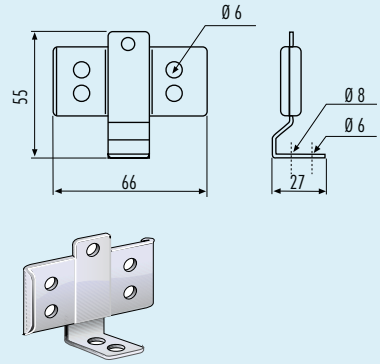
WALL BRACKET



Not to be used with LB6

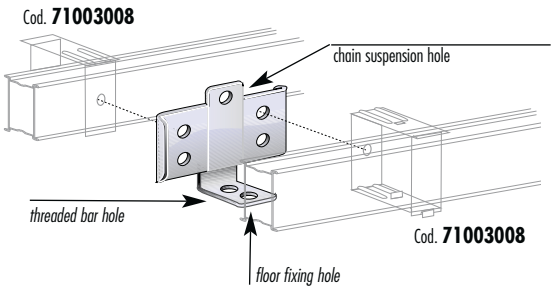
Type	Code	Weight kg
	71003008	0.030

BRACKET FOR LB LINE COUPLING

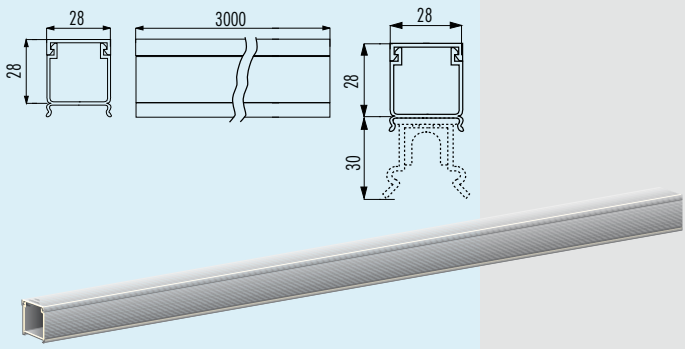


Bracket for running two lines back to back. Also for floor mounting applications.

Type	Code	Weight kg
	70105043	0.060

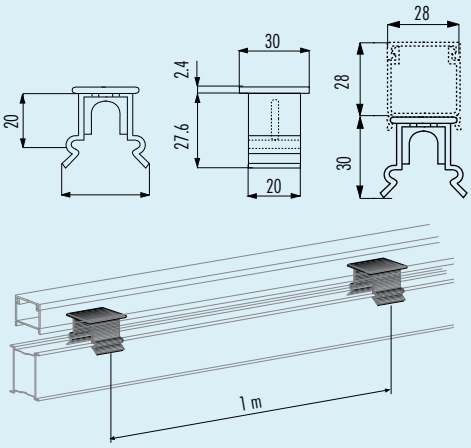


CABLE CHANNEL WITH COVER (PVC)



Type	Code	Length [m]	Weight kg
	71000104	3	0.884

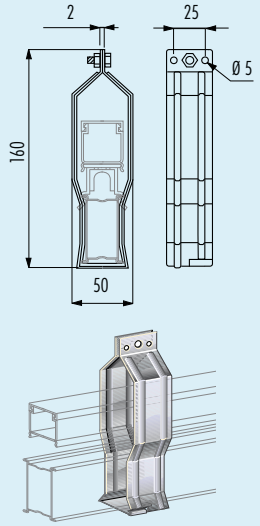
CABLE CHANNEL SPACER



In your Purchase Order add a spacer for every metre of cable channel.

Type	Code	Weight kg
	71003007	0.006

SUSPENSION BRACKET FOR CABLE CHANNEL



Suspension bracket for busbar and cable channel.

Type	Code	Weight kg
	71003006	0.108

NOTES

ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

HIGH LIGHTING 25 - 40A

INDEX

HL
TECHNICAL DESCRIPTION

GENERAL FEATURES

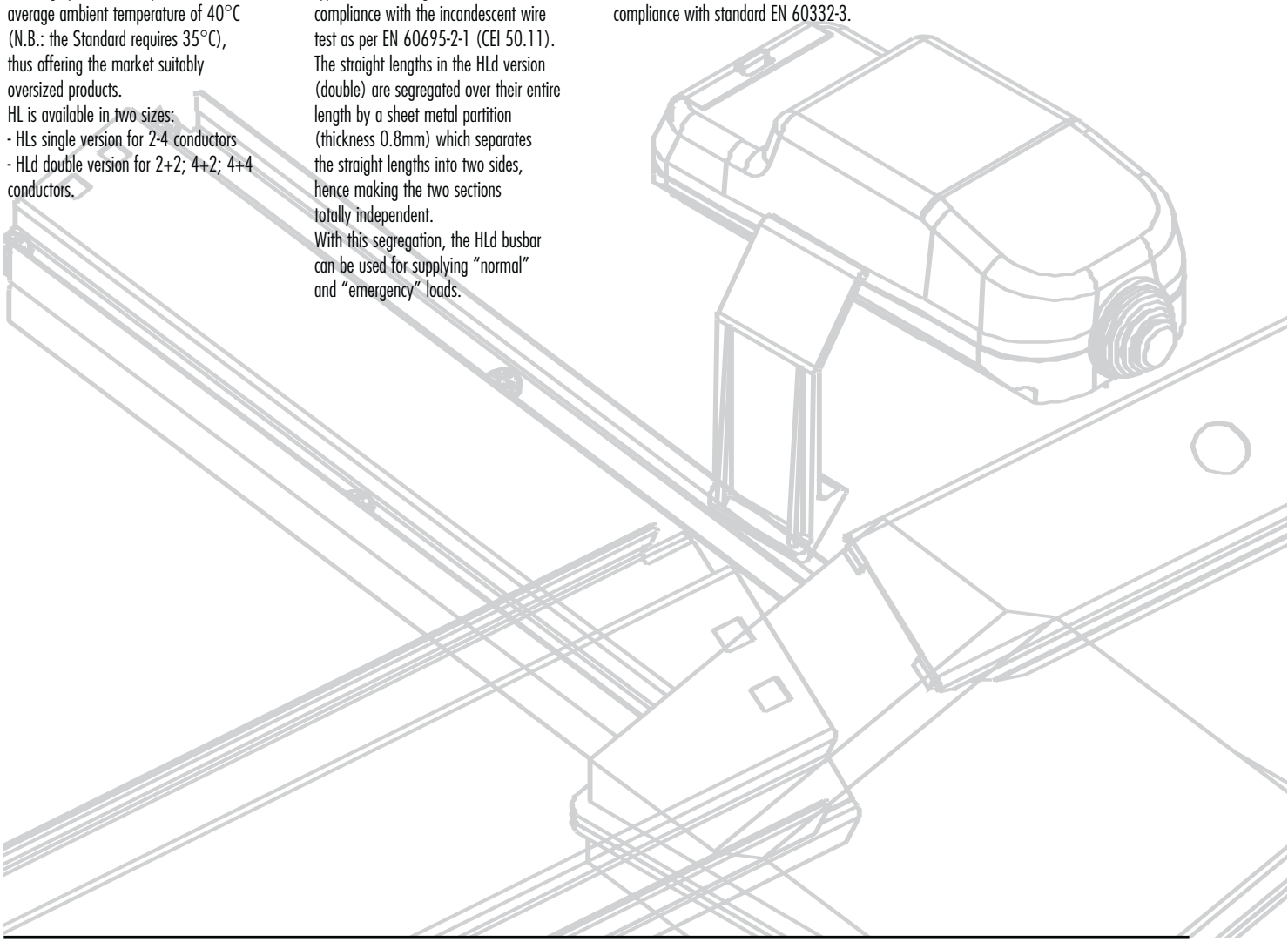
HL (High Lighting) is part of the Zucchini range. It can be used for supplying power to light fittings within manufacturing plants and wherever it is necessary to hang very heavy accessories from a busbar. Zucchini HL is extremely fast and simple to install. In addition, its flexibility in use can be used during the planning stage and during installation.
Its high mechanical strength, which is a main feature of the HL line, is the result of its particular "beam-type configuration", and also the use of sheet metal of increased thickness. HL is particularly suitable for installations in which the bracket fixing centre is up to 6 m.
HL, as all Zucchini products, is fully compliant with the CEI EN 60439-1 / 2 Harmonised Standards; specifically, the rated current of the Zucchini busbar trunking system is always rated to the average ambient temperature of 40°C (N.B.: the Standard requires 35°C), thus offering the market suitably oversized products.
HL is available in two sizes:
- HLs single version for 2-4 conductors
- HLd double version for 2+2; 4+2; 4+4 conductors.

STRAIGHT LENGTHS

Used for distributing power, suspending and powering light fittings.
HL straight lengths include the following components:
• a "beam-type" section bar (HLs: 26x62mm; HLd: 40x70mm, thickness 0.8 mm), made of hot-galvanised steel (Senzimir) which also serves as a protective conductor due to its cross-section and electrical continuity.
The straight lengths are also available in the Aisi 304 stainless steel version;
• 2 – 4 – 6 or 8 conductors made of rigid copper with purity no less than 99.9%.
The cross-section of the conductors is 3.14 mm^2 for a 25A rating and 6.15 mm^2 for a 40A rating ; the conductors are separated from each other by a self-extinguishing plastic insulating sheath, type V0 (according to UL94) and in compliance with the incandescent wire test as per EN 60695-2-1 (CEI 50.11).
The straight lengths in the HLd version (double) are segregated over their entire length by a sheet metal partition (thickness 0.8mm) which separates the straight lengths into two sides, hence making the two sections totally independent.
With this segregation, the HLd busbar can be used for supplying "normal" and "emergency" loads.
The HLd line is designed to be fully rated (25A+25A or 40A+40A) for both circuits simultaneously without a derating factor;
• tap-off outlets to accept plug-in units are located on the busbar with a spacing distance of 1 m (3 outlets every 3 m). The outlets in the double versions (HLd) are situated on both sides of the busbar (3+3 outlets;
• 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. An IP55 degree of protection is standard without using additional IP protection kits.
The continuity of the protective conductor (casing) is ensured by tightening the special connection screw.
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END FEED UNITS

These enable the HL range to be supplied with one (HLs) or two separate cables (HLd); the assembly is carried out with a quick joint arrangement as with the straight lengths.
The end feed units have connection terminals to accept 25 mm^2 flexible cables. There is an anti-pull cable clamp inside the unit.
The entrance point for the cables is located at the base of the end feed unit.



END COVERS

End covers ensure the IP55 degree of protection at the end of the run.
Two versions are available, depending on the end feed 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.

HANGERS

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:
- simple bracket: when used with its bracket-holder , it enables the installation of the busbar at a distance of about 25 cm below the ceiling
- wall bracket: enables the fixing of the run directly onto the wall of a building, setting it at the required clearance to enable the mounting of all the necessary accessories;
- snap clamp: the snap-on installation is extremely fast.
This clamp can be used both for suspending the busbar from the ceiling and for hanging accessories such as fluorescent lamps, tap-off boxes, etc. on the busbar;
- snap clamp with ring or hook: the ring or hook enables accessories to be mounted on the busbar.

The technical chart on page 139 shows the suspension centre distance according to the maximum load distributed between two fixing points.

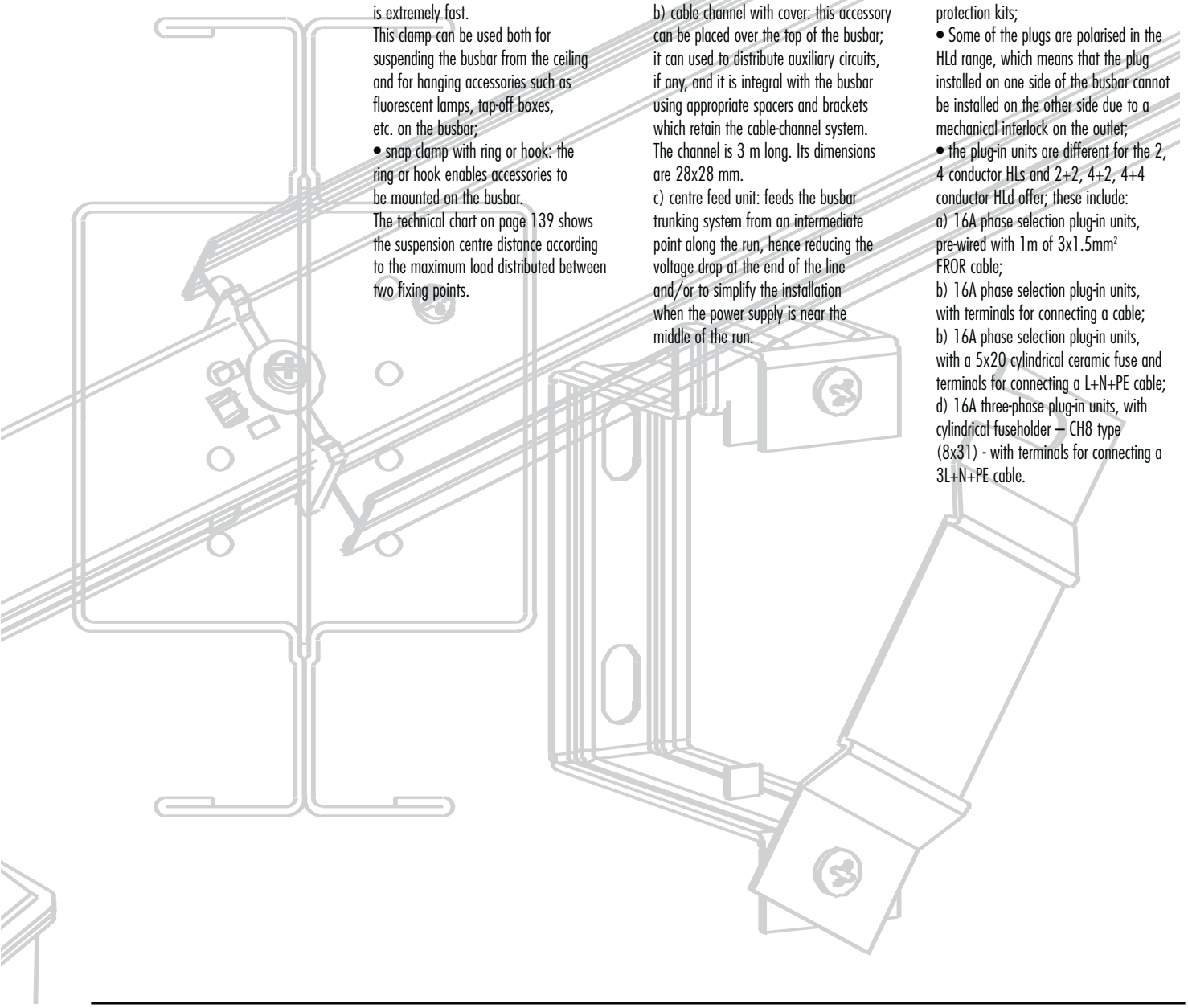
TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Zucchini is able to offer different technical solutions:
a) 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.
b) cable channel with cover: this accessory can be placed over the top of the busbar; it can used to distribute auxiliary circuits, if any, and it is integral with the busbar using appropriate spacers and brackets which retain the cable-channel system.
The channel is 3 m long. Its dimensions are 28x28 mm.
c) 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 and supplying light fittings. They include the following features:
- they can be operated when energized and when under load conditions;
- the PE contact (protective conductor) is the first to make an electrical connection when plugged into the outlet, and the last to disconnect when you unplugged;
- all insulating plastic components are in compliance with the incandescent wire test (EN 60695-2-1) and have a V1 self-extinguishing degree (UL94);
- the standard degree of protection is IP55 without using additional IP protection kits;
- Some of the plugs are polarised in the HLd range, which means that the plug installed on one side of the busbar cannot be installed on the other side due to a mechanical interlock on the outlet;
- the plug-in units are different for the 2, 4 conductor HLs and 2+2, 4+2, 4+4 conductor HLd offer; these include:

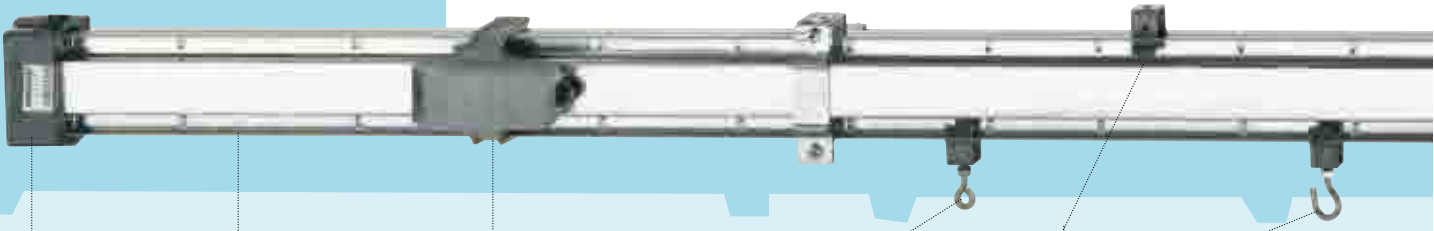
a) 16A phase selection plug-in units, pre-wired with 1m of 3x1.5mm^2 FROR cable;
b) 16A phase selection plug-in units, with terminals for connecting a cable;
b) 16A phase selection plug-in units, with a 5x20 cylindrical ceramic fuse and terminals for connecting a L+N+PE cable;
d) 16A three-phase plug-in units, with cylindrical fuseholder – CH8 type (8x31) - with terminals for connecting a 3L+N+PE cable.



HL

HIGH LIGHTING

LIGHTING AND DISTRIBUTION LINES



Right or left end cover: completes the installation of the line and guarantees the IP55protection degree.

Straight elements with one outlet every metre on both sides, supplied with installed outlet covers.

Plugs with phase selection device, empty or with fuse.

Ring clamp to hang lamps or other accessories (boxes, loudspeakers, etc.).

Hook clamp to hang lamps or other accessories (boxes, loudspeakers, etc.).

Snap clamp, to suspend the busbar or accessories (fluorescent lamps).

LINE DETAILS

Plug with phase selection device

Three-phase fused plug

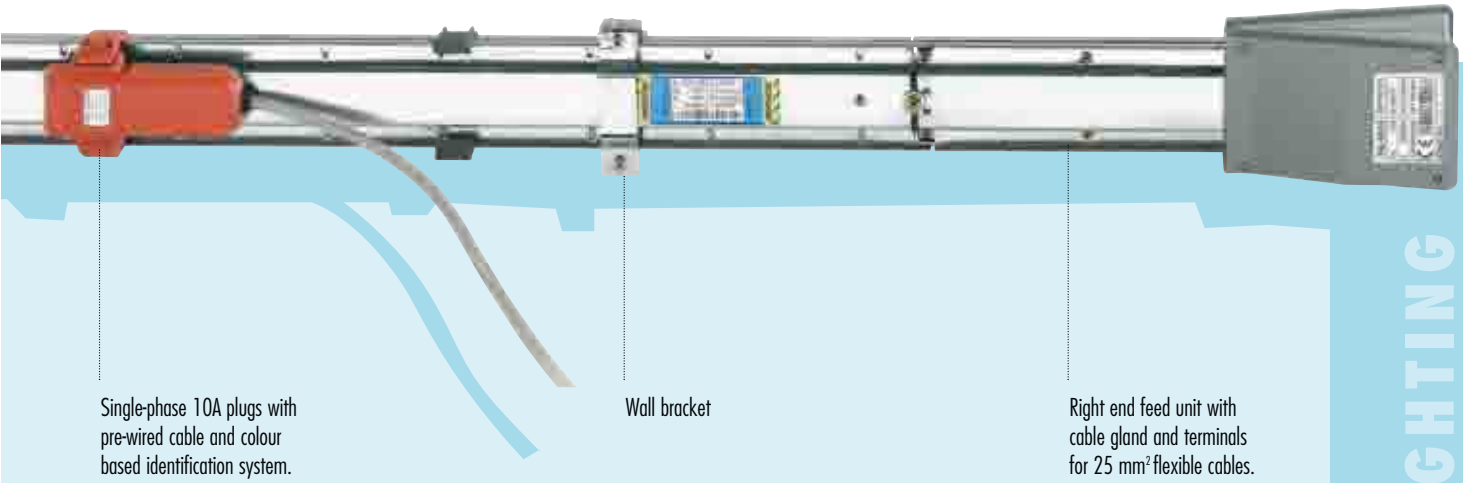
Ceiling bracket holder

Warehouses

Car parks

Factories

Gymnasiums



Single-phase 10A plugs with pre-wired cable and colour based identification system.
N - L1 = grey
N - L2 = orange
N - L3 = blue
for 3P+N circuits
and
N3 - L3 = blue
N2 - L2 = black
for two single-phase circuits.

Wall bracket

Right end feed unit with cable gland and terminals for 25 mm² flexible cables.

HIGH LIGHTING

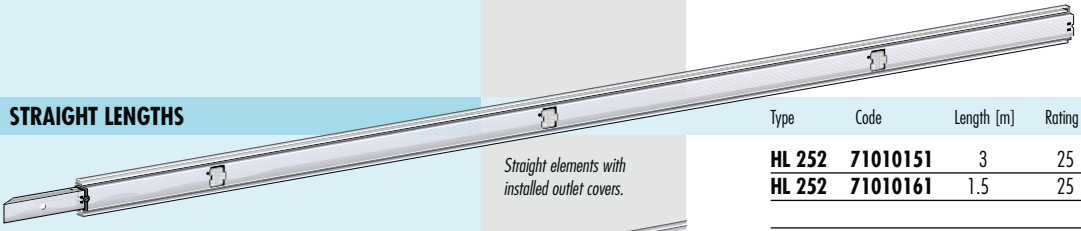
Wall bracket

Simple suspension bracket

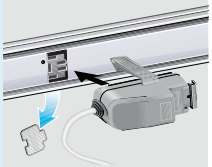
Hook, ring and snap STAINLESS STEEL clamps

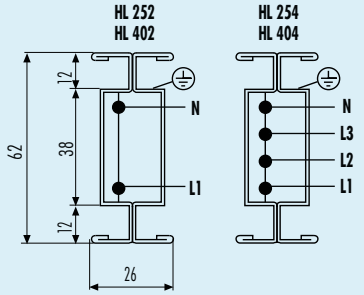
Outlet cover (spare part).

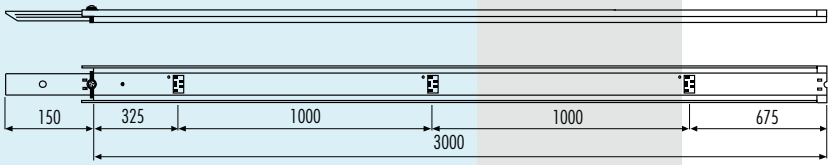
STRAIGHT LENGTHS



Straight elements with installed outlet covers.

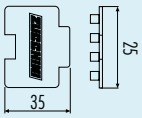






Type	Code	Length [m]	Rating [A]	Conductors	outlets n.	Weight kg
HL 252	**71010151**	3	25	2	3	4.5
HL 252	**71010161**	1.5	25	2	2	2.25
HL 402	**71030151**	3	40	2	3	4.8
HL 402	**71030161**	1.5	40	2	2	2.4
HL 254	**71020151**	3	25	4	3	4.8
HL 254	**71020161**	1.5	25	4	2	2.4
HL 404	**71040151**	3	40	4	3	5.1
HL 404	**71040161**	1.5	40	4	2	2.55

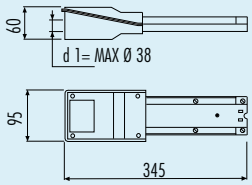
PLUG-OUTLET COVER (spare parts)

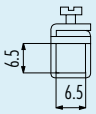


Straight elements are supplied with outlet covers already installed.

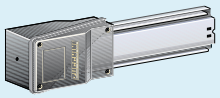
Type	Code	Colour	Weight kg
All	**01150048**	grey	0.011

RIGHT END FEED UNIT





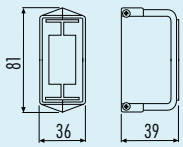
Max cable size 25 mm²



For cable glands see page 134.

Type	Code	Weight kg
All	**71041001**	0.800

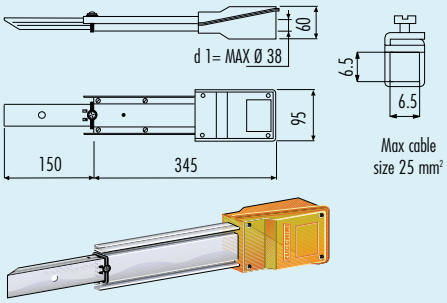
RIGHT END COVER



To be used with a right end feed unit.

Type	Code	Weight kg
All	**71041301**	0.080

LEFT END FEED UNIT

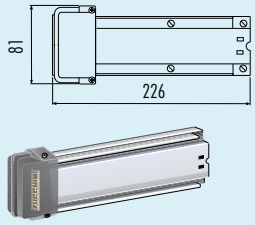


For cable glands see page 134.

Complete with integral electrical and mechanical joint block

Type	Code	Weight kg
All	**71041002**	1.000

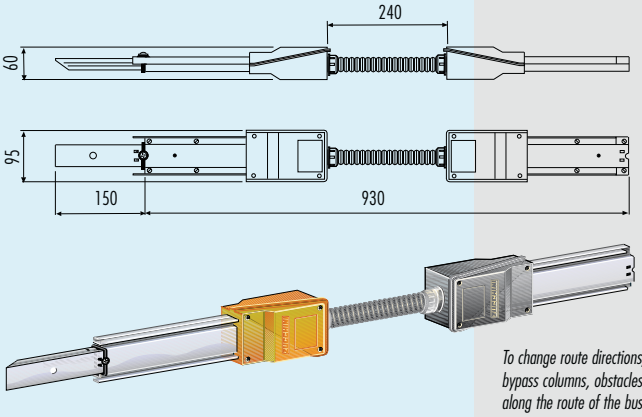
LEFT END COVER



To be used with a left end feed unit.

Type	Code	Weight kg
All	**71041302**	0.130

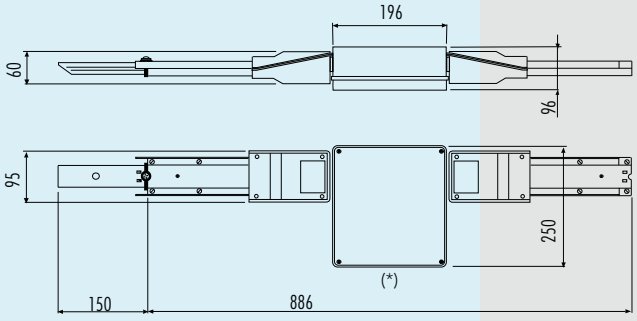
FLEXIBLE JOINT



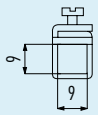
To change route directions, bypass columns, obstacles along the route of the busbar.

Type	Code	Weight kg
All	**71041261**	2.500

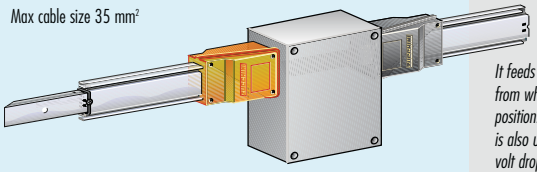
CENTRE FEED UNIT 25/40A



(*) Max. hole PG Ø48



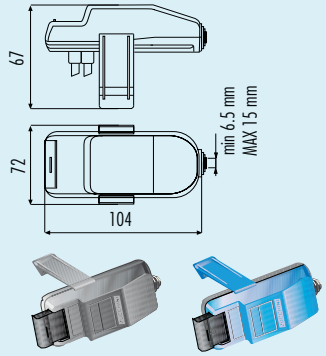
Max cable size 35 mm²



It feeds a trunking system from whatever intermediate position. The centre feed unit is also used to reduce the volt drop of the line.

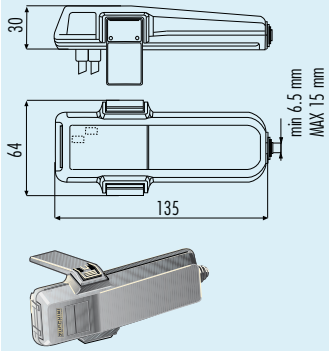
Type	Code	Weight kg
All	**71041151**	2.900

PHASE SELECTION PLUG



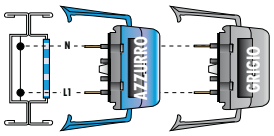
HL Type 252 402	HL Type 254 404	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
•	•	**71005030**	16	Ø5x20	to be selected	-	-	grey
•	•	**71005031**	16	-	to be selected	-	-	grey
•	•	**71005032**	16	-	to be selected	1m	FROR	grey
•		**71015030**	16	Ø5x20	L1-N	-	-	blue

SINGLE PHASE PLUG WITH FUSEHOLDER



HL Type 252 402	HL Type 254 404	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
•	•	**71005068**	16	CH8 Ø8.5x31.5	to be selected	-	-	grey
•	•	**71005070**	16	CH8 Ø8.5x31.5	L1-N	1m	FROR	grey
	•	**71005071**	16	CH8 Ø8.5x31.5	L2-N	1m	FROR	orange
	•	**71005072**	16	CH8 Ø8.5x31.5	L3-N	1m	FROR	blue

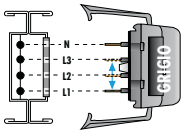
HL 252
HL 402
blue outlet



71015030

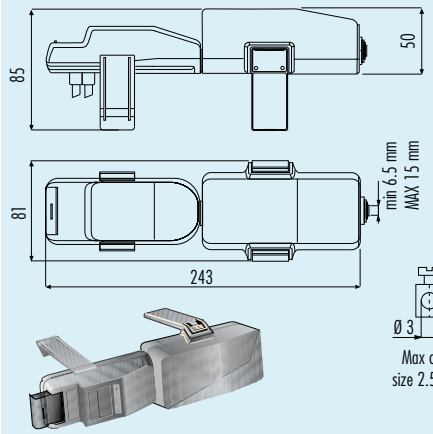
71005030
71005031
71005032

HL 254
HL 404
grey outlet



71005030
71005031

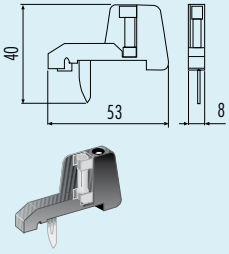
THREEPHASE PLUG WITH FUSEHOLDER



HL Type 252 402	HL Type 254 404	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
	•	**71005035**	16	CH8 Ø8.5x31.5 (*)	L1-L2-L3-N	-	-	grey
	•	**71005045**	16	Ø6.3x31.5	L1-L2-L3-N	-	-	grey

(*) Fuses not included

MOBILE CONTACT



Code		Rating [A]	Fuses	Weight Kg
71005028	(**)	16	1	0.010
71005029		16	0	0.010

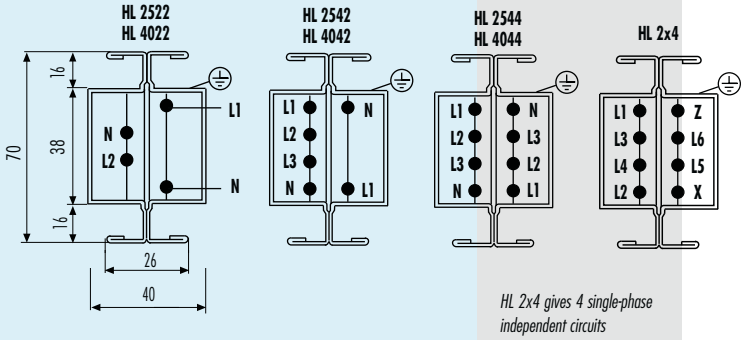
(**) 16A contact with 6.3A fuse

NOTES

Painted and STAINLESS STEEL versions on request

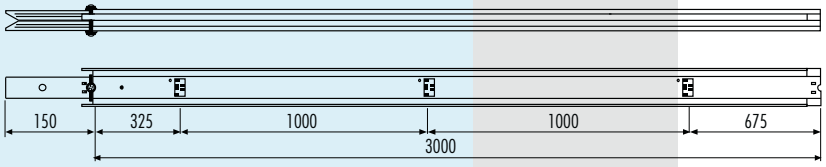
STRAIGHT LENGTHS

Straight elements with outlet covers already fitted.

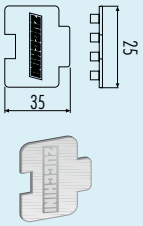


HL 2x4 gives 4 single-phase independent circuits

Type	Code	Length [m]	Rating [A]	Conductors	outlets n.	Weight kg
HL 2522	**71510151**	3	25+25	2 + 2	6	8.4
HL 2522	**71510161**	1.5	25+25	2 + 2	4	4.2
HL 4022	**71540151**	3	40+40	2 + 2	6	8.7
HL 4022	**71540161**	1.5	40+40	2 + 2	4	4.35
HL 2542	**71520151**	3	25+25	4 + 2	6	8.7
HL 2542	**71520161**	1.5	25+25	4 + 2	4	4.35
HL 4042	**71550151**	3	40+40	4 + 2	6	9.3
HL 4042	**71550161**	1.5	40+40	4 + 2	4	4.65
HL 2544	**71530151**	3	25+25	4 + 4	6	8.7
HL 2544	**71530161**	1.5	25+25	4 + 4	4	4.35
HL 4044	**71560151**	3	40+40	4 + 4	6	9.6
HL 4044	**71560161**	1.5	40+40	4 + 4	4	4.8
HL 2x4	**71570151**	3	25+25	2+2+2+2	6	8.7
HL 2x4	**71570161**	1.5	25+25	2+2+2+2	4	4.35



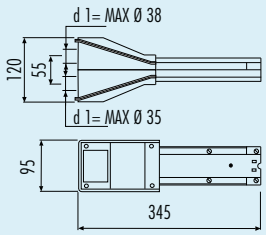
PLUG-OUTLET COVER (spare parts)

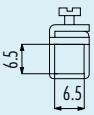


Straight elements are supplied with outlet covers already fitted.

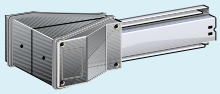
Type	Code	Colour	Weight kg
All	**71023601**	grey	0.011

RIGHT END FEED UNIT 25/40A





Max cable size25 mm²

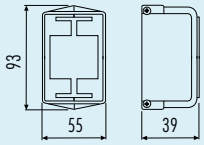


For cable glands see page 134.

This feed unit has two different cable entries, and completely separate and independent terminals.

Type	Code	Colour	Weight kg
All	**71561001**		1.100

RIGHT END COVER

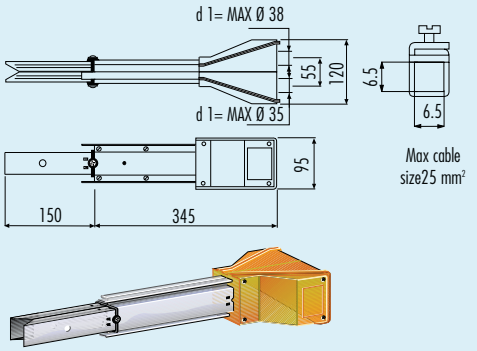


To be used with a right end feed unit.

Type	Code	Colour	Weight kg
All	**71561301**		0.090

Painted and STAINLESS STEEL versions on request

LEFT END FEED UNIT 25/40A



Max cable size25 mm²

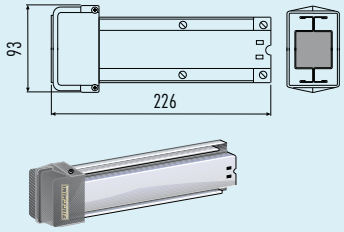
For cable glands see page 134.

Complete with integral electrical and mechanical joint block.

This feed unit has two different cable entries, and completely separate and independent terminals.

Type	Code	Weight kg
All	**71561002**	1.600

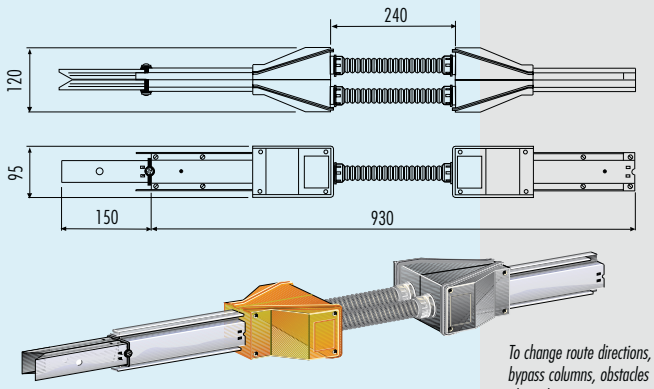
LEFT END COVER



To be used with a left end feed unit.

Type	Code	Weight kg
All	**71561302**	0.786

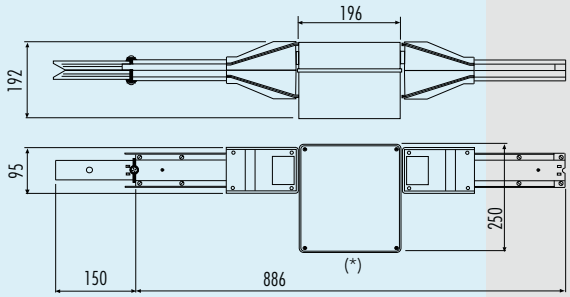
FLEXIBLE JOINT 25/40A



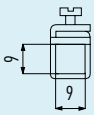
To change route directions, bypass columns, obstacles along the run.

Type	Code	Weight kg
All	**71561261**	3.000

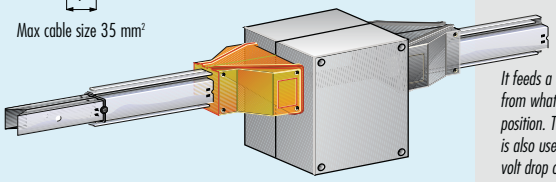
CENTRE FEED UNIT 25/40A



(*) *Max. hole PG Ø48*



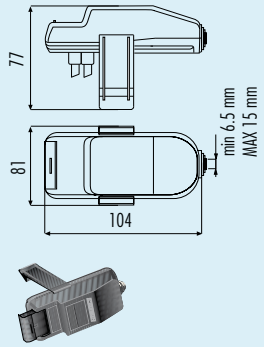
Max cable size 35 mm²



It feeds a trunking system from whatever intermediate position. The centre feed unit is also used to reduce the volt drop of the line.

Type	Code	Weight kg
All	**71561151**	3.800

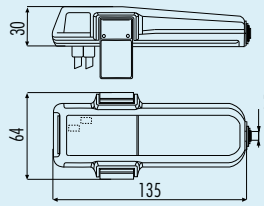
PHASE SELECTION PLUG

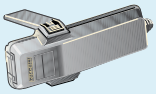


	HL Type 2522 4022	2542 4042	2544 4044	2x4	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
=>	•	•	•	•	**71505030**	16	Ø5x20	to be selected	-	-	grey
=>	•	•	•	•	**71505031**	16	-	to be selected	-	-	grey
	•	•	•	•	**71505032**	16	Ø5x20	to be selected	1m	FROR	grey
	•	•			**71515030**	16	Ø5x20	L1-N	-	-	blue
	•				**71515031**	16	Ø5x20	L2-L3	-	-	orange
				•	**71575030**	16	Ø5x20	L1-L2	-	-	blue
				•	**71575031**	16	Ø5x20	L3-L4	-	-	black
				•	**71575032**	16	Ø5x20	L5-L6	-	-	orange
				•	**71575033**	16	Ø5x20	X-Z	-	-	brown

=> Most employed plugs.

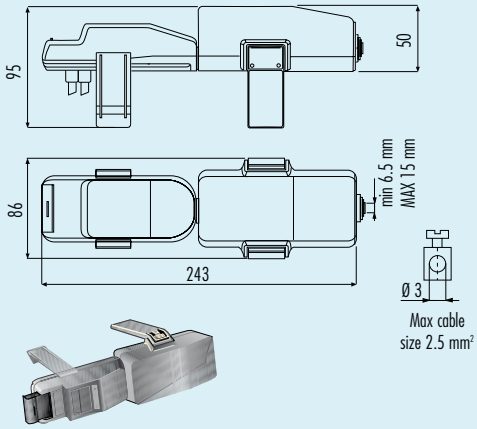
SINGLE-PHASE PLUG WITH CH8 FUSEHOLDER





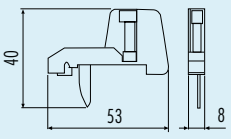
	HL Type 2522 4022	2542 4042	2544 4044	2x4	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
	•	•	•	•	**71505059**	16	CH8 Ø8.5x31.5	to be selected	-	-	grey
		•	•		**71505070**	16	CH8 Ø8.5x31.5	L1-N	1m	FROR	grey
		•	•		**71505071**	16	CH8 Ø8.5x31.5	L2-N	1m	FROR	orange
		•	•		**71505072**	16	CH8 Ø8.5x31.5	L3-N	1m	FROR	blue

THREEPHASE PLUG WITH FUSEHOLDER



	HL Type 2522 4022	2542 4042	2544 4044	2x4	Code	Rating [A]	Fuseholder	Phase	Cable length	Cable type	Colour
		•	•		**71505035**	16	CH8 Ø8.5x31.5	L1-L2-L3-N	-	-	grey
		•	•		**71505045**	16	Ø6.3x31.5	L1-L2-L3-N	-	-	grey

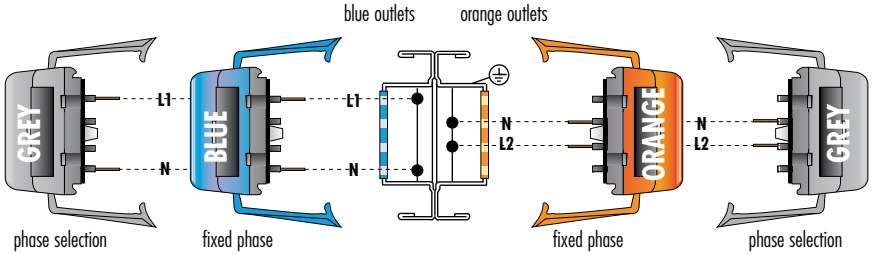
MOBILE CONTACT



(*) 16A contact with 6.3A fuse.

Code		Rating [A]	Fuseholder	Weight Kg
71005028	(*)	16	1	0.010
71005029		16	0	0.010

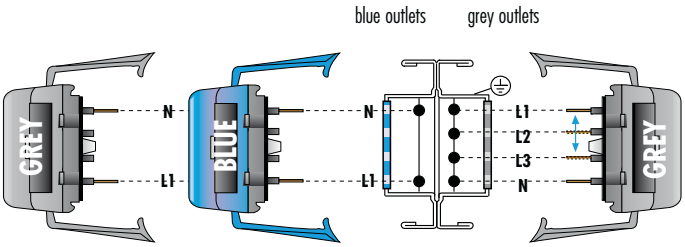
HL 2522
HL 4022



phase selection — fixed phase — fixed phase — phase selection

71505030 **71515030** **71515031** **71505030**
71505031 **71505031**

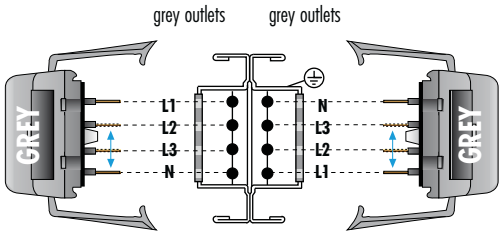
HL 2542
HL 4042



phase selection — fixed phase — fixed phase

71505030 **71515030** **71505030**
71505031 **71505031**

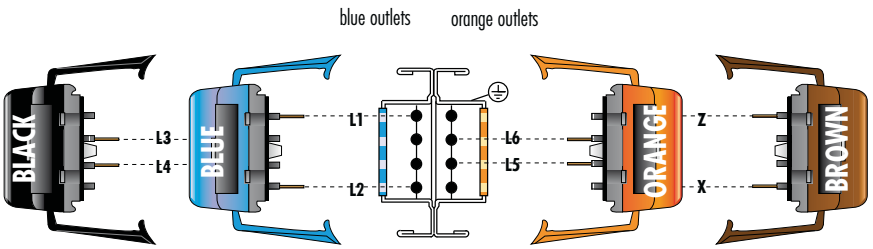
HL 2544
HL 4044



phase selection — phase selection

71505030 **71505030**
71505031 **71505031**

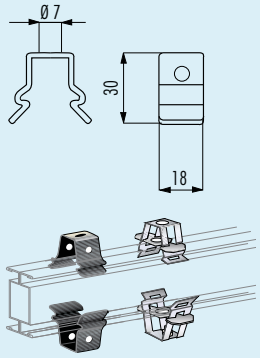
HL 2 x 4



71575031 **71575030** **71575032** **71575033**

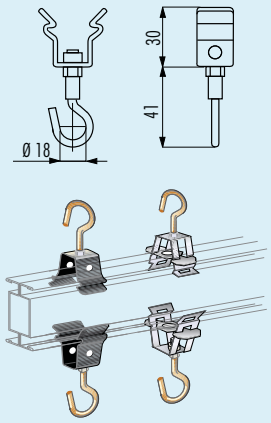
4 independent single phase circuits

SNAP CLAMP (MAX 15 kg)



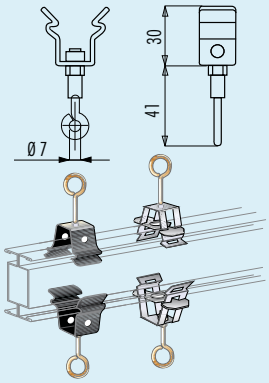
Type	Code	Weight kg
Burnished steel	**71003003**	0.021
Stainless steel	**71203701**	0.021

SUSPENSION HOOK (MAX 15 kg)



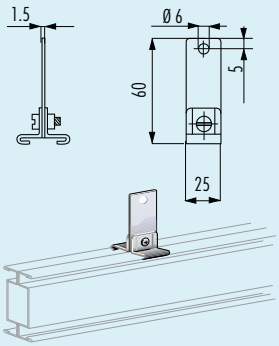
Type	Code	Weight kg
Burnished steel	**71005002**	0.025
Stainless steel	**71203702**	0.025

SUSPENSION RING (MAX 15 kg)



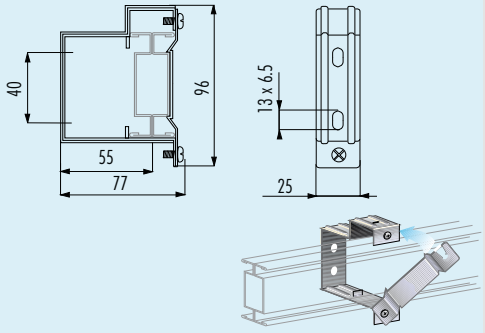
Type	Code	Weight kg
Burnished steel	**71005015**	0.025
Stainless steel	**71203703**	0.025

SIMPLE SUSPENSION CLAMP (MAX 15 kg)



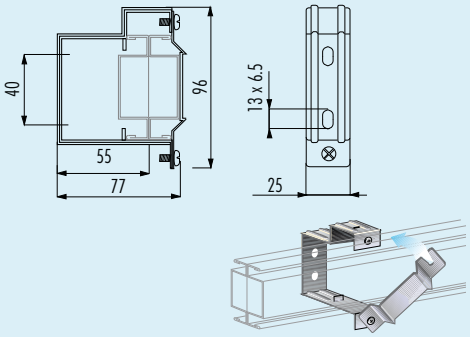
Type	Code	Weight kg
	71003001	0.033

WALL BRACKET



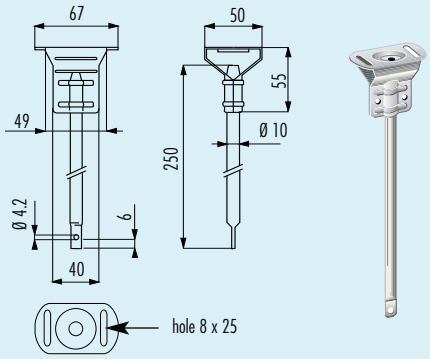
HL 252
HL 402
HL 254
HL 404

Type	Code	Weight kg
	71003009	0.090



HL 2522
HL 4022
HL 2544
HL 4044
HL 2542
HL 4042
HL 2 x 4

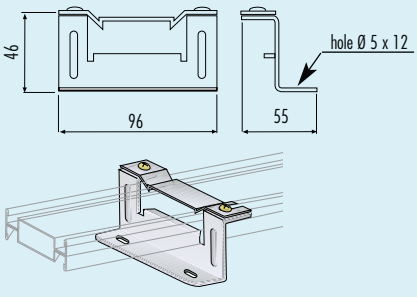
CEILING BRACKET HOLDER



Use with code 71003001: simple suspension hanger.

Type	Code	Weight kg
	73003312	0.136

FLOOR BRACKET



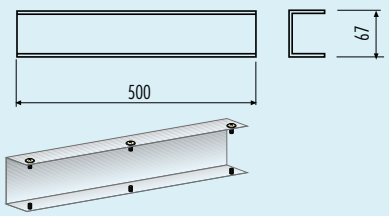
For single HLs version only

compatibility: *HL 252*
HL 402
HL 254
HL 404

Suitable to fixing HLs on the floor in flatwise position.

Type	Code	Weight kg
	71003018	0.090

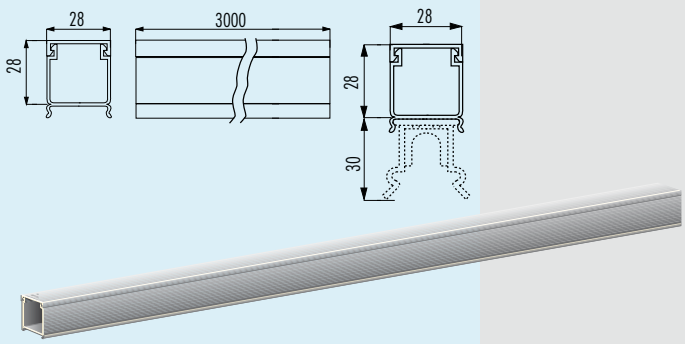
JUNCTION STIFFENER



It strengthens the junction if hangers are more than 5 m spacing.

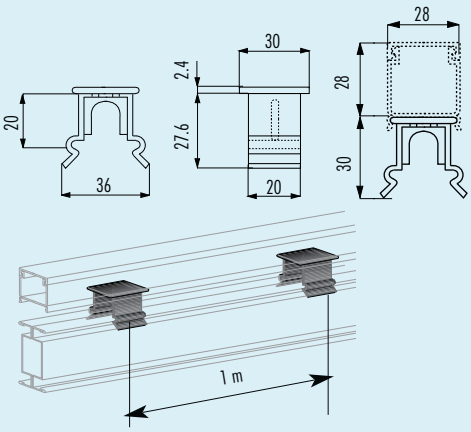
Type	Code	Weight kg
for HLs	**71042024**	0.200
for HLd	**71042025**	0.200

CABLE CHANNEL WITH COVER (PVC)



Type	Code	Length [m]	Weight kg
	71000104	3	0.884

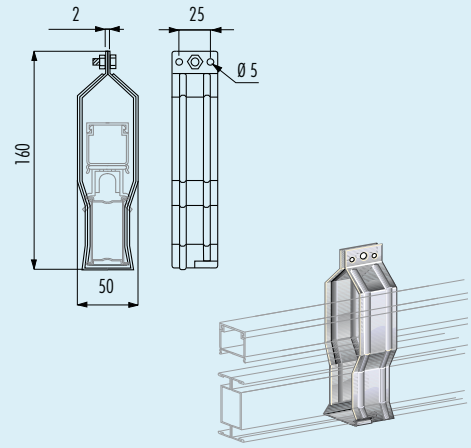
CABLE CHANNEL SPACER



Type	Code	Weight kg
	71003007	0.006

SUSPENSION BRACKET FOR CABLE CHANNEL

SINGLE

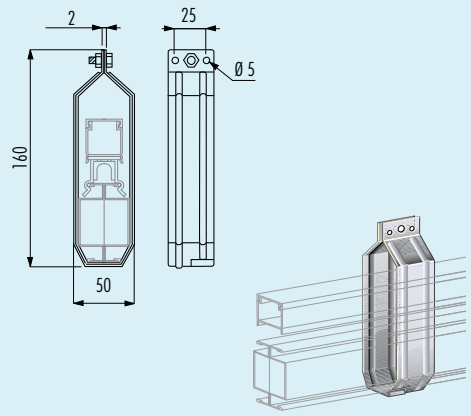


compatibility: *HL 252*
HL 402
HL 254
HL 404

Suspension bracket for busbar and cable channel.

Type	Code	Weight kg
	71003006	0.108

DOUBLE



compatibility: *HL 2522*
HL 4022
HL 2544
HL 4044
HL 2542
HL 4042
HL 2 x 4

Suspension bracket for busbar and cable channel.

Type	Code	Weight kg
	71503006	0.108

NOTES

ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

SERIE LUCE 40 - 63A

SL

INDEX

SL
TECHNICAL DESCRIPTION

GENERAL FEATURES

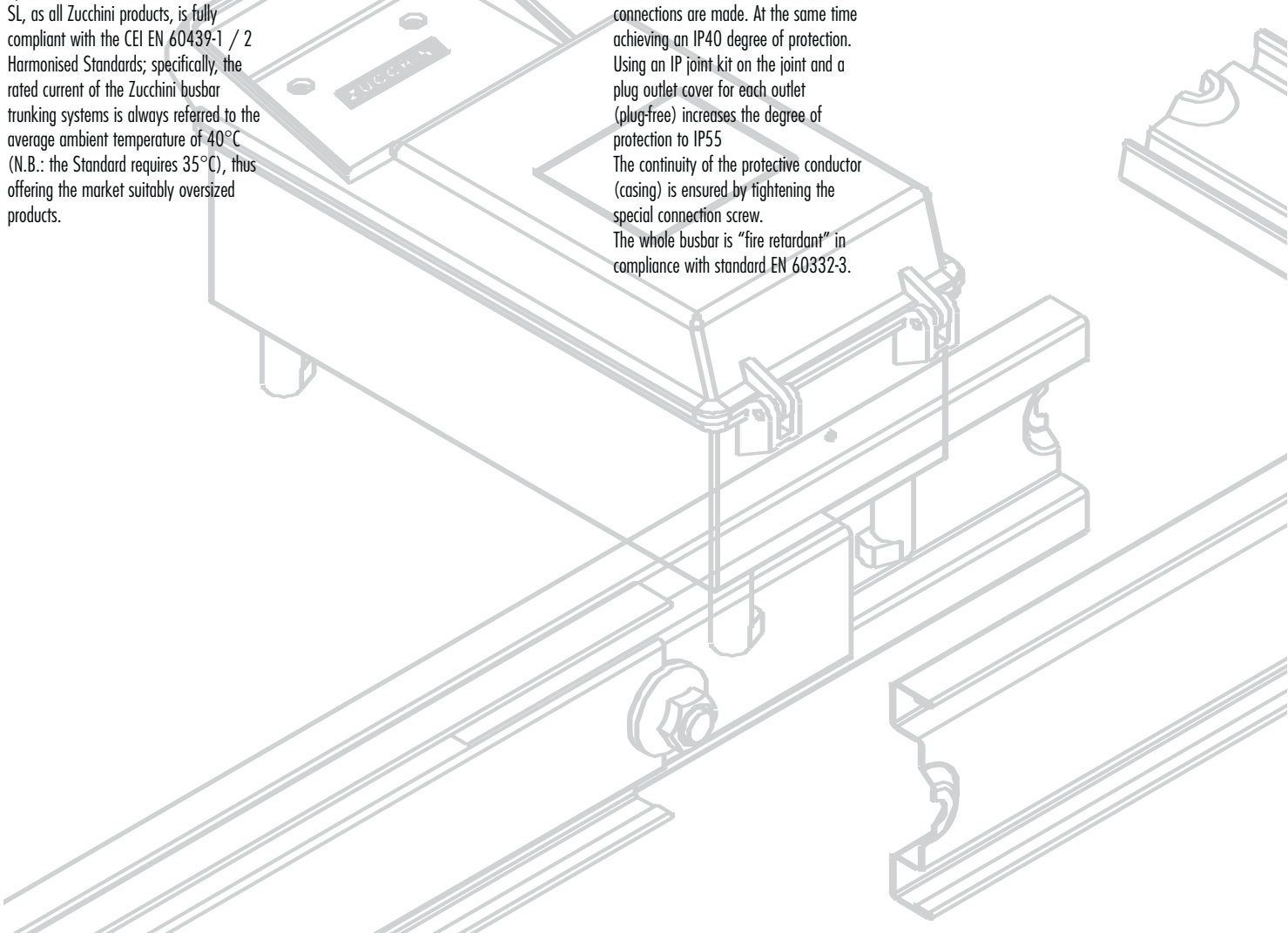
SL (Light Series) is part of the Zucchini range. It can be used for supplying power to three-phase and single-phase devices: industrial refrigerators, lathes, handheld tools, etc. The SL line has compact dimensions but it is extremely strong; it is the smallest line of the Low Power range and has tap-off boxes which can house miniature circuit breakers (Btdin). Zucchini SL is extremely fast and simple to install. In addition, its flexibility can be appreciated during the planning stage and during installation.
Its high mechanical strength, which is a main feature of the SL line, is the result of its particular "beam-type configuration", and also the use of sheet metal of increased thickness.
This line is also suitable for installations in which the bracket fixing centre distance is up to 6 m.
SL, as all Zucchini products, is fully compliant with the CEI EN 60439-1 / 2 Harmonised Standards; specifically, the rated current of the Zucchini busbar trunking systems is always referred to the average ambient temperature of 40°C (N.B.: the Standard requires 35°C), thus offering the market suitably oversized products.

STRAIGHT LENGTHS

Used for distributing power and for supplying low-powered loads.
SL straight elements include the following components:
• a "beam-type" section casing (26x62mm, thickness 0.8 mm), made of hot-galvanised steel (Senzimir) which also serves as a protective conductor due to its cross-section and electrical continuity.
• 4 copper conductors with purity no less than 99.9%.
The cross-section of the conductors is 9.5 mm^2 for a 40A rating and 12.3 mm^2 for a 63A rating; the conductors are separated from each other by a self-extinguishing plastic insulating sheath, type V0 (according to UL94) and in compliance with the incandescent wire test as per EN 60695-2-1 (CEI 50.11).
• tap-off outlets to accept plug-in units and/or tap-off boxes are located on the busbar with a spacing distance of 0.75 m (4 outlets every 3 m).
The outlets have an IP40 degree of protection (IP55 with a plug outlet cover); they open automatically when a box or plug is inserted and close immediately when unplugged.
3-metre straight lengths are also available with 6 or 10 tap-off outlets; these versions, which are characterised by a high density of tap-off points, are particularly suited to raised floor applications or when distributing power when built into a machine;
• an electrical junction block for automatically connecting live conductors.
The connection between two straight lengths is quick: with only one operation both the electrical and mechanical connections are made. At the same time achieving an IP40 degree of protection.
Using an IP joint kit on the joint and a plug outlet cover for each outlet (plug-free) increases the degree of protection to IP55
The continuity of the protective conductor (casing) is ensured by tightening the special connection screw.
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END FEED UNITS

These enable the SL range to be supplied by a cable; the assembly is carried out with a quick joint arrangement as with the straight lengths. The end feed units have connection terminals to accept 25 mm^2 copper cables.
There is an anti-pull cable clamp inside the unit.
The entrance point of the cables is located at the base of the end feed unit.



END COVERS

End covers ensure the IP55 degree of protection at the end of the run.

HANGERS

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:

- simple bracket: when used with its bracket-holder, it enables the installation of the busbar at a distance of about 25 cm below the ceiling ;
- wall bracket: enables the fixing of the run directly onto the wall of a building, setting it at the required clearance to enable the mounting of all the necessary accessories;
- snap clamp: the snap-on installation is extremely fast.

This clamp can be used both for suspending the busbar from the ceiling and for hanging accessories such as fluorescent lamps, tap-off boxes, etc. on the busbar;

- snap clamp with ring or hook: the ring or hook enables accessories to be mounted onto the busbar.

The technical chart on page 140 shows the suspension centre distance according to the maximum load distributed between two fixing points.

TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Zucchini is able to offer different technical solutions:
a) 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 IP40 degree of protection with just one operation (IP55 when IP joint kits are added).
The continuity of the protective conductor, made from the casing of the element itself, is ensured by tightening the special connection screw.
b) 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 appropriate spacers and brackets which retain the cable-channel system. The channel is 3 m long.
Its dimensions are 28x28 mm.

PLUG-IN UNITS AND TAP-OFF BOXES

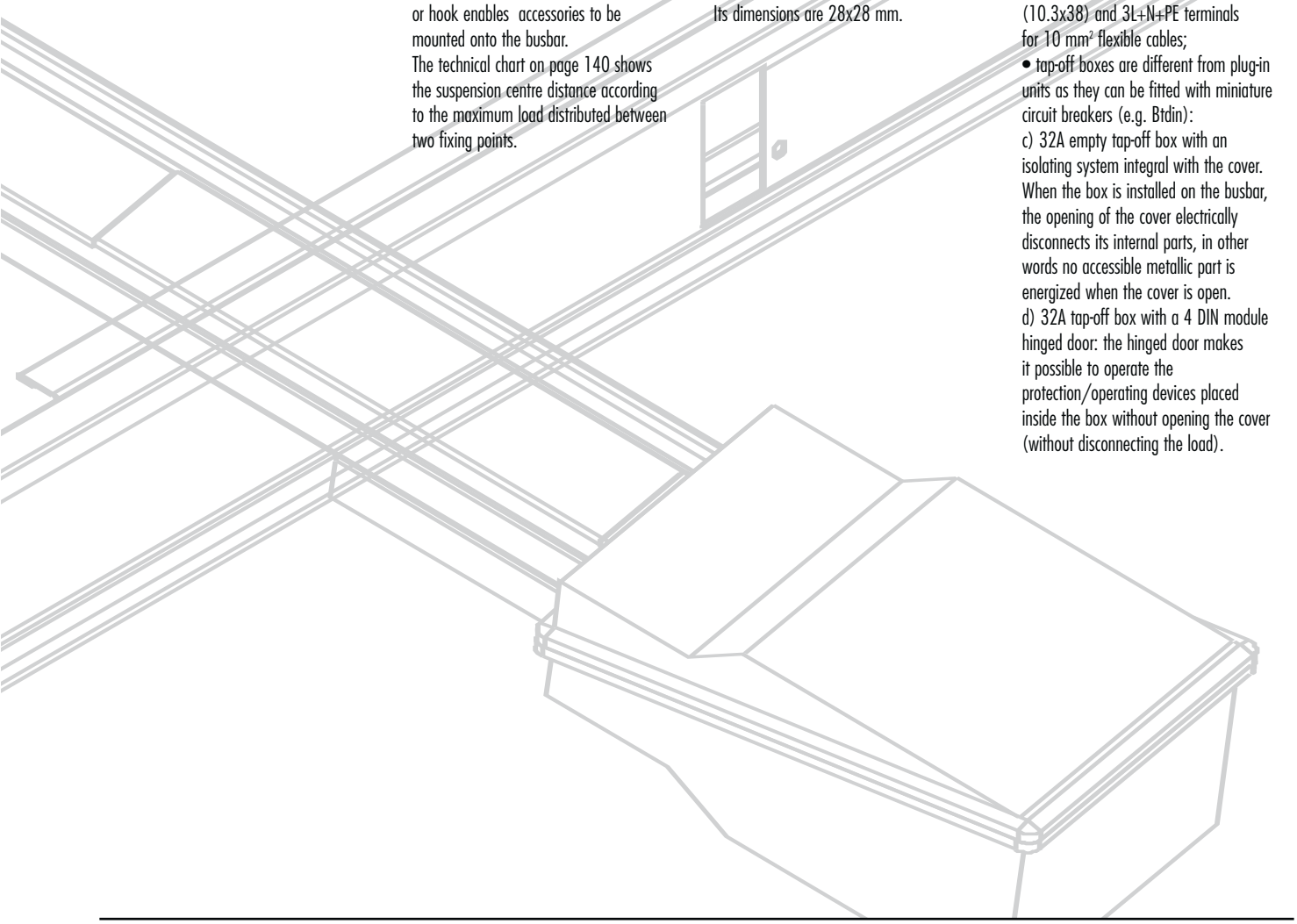
These are used for connecting and supplying small single-phase and three-phase loads: they include the following features:

- they can be operated when energized and when under load conditions;
- 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 V1 self-extinguishing degree (UL94);
- the standard degree of protection is IP55 without using additional IP protection kits;

a) 32A three-phase plug-in units with 3L+N+PE terminals for 10 mm^2 flexible cables;
b) 32A three-phase plug-in units with cylindrical fuseholder – CH10 type (10.3x38) and 3L+N+PE terminals for 10 mm^2 flexible cables;

- tap-off boxes are different from plug-in units as they can be fitted with miniature circuit breakers (e.g. Btdin):

c) 32A empty tap-off box with an isolating system integral with the cover. When the box is installed on the busbar, the opening of the cover electrically disconnects its internal parts, in other words no accessible metallic part is energized when the cover is open.
d) 32A tap-off box with a 4 DIN module hinged door: the hinged door makes it possible to operate the protection/operating devices placed inside the box without opening the cover (without disconnecting the load).



SL

SERIE LUCE

LIGHTING AND DISTRIBUTION LINES

Unified end cover: it completes the run and guarantees the degree of protection of the run.

32A tap-off box with transparent cover and door for 4 DIN modular switches/mcb.

Ring clamp for lamps or to hang the busbar by a chain.

Snap clamp

LINE DETAILS

Tap-off box

Flexible joint

Shopping centres

Small-sized industries

Hook clamp for lamps

Three-phase 32A plugs, available with 3xCH fuseholder.

Straight lengths with one outlet every metre on one side only, and already fitted outlet covers. On request lengths with 6 outlets every 500 mm are also available.

Right or left end feed unit depending on line direction. Supplied with cable gland and terminals for 25mm^2 flexible cables.

SERIE LUCE

Wall bracket

Hook, ring and snap STAINLESS STEEL clamps

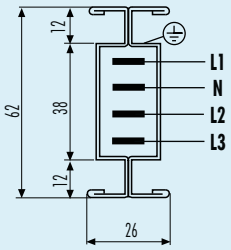
Simple suspension bracket

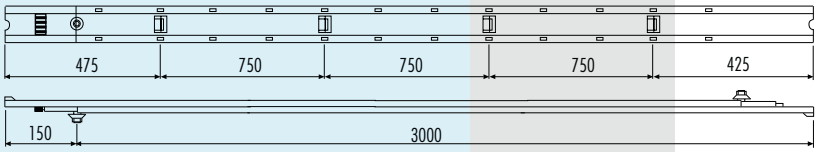
Outlet cover (spare part).

STRAIGHT LENGTHS

Lengths with 6 or 10 outlets are also available.

Type	Code	Length [m]	Rating [A]	outlets n.	Weight kg
SL40	**70400101**	3	40	4	6.200
SL40	**70400111**	3	40	6	6.800
SL40	**70400112**	3	40	10	7.300
SL40/63	**70600102**	1.5	63	2	3.850
SL63	**70600101**	3	63	4	6.500
SL63	**70600111**	3	63	6	6.900
SL63	**70600112**	3	63	10	7.400
SL40/63	**70600102**	1.5	63	2	3.850

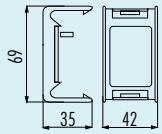




PLUG-OUTLET COVER IP55

Add 4 outlet covers for each 3m element to get a complete IP55 degree of protection.

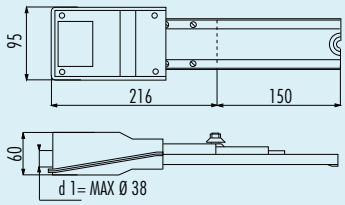
Type	Code	Weight kg
	71002062	0.017

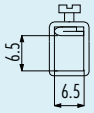


RIGHT END FEED UNIT

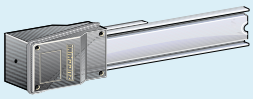
For cable glands see page 134

Type	Code	Weight kg
IP 55	**70601061**	0.750





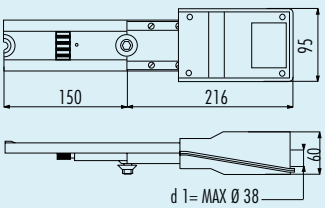
Max cable size 25 mm²

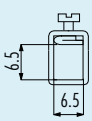


LEFT END FEED UNIT

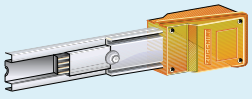
For cable glands see page 134

Type	Code	Weight kg
IP 55	**70601062**	0.826

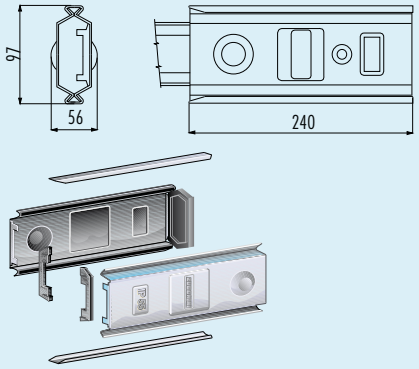




Max cable size 25 mm²



END COVER IP55

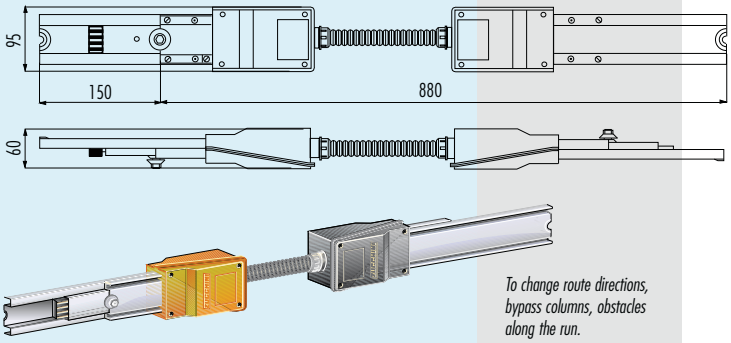


It guarantees the IP55 protection degree at the end of the run.

To be used with both right and left end feed units.

Type	Code	Weight kg
	71001351	0.570

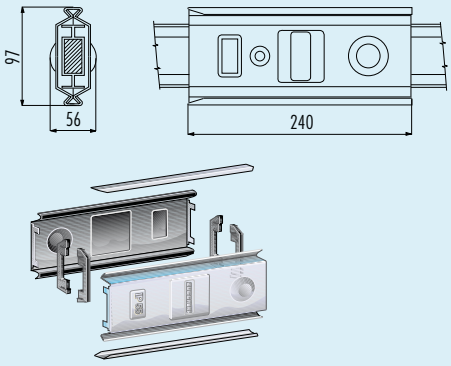
FLEXIBLE JOINT



To change route directions, bypass columns, obstacles along the run.

Type	Code	Weight kg
	70601261	1.900

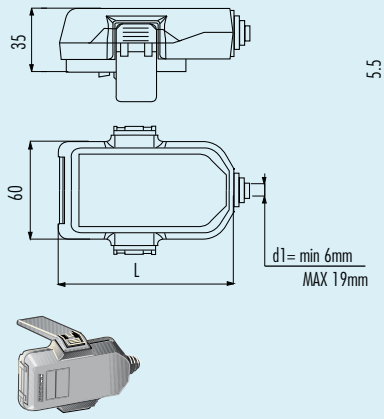
JOINT COVER IP55



It guarantees the IP55 degree of protection on the joint.

Type	Code	Weight kg
	71002051	0.474

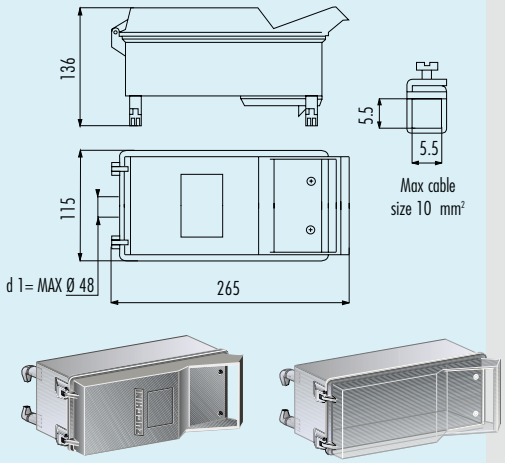
32A PLUGS



(•) Fuses not included

Type	Code	Rating [A]	Fuse	L= [mm]	Weight [kg]
IP 55	**70605051**	32	-	80	0.070
IP 55	**70605052**	32	CH 10.3x38 •	105	0.100

32A PLUG-IN BOX (EMPTY)

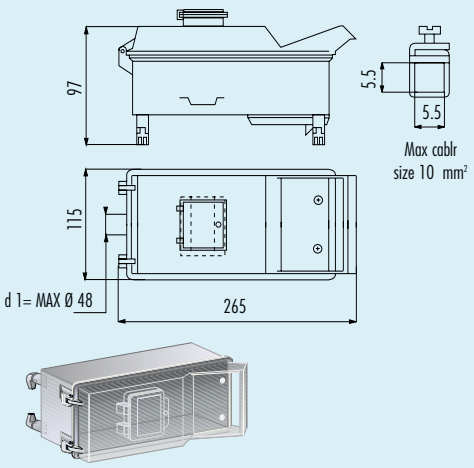


For cable glands see page 134

Type	Code	Characteristic	Weight [kg]
IP 55	**70605054**	Grey cover	0.700
IP 55	**70605055**	Transparent cover	0.700

32A PLUG-IN BOX WITH TRANSPARENT COVER AND DOOR

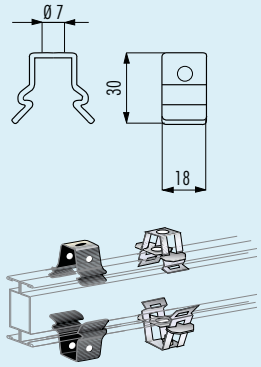
(For max 4 DIN module breakers)



For cable glands see page 134

Type	Code	Weight [kg]
IP 55	**70605053**	0.800

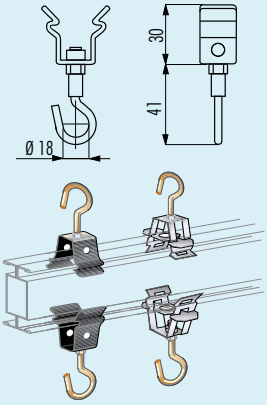
SNAP CLAMP (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
Burnished steel	**71003003**	0.021
Stainless steel	**71203701**	0.021

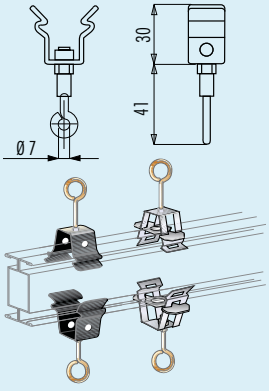
SUSPENSION HOOK (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
Burnished steel	**71005002**	0.025
Stainless steel	**71203702**	0.025

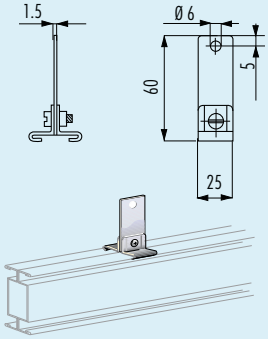
SUSPENSION RING (MAX 15 kg)



Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
Burnished steel	**71005015**	0.025
Stainless steel	**71203703**	0.025

SIMPLE SUSPENSION CLAMP (MAX 15 kg)

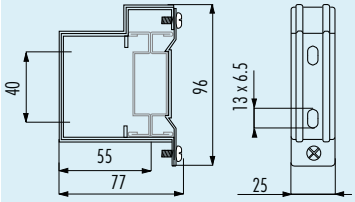


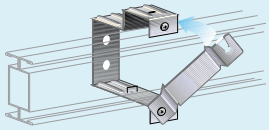
Suspension accessory to be fixed on element edges.

Type	Code	Weight kg
	71003001	0.033

WALL SUSPENSION BRACKET

Type	Code	Weight kg
	71003009	0.090

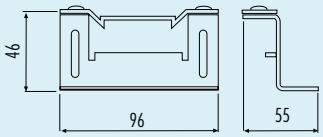


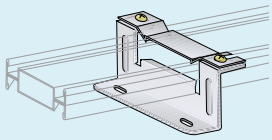


FLOOR BRACKET

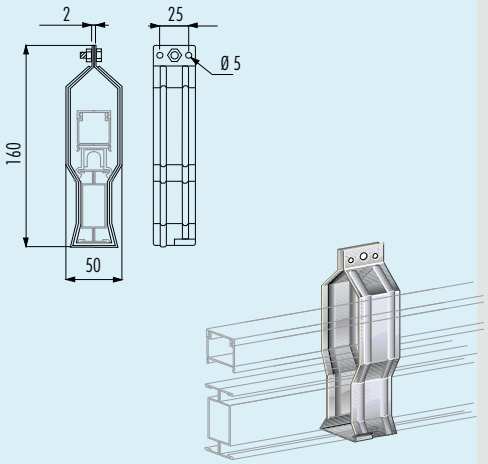
Type	Code	Weight kg
	71003018	0.090

Suitable to fix elements on the floor in flatwise position.





SUSPENSION BRACKET FOR CHANNEL

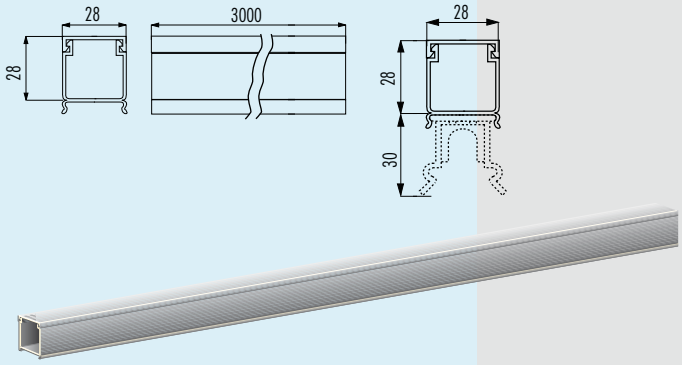


compatibility: SL 40
SL 63

Suspension bracket for trunking line and cable channel.

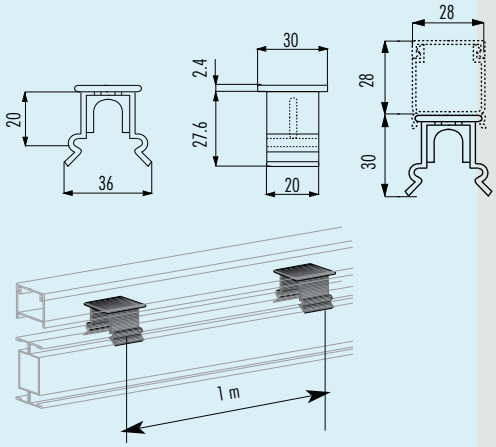
Type	Code	Weight kg
	71003006	0.108

CABLE CHANNEL WITH COVER (PVC)



Type	Code	Length [m]	Weight kg
	71000104	3	0.884

CHANNEL SPACER



In your Purchase Order add a spacer for every channel metre.

Type	Code	Weight kg
	71003007	0.006

ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

MINI SBARRA 63 - 100 - 160A

MS

INDEX

MS
TECHNICAL DESCRIPTION

GENERAL FEATURES

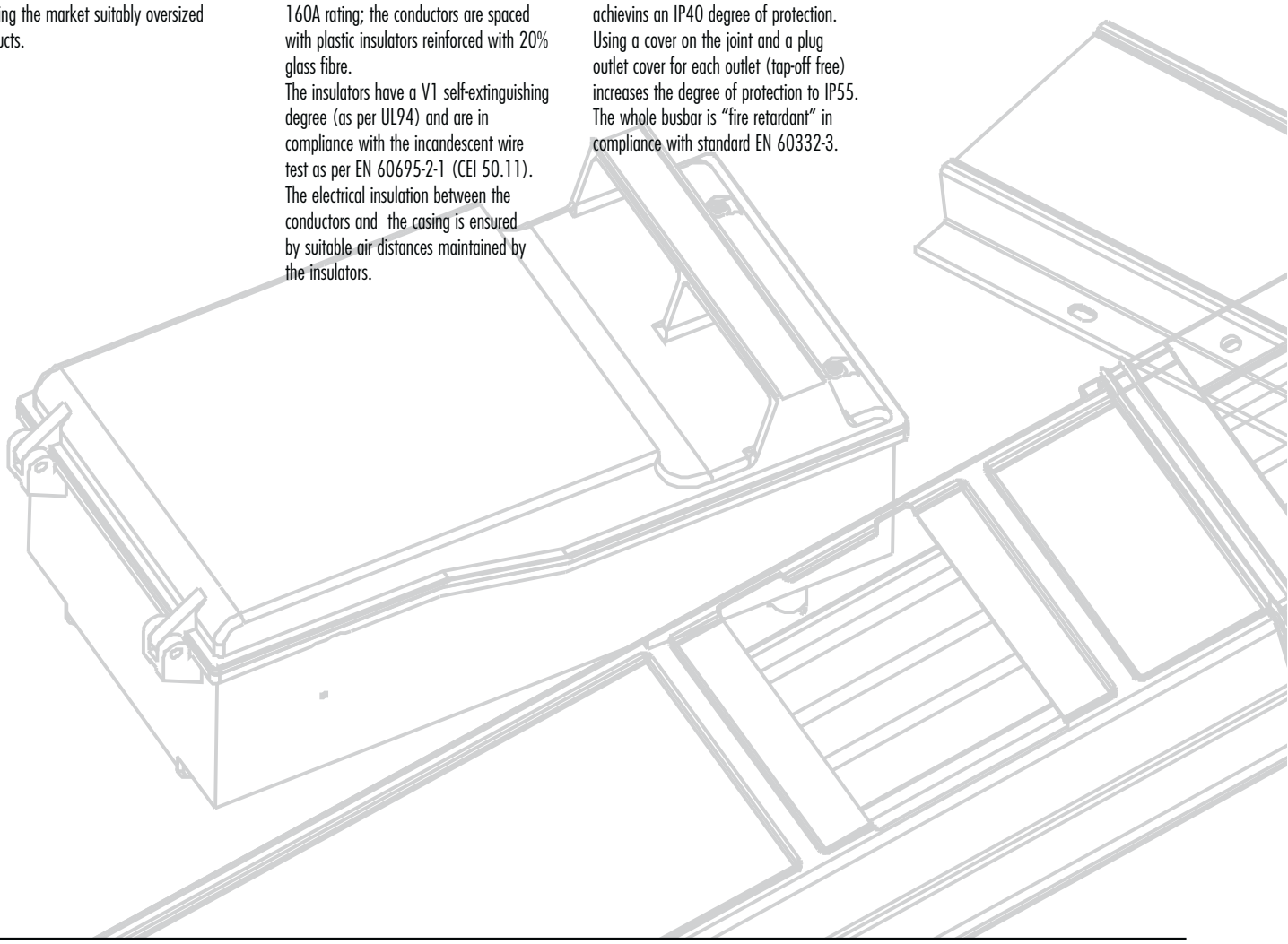
The MS (Mini Busbar) range is used for distributing low-medium power.
The MS line has compact dimensions but it is extremely strong; it is the smallest line of the Medium Power range.
The space inside the tap-off boxes is enough to contain up to 16 DIN modules (e.g. Btdin switches).
Zucchini MS is extremely fast and simple to install. In addition, its flexibility can be appreciated during the planning stage and during installation, thus meeting the requirements when frequently changing the arrangement of the loads within a small company or laboratory.
MS, as all Zucchini products, is fully compliant with the CEI EN 60439-1 / 2 Harmonised Standards;specifically, the rated current of the Zucchini busbar trunking system is always referred to the average ambient temperature of 40°C (N.B.: the Standard requires 35°C), thus offering the market suitably oversized products.

STRAIGHT LENGTHS

Used for distributing power and for supplying low-medium power loads.
MS straight lengths include the following components:
• two "omega-shaped", ribbed, sealed section casing (39x97mm, thickness 0.8 mm), made of hot-galvanised steel (Senzimir) which also serve as a protective conductor due to its good cross-section and electrical continuity.
• 4 conductors with the same section 3L+N.
The conductors are made from an aluminium alloy, copper plated with a final coat of tin for the 63A and 100A ratings, whereas for the 160A ratings, the conductors are made of electrolytic copper with purity no less than 99.9%.
The cross-section of the conductors is 26 mm^2 (Al) for a 63A rating, 39 mm^2 (Al) for a 100A rating and 39 mm^2 (Cu) for a 160A rating; the conductors are spaced with plastic insulators reinforced with 20% glass fibre.
The insulators have a V1 self-extinguishing degree (as per UL94) and are in compliance with the incandescent wire test as per EN 60695-2-1 (CEI 50.11).
The electrical insulation between the conductors and the casing is ensured by suitable air distances maintained by the insulators.
• tap-off outlets to accept tap-off boxes are located on the busbar with a spacing distance of 1 m (3+3 outlets every 3m). The outlets are normally closed but open automatically by inserting a tap-of box and reclose when the tap-off is removed.
• an electrical junction block for automatically connecting live conductors and the PE. The block is made of 4 silver-plated copper contacts with independent springs which make up the live conductor series. The continuity of the protective conductor (casing) is completed when the screws on the casing are tightened near the joint.
A silver-plated contact, integral with the electrical junction block, sets up and ensures the continuity of the PE conductor.
The connection between two straight lengths is quick: with only one operation both the electrical and mechanical connections are made. At the same time, achievins an IP40 degree of protection.
Using a cover on the joint and a plug outlet cover for each outlet (tap-off free) increases the degree of protection to IP55.
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END FEED UNITS

These enable the MS range to be supplied by cable ; the assembly is carried out with a quick connection device as with the straight lengths.
The end feed units have connection terminals to accept up to 35 mm^2 copper cables for a 63/100A supply and 70 mm^2 for a 160A supply.
The entrance point of the cables is located at the base of the end feed unit.
The MS range has centre feed units and end feed boxes with a switch; this solution makes it possible to disconnect the whole run to carry out maintenance operations or modifications to the layout.



END COVERS

An end cover ensures the IP55 degree of protection at the end of the run.

HANGERS

In order to fix the line to the structure of the building, directly or with a wall bracket, it is necessary to use a bracket which serves as a busbar collar.
The bracket has holes so it can be easily used with the brackets available in the Zucchini catalogue.

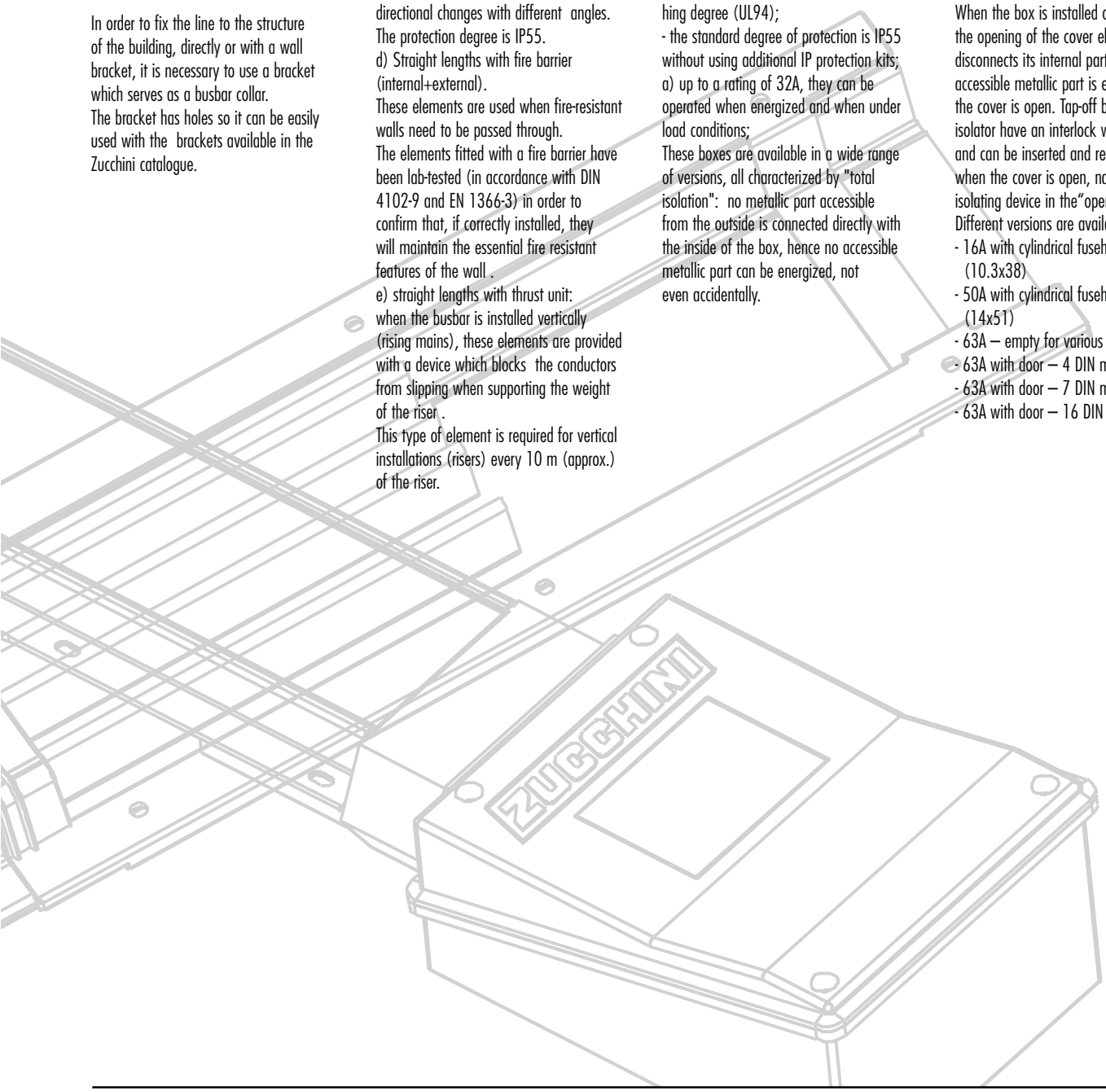
TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on different installation requirements, Zucchini offers different technical solutions:
a) 90° angles: available for changing routes both horizontally and vertically. The joint is of the quick type as with the straight lengths. The degree of protection is IP55.
b) T and X elements: available for making elbows . The degree of protection is IP55.
c) flexible angle: this element is available for 63-100A ratings and makes possible directional changes with different angles. The protection degree is IP55.
d) Straight lengths with fire barrier (internal+external).
These elements are used when fire-resistant walls need to be passed through.
The elements fitted with a fire barrier have been lab-tested (in accordance with DIN 4102-9 and EN 1366-3) in order to confirm that, if correctly installed, they will maintain the essential fire resistant features of the wall .
e) straight lengths with thrust unit:
when the busbar is installed vertically (rising mains), these elements are provided with a device which blocks the conductors from slipping when supporting the weight of the riser .
This type of element is required for vertical installations (risers) every 10 m (approx.) of the riser.

TAP-OFF BOXES

These are used for connecting and supplying single-phase and three-phase loads up to 63A: they include the following features:
• the PE contact (protective conductor) is the first to make an electrical connection when the tap-off is plugged into the outlet, and the last to disconnect when the tap-off is unplugged;
• all insulating plastic components comply with the incandescent wire test (EN 60695-2-1) and have a V1 self-extinguishing degree (UL94);
- the standard degree of protection is IP55 without using additional IP protection kits;
a) up to a rating of 32A, they can be operated when energized and when under load conditions;
These boxes are available in a wide range of versions, all characterized by "total isolation": no metallic part accessible from the outside is connected directly with the inside of the box, hence no accessible metallic part can be energized, not even accidentally.

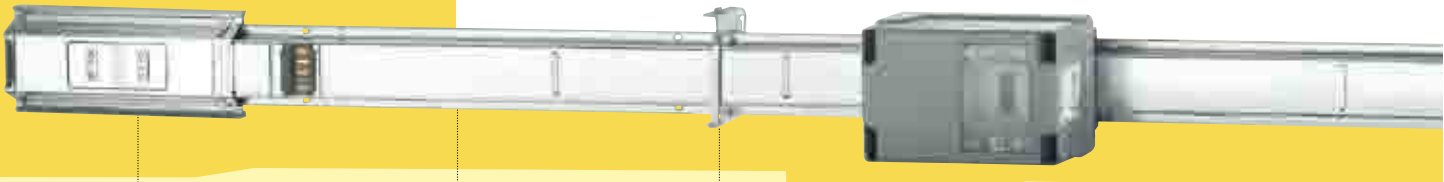
Different versions are available:
- empty box (with a terminal block for connecting the cables), with internal DIN guide and transparent hinged door to see and operate the protection devices that can be installed inside the box.
- with cylindrical fuseholder – CH10 type (10.3x38)
- with cylindrical fuseholder – DIAZED (D01: 16A; D02: 32A)
- 16A tap-off box up to 63A with a switch device integral with the cover.
When the box is installed on the busbar, the opening of the cover electrically disconnects its internal parts, ensuring no accessible metallic part is energized when the cover is open. Tap-off boxes with an isolator have an interlock with the cover and can be inserted and removed only when the cover is open, namely with the isolating device in the"open" position.
Different versions are available:
- 16A with cylindrical fuseholder – CH10 (10.3x38)
- 50A with cylindrical fuseholder – CH14 (14x51)
- 63A – empty for various applications
- 63A with door – 4 DIN mod.
- 63A with door – 7 DIN mod.
- 63A with door – 16 DIN mod.



MS

MINI SBARRA

**BUSBAR TRUNKING SYSTEM
FOR LOW AND MEDIUM POWER**



Complete end cover: it completes the run and guarantees the IP55 degree of protection.

Straight elements with one outlet every metre on both sides, supplied with fitted outlet covers.

Wall bracket.

LINE DETAILS

Centre feed unit

Horizontal elbow

Vertical elbow

Laboratories

Small and middle-sized industries

Shopping centres

MINI SBARRA

Tap-off box with terminals for cables up to 25mm². Made from self-extinguishing plastic material, it has a good mechanical resistance and withstands tracking well. Plug-in tap-off boxes can be plugged in and pulled out under load. Ratings from 16A to 32A.

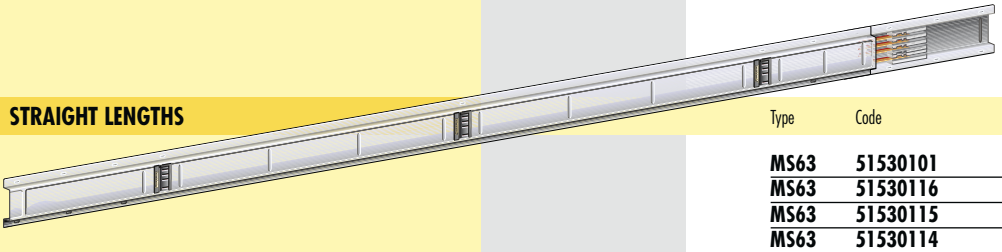
Joint cover. It guarantees the IP55 degree of protection at the joint.

End feed unit

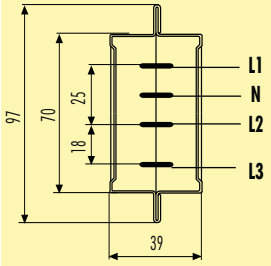
Tap-off boxes

Gasket and joint cover IP55

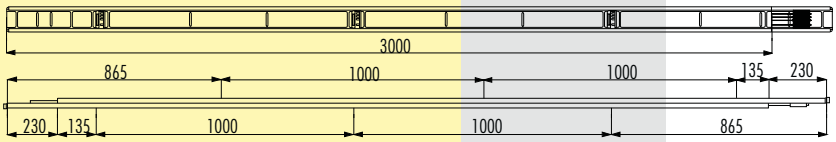
IP55 outlet cover



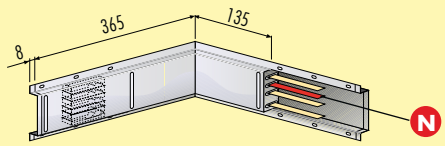
STRAIGHT LENGTHS



	Type	Code	Length [m]	Rating [A]	Weight kg
	MS63	**51530101**	3	63	7.890
	MS63	**51530116**	2	63	5.260
	MS63	**51530115**	1.5	63	3.945
	MS63	**51530114**	1	63	2.630
	MS63	**51530112**	< 1.5	63	-
	MS63	**51530113**	> 1.5	63	-
			SPECIAL ELEMENTS		
fire barrier	**MS63**	**51530131**	3	63	7.990
thrust unit	**MS63**	**51530141**	3	63	7.890
	MS100	**51510101**	3	100	7.890
	MS100	**51510116**	2	100	5.260
	MS100	**51510115**	1.5	100	3.945
	MS100	**51510114**	1	100	2.630
	MS100	**51510112**	< 1.5	100	-
	MS100	**51510113**	> 1.5	100	-
			SPECIAL ELEMENTS		
fire barrier	**MS100**	**51510131**	3	100	7.990
thrust unit	**MS100**	**51510141**	3	100	7.890
	MS160	**51520101**	3	160	9.290
	MS160	**51520116**	2	160	6.190
	MS160	**51520115**	1.5	160	4.645
	MS160	**51520114**	1	160	3.100
	MS160	**51520112**	< 1.5	160	-
	MS160	**51520113**	> 1.5	160	-
			SPECIAL ELEMENTS		
fire barrier	**MS160**	**51520131**	3	160	10.29
thrust unit	**MS160**	**51520141**	3	160	9.290



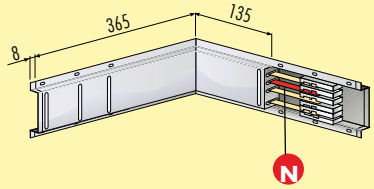
RIGHT HORIZONTAL ELBOW



Right and left elbows differ because of the position of junction blocks.

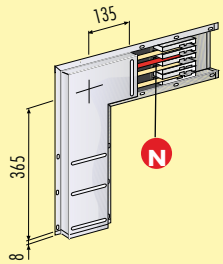
Type	Code		Weight kg
MS63	**51530351**	IP55	1.600
MS100	**51500361**	IP55	1.600
MS160	**51520351**	IP55	2.600

LEFT HORIZONTAL ELBOW



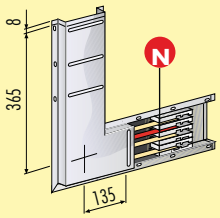
Type	Code		Weight kg
MS63	**51530361**	IP55	1.600
MS100	**51500362**	IP55	1.600
MS160	**51520361**	IP55	2.600

RIGHT VERTICAL ELBOW



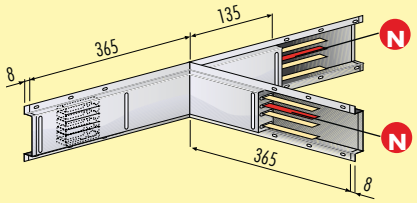
Type	Code		Weight kg
MS63	**51530451**	IP55	1.600
MS100	**51500461**	IP55	1.700
MS160	**51520451**	IP55	2.700

LEFT VERTICAL ELBOW



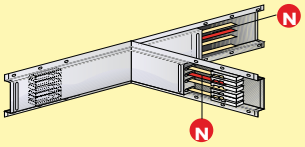
Type	Code		Weight kg
MS63	**51530461**	IP55	1.600
MS100	**51500462**	IP55	1.600
MS160	**51520461**	IP55	2.600

RIGHT TEE UNIT - RIGHT 1 (A1)



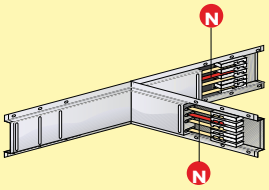
Type	Code		Weight kg
MS63	**51530551**	IP55	2.290
MS100	**51500561**	IP55	2.290
MS160	**51520551**	IP55	3.790

RIGHT TEE UNIT - RIGHT 2 (A2)



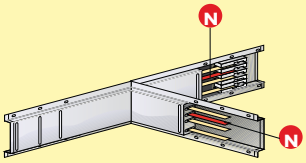
Type	Code		Weight kg
MS63	**51530571**	IP55	2.290
MS100	**51500563**	IP55	2.290
MS160	**51520571**	IP55	3.790

LEFT TEE UNIT - LEFT 1 (B1)



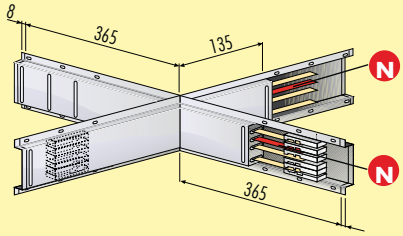
Type	Code		Weight kg
MS63	**51530561**		2.290
MS100	**51500562**		2.290
MS160	**51520561**		3.790

LEFT TEE UNIT - LEFT 2 (B2)



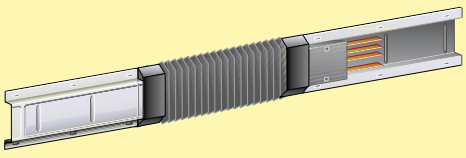
Type	Code		Weight kg
MS63	**51530581**	IP55	2.290
MS100	**51500564**	IP55	2.290
MS160	**51520581**	IP55	3.790

HORIZONTAL CROSS ELEMENT



Type	Code		Weight kg
MS63	**51530651**	IP55	2.290
MS100	**51500661**	IP55	2.290
MS160	**51520651**	IP55	3.790

FLEXIBLE ELBOW

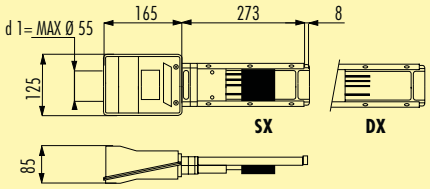


Not available for 160A rating

Type	Code		Weight kg
MS63	**51511261**	IP55	2.290
MS100	**51511261**	IP55	2.290

END FEED UNIT IP55

MS63 - MS100

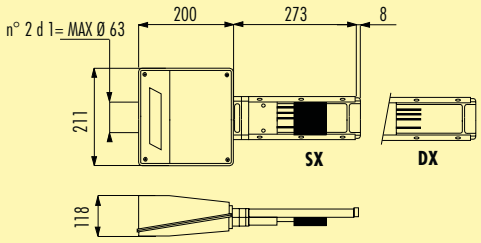


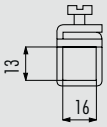
Max cable size 35 mm²

For cable glands see page 134

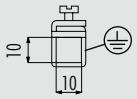
Type	Code	MS 63	MS 100	MS160	Weight kg
Right	**51511051**	•	•		1.732
Left	**51511052**	•	•		1.874

MS160

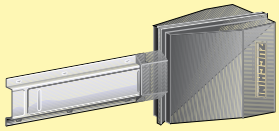




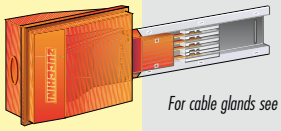
Max cable size 70 mm²



Max cable size 35 mm²



DX



SX

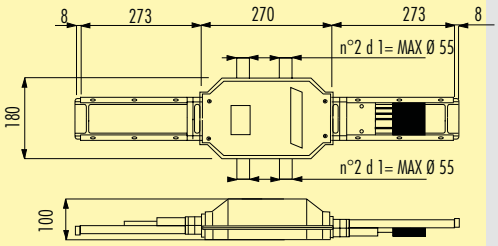
For cable glands see page 134

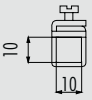
With in-line bus switches on request.

Type	Code	MS 63	MS 100	MS160	Weight kg
Right	**51521051**			•	2.218
left	**51521052**			•	2.360

CENTRE FEED UNIT

MS63 - MS100



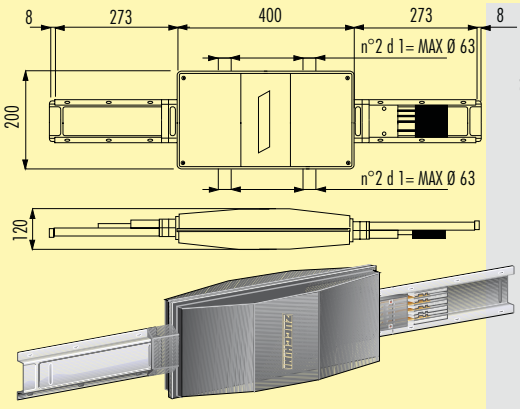


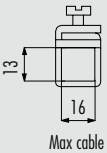
Max cable size 35 mm²

For cable glands see page 134

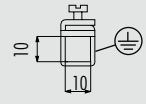
Type	Code	MS 63	MS 100	MS160	Weight kg
IP 55	**51511151**	•	•		3.500

MS160





Max cable size 70 mm²

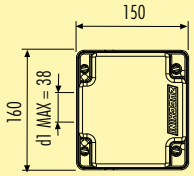


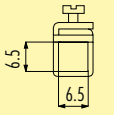
Max cable size 35 mm²

For cable glands see page 134

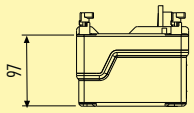
Type	Code	MS 63	MS 100	MS160	Weight kg
IP 55	**51521151**			•	5.000

PLUG-IN BOXES





Max cable size 25 mm²



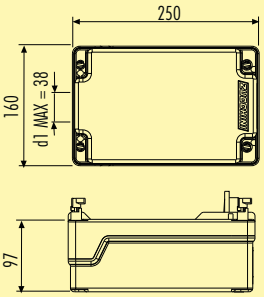
Type	Code	Weight kg
EMPTY TAP-OFF BOX WITH DIN 4MW		
32A	**51515071**	0.680
TAP-OFF BOX WITH CH10 FUSEHOLDER (10.3X38)		
32A	**51515076**	0.680
TAP-OFF BOX WITH D01 FUSEHOLDER		
16A	**51515077**	0.950
TAP-OFF BOX WITH D02 FUSEHOLDER		
32A	**51515078**	0.950
TAP-OFF BOX FOR 4 MODULES DIN		
32A	**51515072**	0.730

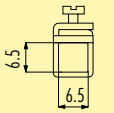
MAX power losses 10W

Energy withstand 400·10³ A²s

Totally insulated tap-off box

PLUG-IN BOXES





Max cable size 25 mm²

Type	Code	Weight kg
EMPTY TAP-OFF BOX WITH DIN 8MW		
32A	**51515073**	0.930
TAP-OFF BOX WITH 4 MODULES DIN (LONG VERSION)		
32A	**51515074**	0.960
TAP-OFF BOX WITH 8 MODULES DIN (LONG VERSION)		
32A	**51515075**	0.990

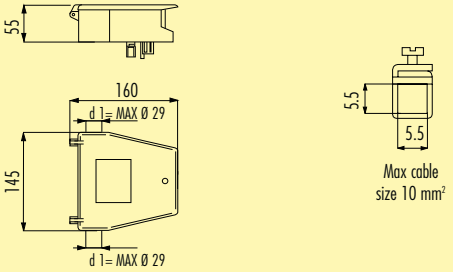
MAX power losses 16W

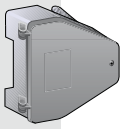
Energy withstand 400·10³ A²s

Totally insulated tap-off box

MS

TAP-OFF BOX WITH CH10 FUSEHOLDER (10.3X38)

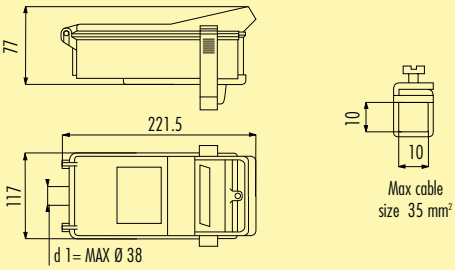


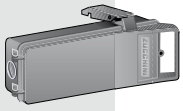


- *10.3 x 38 fuses not included*

Type	Code	Weight kg
16A	**51515051**	0.908

TAP-OFF BOX WITH CH14 FUSEHOLDER (14X51)

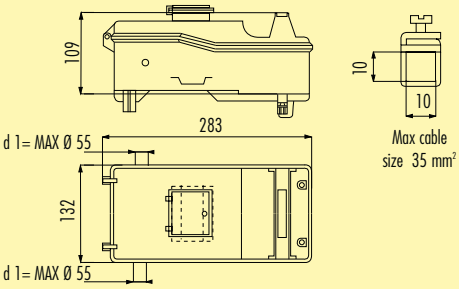


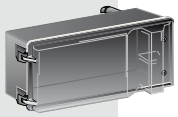


- *14 x 51 fuses not included*

Type	Code	Weight kg
50A	**51515052**	0.908

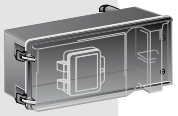
63A TAP-OFF BOXES





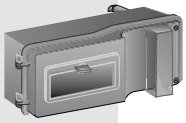
TAP-OFF BOX WITH TRANSPARENT COVER

Type	Code	Weight kg
63A	**51515057**	1.100



TAP-OFF BOX WITH TRANSPARENT COVER AND HINGED DOOR (UP TO 4 MODULES DIN)

Type	Code	Weight kg
63A	**51515056**	1.200



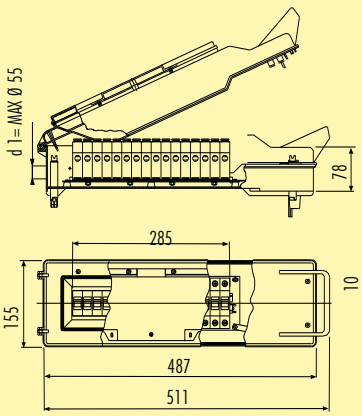
TAP-OFF BOX WITH HINGED DOOR (UP TO 7 MODULES DIN)

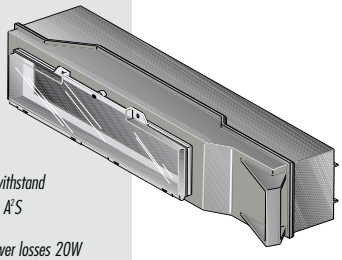
Type	Code	Weight kg
63A	**51515067**	1.100

Energy withstand
400·10³ A²S

MAX power losses 20W

TAP-OFF BOX WITH HINGED DOOR (UP TO 16 MODULES DIN)





Type	Code	Weight kg
63A	**51515058**	2.500

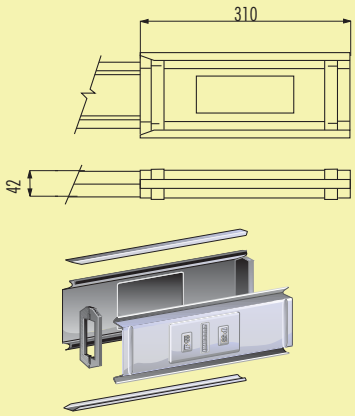
Energy withstand
400·10³ A²S

MAX power losses 20W

For cable glands see page 134

END COVER IP55

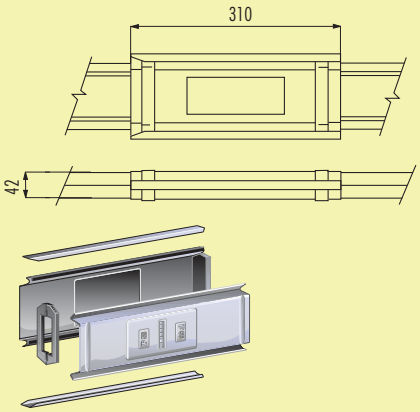
Type	Code	Weight kg
All	**51501351**	0.570



IP55 JOINT COVER WITH GASKET

1 for each joint

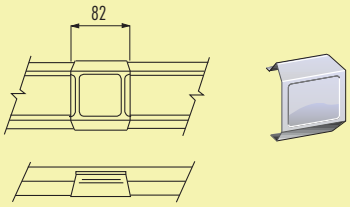
Type	Code	Weight kg
All	**51500161**	0.838



IP55 PLUG-OUTLET COVER

6 per 3m. straight length

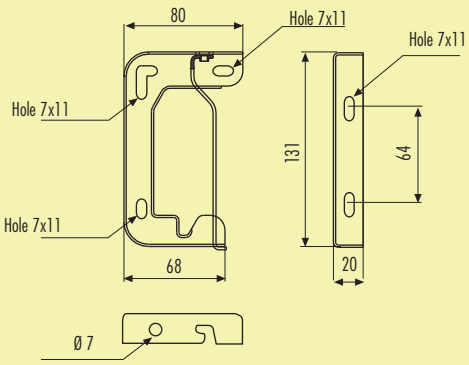
Type	Code	Weight kg
All	**51500160**	0.061

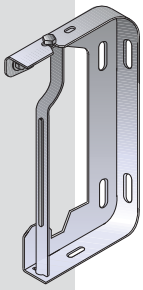


HANGER (1 every 2m)

1 per 2 m

Type	Code	Weight kg
All	**51002002**	0.100





MS

ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

MEDIUM RATING 160 - 1000A

MR

INDEX

MR
TECHNICAL DESCRIPTION

GENERAL FEATURES

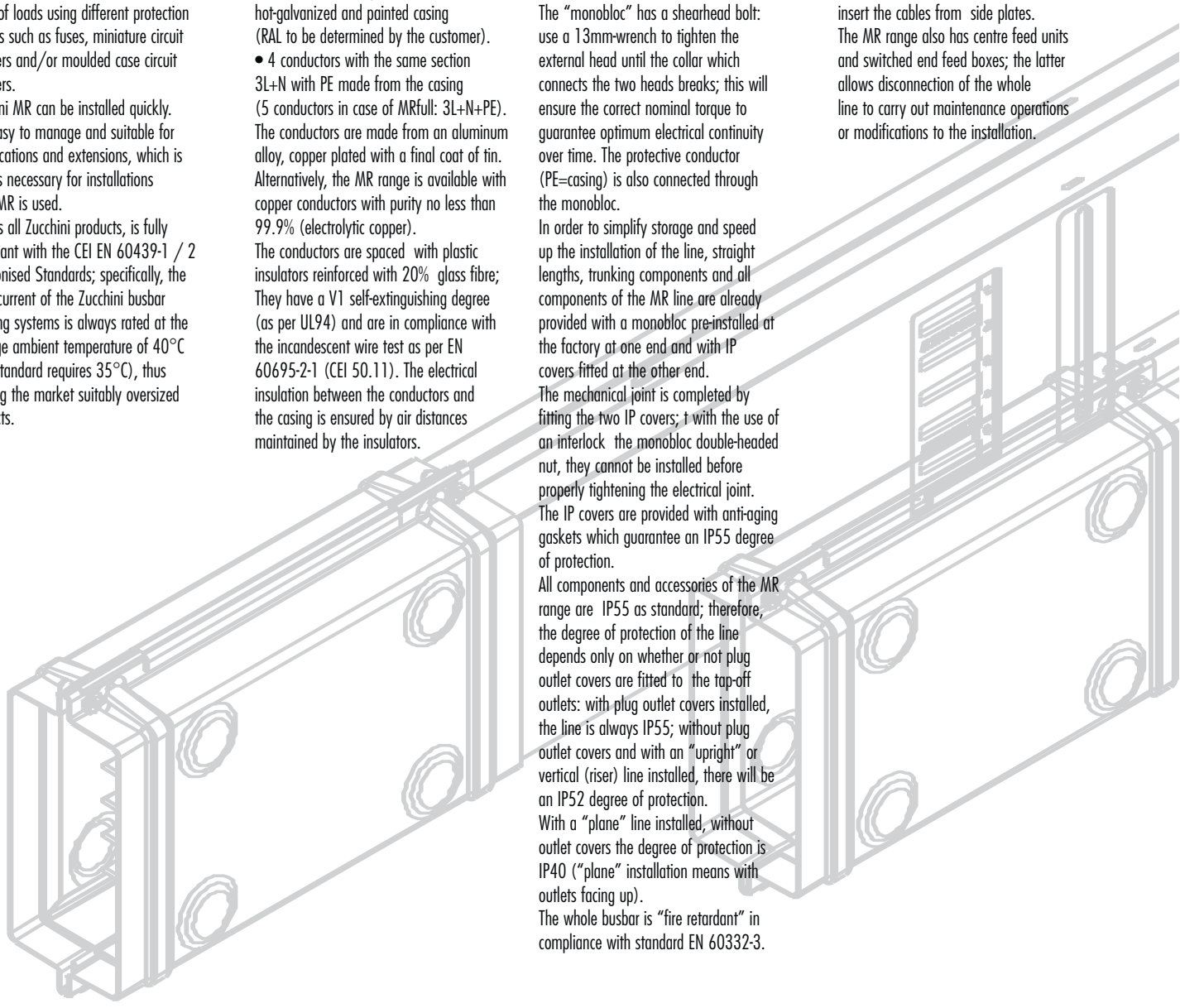
MR (Medium Rating) is part of the Zucchini range used for the distribution of power in medium – large installations; it is also particularly suitable in rising main applications (trunking systems) within buildings used for the service sector (banks, insurance, commercial headquarters, etc.). The MR range is available in sizes ranging from 160A to 800A with conductors made from an aluminium alloy and from 250A to 1000A with copper conductors.
MR has a wide range of tap-off boxes which are rated from 16A to 1000A, thus allowing the supply and protection of all kinds of loads using different protection devices such as fuses, miniature circuit breakers and/or moulded case circuit breakers.
Zucchini MR can be installed quickly. It is easy to manage and suitable for modifications and extensions, which is always necessary for installations were MR is used.
MR, as all Zucchini products, is fully compliant with the CEI EN 60439-1 / 2 Harmonised Standards; specifically, the rated current of the Zucchini busbar trunking systems is always rated at the average ambient temperature of 40°C (the Standard requires 35°C), thus offering the market suitably oversized products.

STRAIGHT LENGTHS

Used for distributing power and for supplying medium powered loads.
MR straight lengths include the following components:
• casing made from two "omega-shaped", ribbed, sealed section cases (75-135x196 mm, thickness 0.8 mm), made of hot-galvanised steel (Senzimir) which also serves as a protective conductor due to its cross-section and electrical continuity; if required, the line can be provided with a special earthing conductor whose section and material can be the same as the phases (MRfull) and/or with a hot-galvanized and painted casing (RAL to be determined by the customer).
• 4 conductors with the same section 3L+N with PE made from the casing (5 conductors in case of MRfull: 3L+N+PE). The conductors are made from an aluminum alloy, copper plated with a final coat of tin. Alternatively, the MR range is available with copper conductors with purity no less than 99.9% (electrolytic copper).
The conductors are spaced with plastic insulators reinforced with 20% glass fibre; They have a V1 self-extinguishing degree (as per UL94) and are in compliance with the incandescent wire test as per EN 60695-2-1 (CEI 50.11). The electrical insulation between the conductors and the casing is ensured by air distances maintained by the insulators.
• a series of tap-off outlets to accept plug-in tap-off boxes; the outlets are located on the busbar with a spacing distance of 1 m on both sides of the busbar (3+3 outlets every 3m).
The outlets are normally closed but open automatically by inserting a tap-of box and reclose when the tap-off is unplugged.
• an electrical junction "monobloc" system for fast and reliable connection of the live conductors and PE.
The "monobloc" is made from a system of copper plates which make up the live conductor series.
The "monobloc" has a shearhead bolt: use a 13mm-wrench to tighten the external head until the collar which connects the two heads breaks; this will ensure the correct nominal torque to guarantee optimum electrical continuity over time. The protective conductor (PE=casing) is also connected through the monobloc.
In order to simplify storage and speed up the installation of the line, straight lengths, trunking components and all components of the MR line are already provided with a monobloc pre-installed at the factory at one end and with IP covers fitted at the other end.
The mechanical joint is completed by fitting the two IP covers; t with the use of an interlock the monobloc double-headed nut, they cannot be installed before properly tightening the electrical joint.
The IP covers are provided with anti-aging gaskets which guarantee an IP55 degree of protection.
All components and accessories of the MR range are IP55 as standard; therefore, the degree of protection of the line depends only on whether or not plug outlet covers are fitted to the tap-off outlets: with plug outlet covers installed, the line is always IP55; without plug outlet covers and with an "upright" or vertical (riser) line installed, there will be an IP52 degree of protection.
With a "plane" line installed, without outlet covers the degree of protection is IP40 ("plane" installation means with outlets facing up).
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END FEED UNITS

These enable the MR range to be supplied by cable or directly connected to an electrical distribution panel; the assembly of the line is carried out with a quick monobloc connection as with the straight lengths.
The 160 and 250A end feed units have terminals to accept cables up to 150 mm^2; for higher ratings, the cable connection to the end feed units requires terminals which need extensions (11 mm hole).
The cable entry is generally located at the base of the end feed unit, in which there is a removable plate; it is also possible to insert the cables from side plates.
The MR range also has centre feed units and switched end feed boxes; the latter allows disconnection of the whole line to carry out maintenance operations or modifications to the installation.



END COVERS

End covers ensure the IP55 degree of protection at the end of the run.

HANGERS

In order to fix the run to the structure of the building, directly or with a wall, ceiling or beam bracket, it is necessary to use a bracket which serves as a busbar collar. The bracket has holes for use with the support brackets available in the Zucchini catalogue.

TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Zucchini is able to offer different technical solutions:
a) 90° angles: available for changing routes both horizontally and vertically. They have the same quick joint connection as the straight lengths.
The protection degree is IP55.
b) T, X and double angle Z elements.
The degree of protection is IP55.
c) Straight lengths with fire barrier (internal+external) S120.
These elements are used when REI120 fire-resistant walls need to be passed through.
The elements fitted with a fire barrier have been lab-tested (in accordance with DIN 4102-9 and EN 1366-3) in order to confirm that, if correctly installed, they will maintain the essential fire resistant features of the wall. S120 means that the barrier is certified for 120' (minutes).
d) Straight lengths with 5 outlets on one side are ideal for achieving rising mains or sections with high density of tap-off points.
e) Straight lengths without outlets are available for feeder only applications.
The MR range has more advantages when used in vertical applications (rising mains) because thrust units or thermal expansion units are not required.
The monobloc joint used on the MR range allows for the thermal expansions of the conductors.

TAP-OFF BOXES

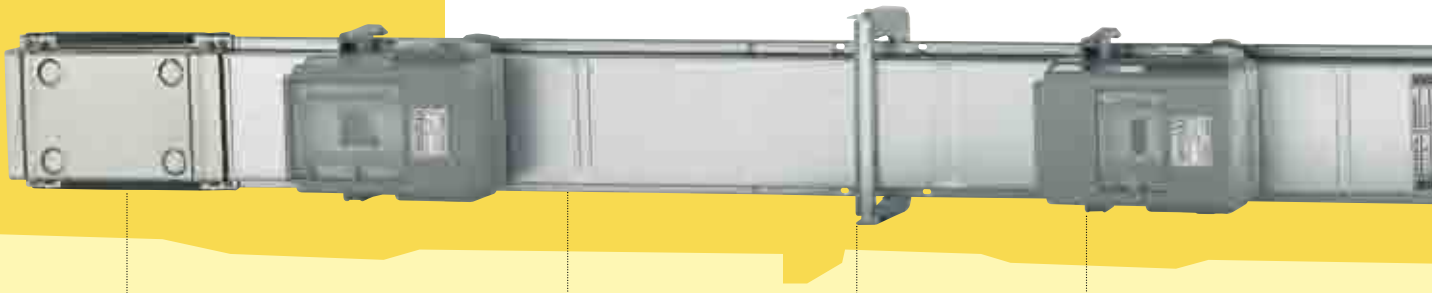
Used for supplying three-phase loads from 32A up to 1000A; they can be divided into two main categories:
1) Plug-in-type tap-off boxes (from 32A up to 630A): they can be operated when energized and when under load conditions up to a rating of 32A; for ratings from 63A to 630A, the boxes are equipped with an isolating device integral with the cover. When the tap-off box is installed on the busbar, the opening of the cover electrically disconnects its internal parts, no accessible metallic part is live when the cover is open.
Tap-off boxes have an interlock with a cover and can be inserted and removed from the outlet only when the cover is in the "open" position, that is in the "isolated" position.
The cover of the box can be locked in the open-isolated position to allow safe maintenance of the loads connected to it.
All Zucchini plug-in type boxes have a PE contact (protective conductor), which is the first to make an electrical connection when plugged into the outlet, and the last to disconnect when the tap-off is unplugged;

All insulating plastic components comply with the incandescent wire test (EN 60695-2-1) and have a V2 self-extinguishing degree (UL94);
the standard degree of protection is IP55 without using additional IP protection kits;
Plug-in type boxes are available in the following versions: with fuseholder, with miniature circuit breakers, with CEE sockets, schuko, with switchfuse or with moulded case circuit breakers.
2) Boxes bolted on the junction (from 630A to 1000A): these high rated current boxes are rigidly connected to the busbar with a special "monobloc" connection system similar to that of the straight lengths but this also allows for the power to be tapped-off.
The boxes can only be installed and removed when the system is de-energized (isolated busbar).
When the monobloc system is used, installation is extremely easy, quick and reliable.
These tap-off boxes are available in the switchfuse and fuseholder version and with moulded case circuit breakers.

MR

MEDIUM RATING

**BUSBAR TRUNKING SYSTEM
FOR MEDIUM POWER**



Joint cover

Straight lengths with one outlet every metre on both sides.

Suspension hanger

Tap-off box

LINE DETAILS

Metal end feed unit

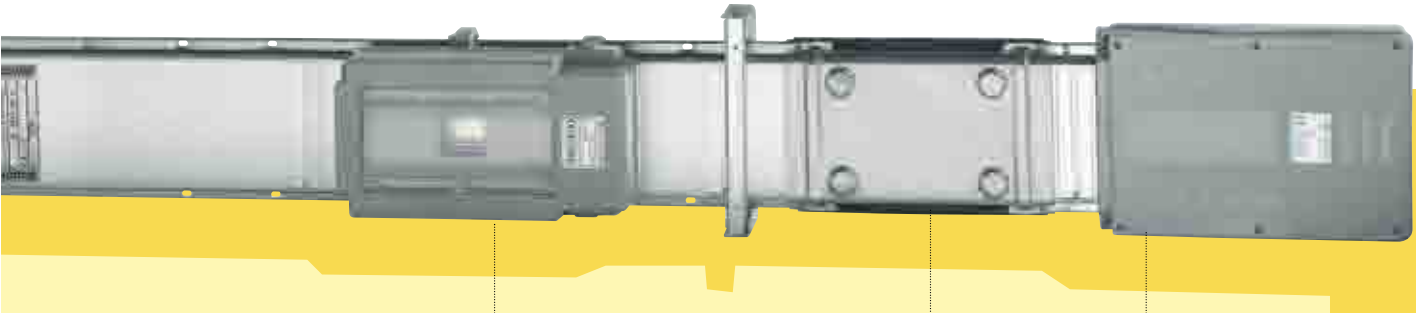
Switchboard - transformer feed unit

Horizontal elbow

Vertical elbow

Skyscrapers

Factories



Tap-off box with terminals for cables up to 25mm². Produced in self-extinguishing plastic material, it has a good mechanical resistance and withstands tracking well. Plug-in tap-off boxes can be plugged in and pulled out under voltage. Ratings from 16A to 32A.

Joint cover already installed on an element.

End feed unit

MEDIUM RATING

Plug-in boxes

Plug-in boxes with isolating device

End cover

Plug-outlet cover (spare part)

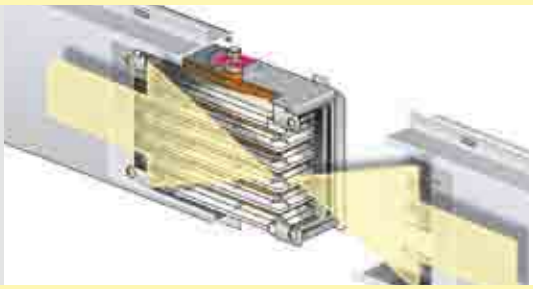
BENEFITS

PRE-ASSEMBLED MONOBLOC JOINT

All the run elements (straight elements, elbows, etc.) are supplied complete with a factory fitted monobloc. The system is faster to install and easier to handle and store.

VERY FAST ASSEMBLY

The monobloc and the shearhead bolt allow very fast assembly of the run.



DYNAMOMETRIC MONOBLOC

Tighten the "dynamometric" bolt on the monobloc until the head breaks to electrically connect the elements. Breaking the head of the bolt guarantees long-term reliability and safety.

COVER PLATE

If the monobloc has not been tightened correctly, the head of the dynamometric bolt will prevent the mechanical coupling from closing. The joint covers and the gaskets protect the element during handling, and once installed, they guarantee mechanical rigidity and the degree of protection.

"IP" PROTECTION

The MR busbar on edgewise position has a standard IP52 degree of protection.
By simply adding covers to the tap-off outlets the degree of protection of the run becomes IP55.

EXCELLENT FIRE RESISTANCE

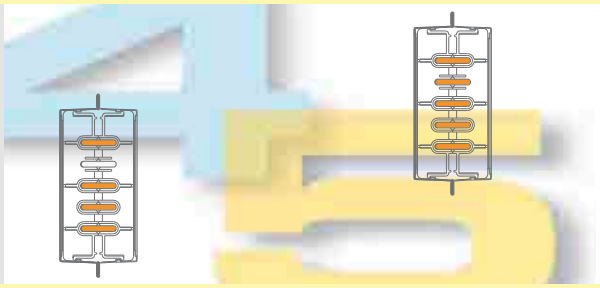
The MR busbar features fireproof fire barrier elements (S120 according to DIN 4102-9) and special structures that guarantee that the bus-line continues to function in fire conditions (E120 according to DIN 4102-12). The fire load of the MR busbar is extremely low compared to the quantity of plastic materials required to insulate cables of the same capacity.

GLOW WIRE TEST

All plastics used are "glow wire test" proof and in compliance with IEC EN 60439-2 (second edition). These are therefore resistant to abnormal heat.

TYPES

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) busbar has
5 conductors with an equal cross section (3L+N+PE). The MR and MRf busbars are available with a galvanised sheet steel casing and a version with a painted finish (RAL to be defined).



STRAIGHT FORWARD AND RELIABLE

The "monobloc" connection of the MR busbar means it is possible 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 (rising main) there is no need to install a busbar thrust unit because the new monobloc prevents the conductors from sliding.

SB RANGE COMPATIBLE PLUG-IN BOXES

The plug-in boxes of the SB range can be installed without any modifications to the new MR range.
This allows existing systems to be extended and reduces the need to stock accessories.

MAXIMUM STRANGTH

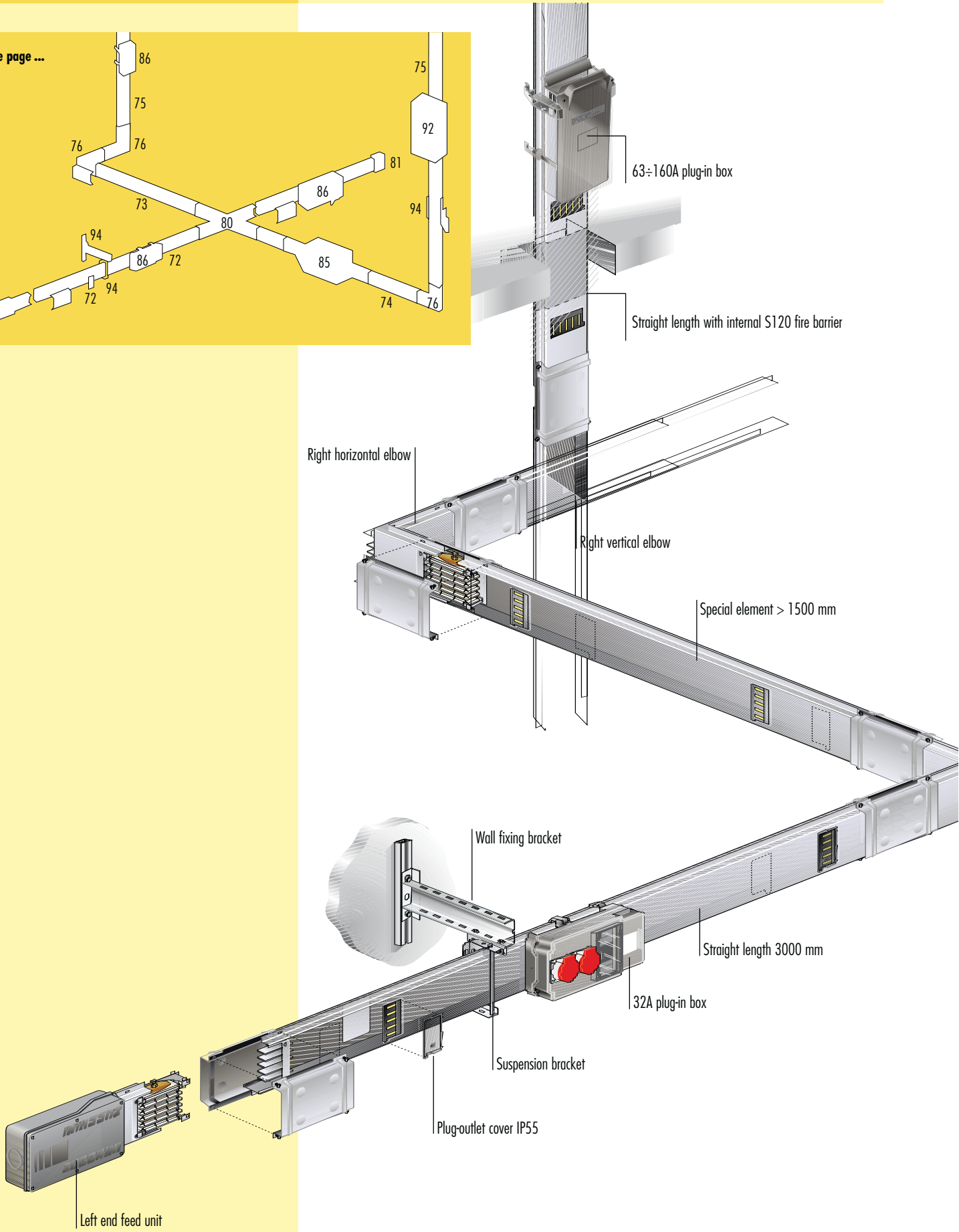
The MR busbar has been designed and manufactured for heavy industrial environments. The degree of impact-resistance of the casing which houses the MR bus-line is the maximum stated in IEC EN 60068-2-62: IK10.

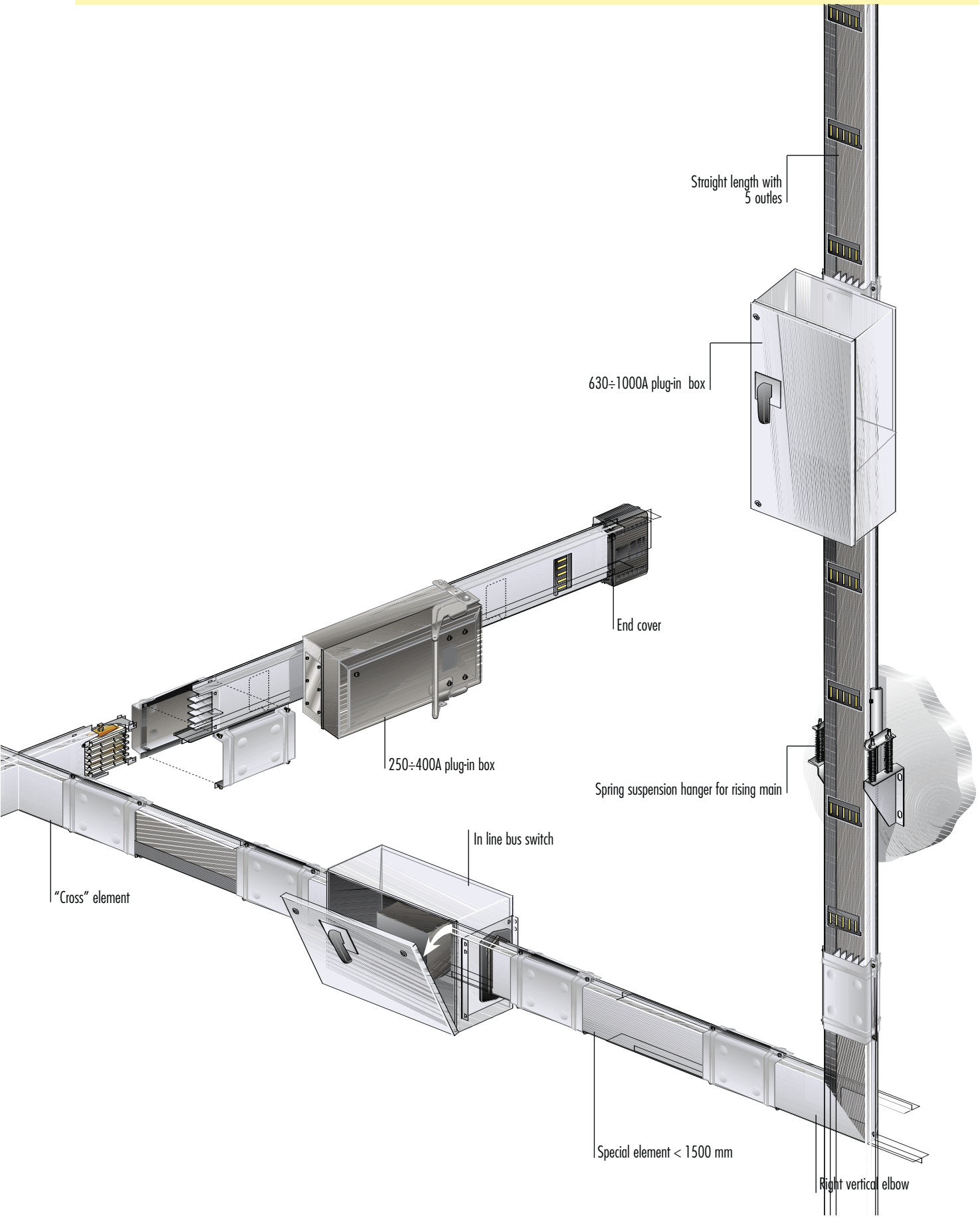
ALUMINIUM AND COPPER RATING

Aluminium	160	250	315	400	500	630	800	-
Copper	-	250	315	400	-	630	800	1000

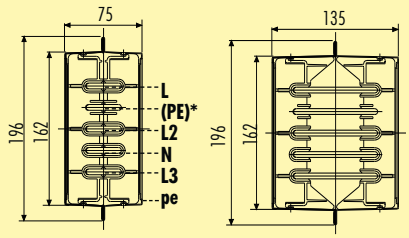
LINE ROUTE

See page ...
86
75
76
76
73
80
81
86
75
92
94
94
86
72
94
72
85
74
76


63÷160A plug-in box
Straight length with internal S120 fire barrier
Right horizontal elbow
Right vertical elbow
Special element > 1500 mm
Wall fixing bracket
Straight length 3000 mm
32A plug-in box
Suspension bracket
Plug-outlet cover IP55
Left end feed unit


Straight length with
5 outles
630÷1000A plug-in box
End cover
250÷400A plug-in box
Spring suspension hanger for rising main
In line bus switch
"Cross" element
Special element < 1500 mm
Right vertical elbow

STRAIGHT LENGTH 3 METRES WITH 3+3 OUTLES

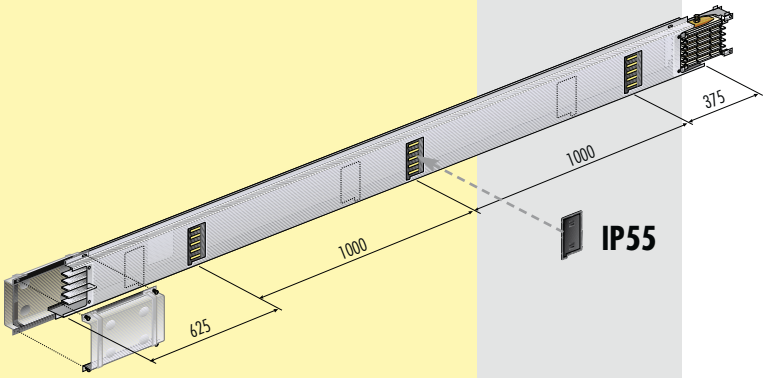


160-315A Al
250-400A Cu
* only MRf

400-800A Al
630-1000A Cu

Straight length with outlets in fixed position.

Rating [A]	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	3000	3 + 3	**5040 01 01**	19.9	-	-
250	3000	3 + 3	**5040 01 02**	20.9	**5540 01 02**	25.7
315	3000	3 + 3	**5040 01 03**	22.8	**5540 01 03**	28.1
400	3000	3 + 3	**5040 01 04**	33.8	**5540 01 04**	36.9
500	3000	3 + 3	**5040 01 08**	37.5		
630	3000	3 + 3	**5040 01 05**	41.7	**5540 01 05**	56.0
800	3000	3 + 3	**5040 01 06**	44.3	**5540 01 06**	72.1
1000	3000	3 + 3			**5540 01 07**	83.7



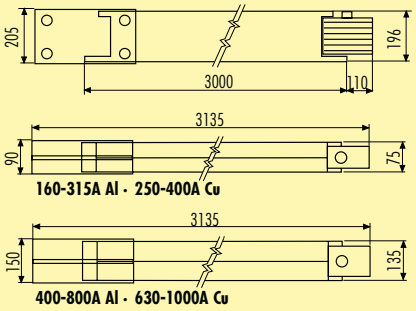
PLUG-OUTLET COVER IP55

For the complete MR range.

6 for each length.

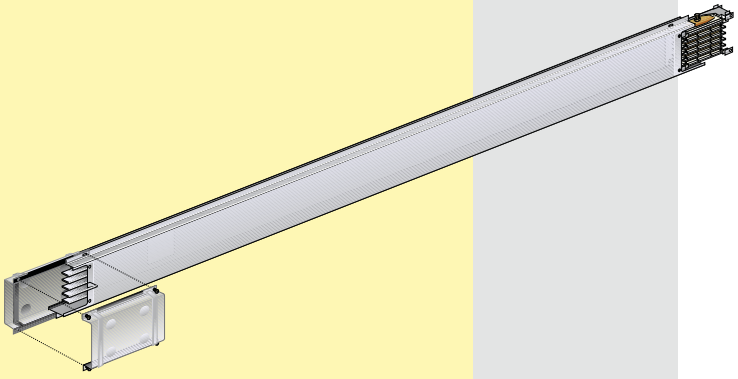
Code	Weight kg
5040 36 01	0.10

STRAIGHT LENGTH 3 METRES WITHOUT OUTLETS



Feeder element. A tap-off point is only possible on the junction between two elements (see bolt-on tap-off boxes).

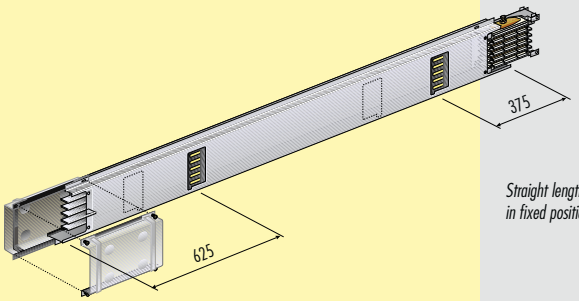
Rating [A]	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	3000	0	**5040 02 41**	19.9		
250	3000	0	**5040 02 42**	20.9	**5540 02 42**	25.7
315	3000	0	**5040 02 43**	22.8	**5540 02 43**	28.1
400	3000	0	**5040 02 44**	33.8	**5540 02 44**	36.9
500	3000	0	**5040 02 48**	37.5		
630	3000	0	**5040 02 45**	41.7	**5540 02 45**	56.0
800	3000	0	**5040 02 46**	44.3	**5540 02 46**	72.1
1000	3000	0			**5540 02 47**	83.7



Codes table

	Conductors	Case	Code
MR	4	**Galvanized**	- - - **0** - - - -
MRf	5	**Galvanized**	- - - **1** - - - -
MR-P	4	**Painted**	- - - **2** - - - -
MRf-P	5	**Painted**	- - - **3** - - - -

STRAIGHT LENGTH FROM 1501 TO 2999 MM WITH 2+2 OUTLETS

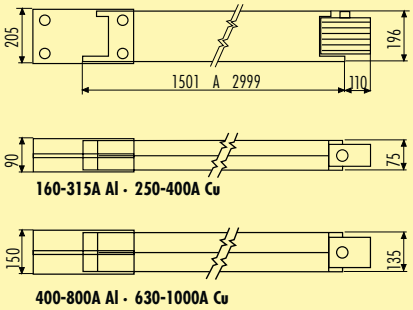


Straight length with outlets in fixed position.

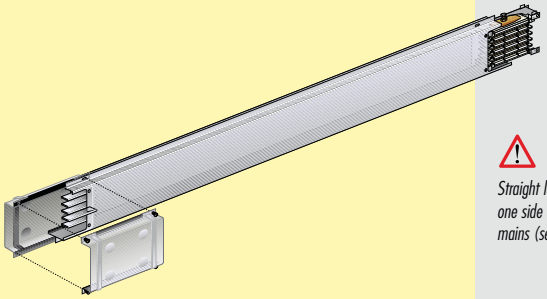
In your Purchase Order please specify the required length (see page 96: How to measure special elements)

Rating [A]	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	1501÷2999	2 + 2	**5040 01 51**	13.6		
250	1501÷2999	2 + 2	**5040 01 52**	14.1	**5540 01 52**	16.5
315	1501÷2999	2 + 2	**5040 01 53**	14.9	**5540 01 53**	17.7
400	1501÷2999	2 + 2	**5040 01 54**	23.3	**5540 01 54**	22.0
500	1501÷2999	2 + 2	**5040 01 58**	25.2		
630	1501÷2999	2 + 2	**5040 01 55**	26.9	**5540 01 55**	34.3
800	1501÷2999	2 + 2	**5040 01 56**	28.0	**5540 01 56**	42.2
1000	1501÷2999	2 + 2			**5540 01 57**	47.8

STRAIGHT LENGTH FROM 1501 TO 2999 MM WITHOUT OUTLETS



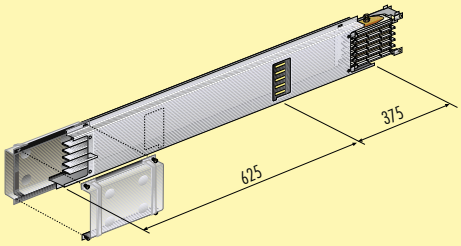
Feeder element.
A tap-off point is only possible on the junction between two elements (see bolt-on tap-off boxes).



Straight length with outlet on one side only, suitable for rising mains (see page 97)

Rating [A]	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	1501÷2999	0	**5040 01 21**	13.6		
250	1501÷2999	0	**5040 01 22**	14.1	**5540 01 22**	16.5
315	1501÷2999	0	**5040 01 23**	14.9	**5540 01 23**	17.7
400	1501÷2999	0	**5040 01 24**	23.3	**5540 01 24**	22.0
500	1501÷2999	0	**5040 01 28**	25.2		
630	1501÷2999	0	**5040 01 25**	26.9	**5540 01 25**	34.3
800	1501÷2999	0	**5040 01 26**	28.0	**5540 01 26**	42.2
1000	1501÷2999	0			**5540 01 27**	47.8

STRAIGHT LENGTHS FROM 600 TO 1500 MM WITH 1+1 OUTLET

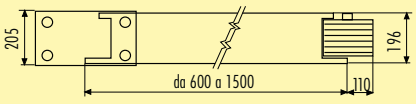


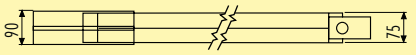
Straight length with outlets in fixed position.

In your Purchase Order please specify the required length (see page 96: How to measure special elements)

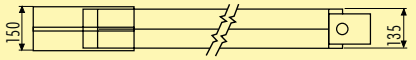
Rating [ ]A	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	1000 ÷1500	1 + 1	**5040 01 41**	13.6		
250	1000 ÷1500	1 + 1	**5040 01 42**	14.1	**5540 01 42**	16.5
315	1000 ÷1500	1 + 1	**5040 01 43**	14.9	**5540 01 43**	17.7
400	1000 ÷1500	1 + 1	**5040 01 44**	23.3	**5540 01 44**	22.0
500	1000 ÷1500	1 + 1	**5040 01 48**	25.2		
630	1000 ÷1500	1 + 1	**5040 01 45**	26.9	**5540 01 45**	34.3
800	1000 ÷1500	1 + 1	**5040 01 46**	28.0	**5540 01 46**	42.2
1000	1000 ÷1500	1 + 1			**5540 01 47**	47.8

STRAIGHT LENGTHS FROM 600 TO 1500 MM WITHOUT OUTLET

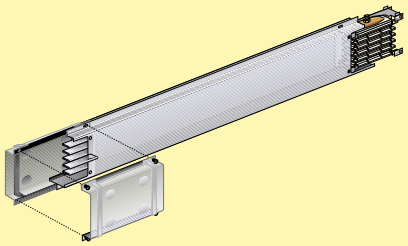




160-315A Al - 250-400A Cu



400-800A Al - 630-1000A Cu



Feeder element.
A tap-off point is only possible on the junction between two elements (see bolt-on tap-off boxes).

In your Purchase Order please specify the required length (see page 96: How to measure special elements)

Rating [A]	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	600÷1500	0	**5040 01 11**	13.6		
250	600÷1500	0	**5040 01 12**	14.1	**5540 01 12**	16.5
315	600÷1500	0	**5040 01 13**	14.9	**5540 01 13**	17.7
400	600÷1500	0	**5040 01 14**	23.3	**5540 01 14**	22.0
500	600÷1500	0	**5040 01 18**	25.2		
630	600÷1500	0	**5040 01 15**	26.9	**5540 01 15**	34.3
800	600÷1500	0	**5040 01 16**	28.0	**5540 01 16**	42.2
1000	600÷1500	0			**5540 01 17**	47.8

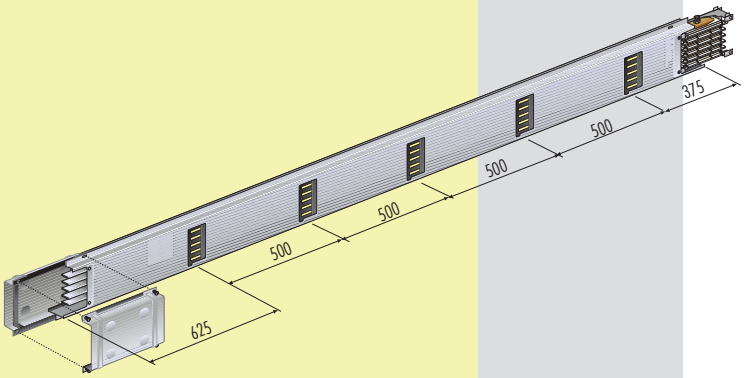
Codes table

	Conductors	Case	Code
MR	4	**Galvanized**	- - - **0** - - - -
MRf	5	**Galvanized**	- - - **1** - - - -
MR-P	4	**Painted**	- - - **2** - - - -
MRf-P	5	**Painted**	- - - **3** - - - -

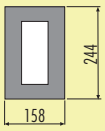
STRAIGHT LENGTHS 3 METRES WITH 5 OUTLETS ONLY ON ONE SIDE

3 metres straight length with 5 outlets on one side only, suitable for rising mains (see page 97)

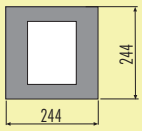
Rating [A]	Length [mm]	outlets n.	Code	Weight kg	Code	Weight kg
			Aluminium		**Copper**	
160	3000	5 + 0	**5040 02 51**	19.9		
250	3000	5 + 0	**5040 02 52**	20.9	**5540 02 52**	25.7
315	3000	5 + 0	**5040 02 53**	22.8	**5540 02 53**	28.1
400	3000	5 + 0	**5040 02 54**	33.8	**5540 02 54**	36.9
500	3000	5 + 0	**5040 02 58**	37.5		
630	3000	5 + 0	**5040 02 55**	41.7	**5540 02 55**	56.0
800	3000	5 + 0	**5040 02 56**	44.3	**5540 02 56**	72.1
1000	3000	5 + 0			**5540 02 57**	83.7



STRAIGHT LENGTHS WITH EI120 FIRE BARRIER



554EFB01
160 - 315A Al
250 - 400A Cu

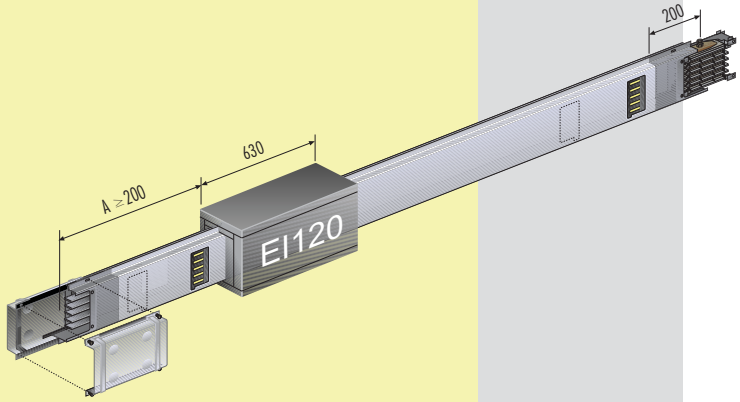


554EFB02
400 - 800A Al
630 - 1000A Cu

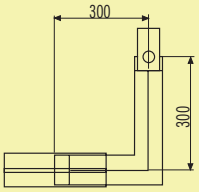
When ordering, specify the dimension A = ….. mm of the element that will be equipped with the fire barrier.

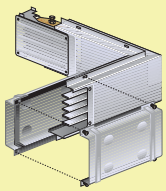
In your Purchase Order please specify the required position of the internal fire barrier. Take the measurement as shown in the Figure. The internal fire barrier is 630mm long. .

Rating [A]	Code external	Code internal	Code external	Code internal
Aluminium			**Copper**	
160	**554EFB01**	**554IFB01**		
250	**554EFB01**	**554IFB02**	**554EFB01**	**554IFB01**
315	**554EFB01**	**554IFB03**	**554EFB01**	**554IFB02**
400	**554EFB02**	**554IFB04**	**554EFB01**	**554IFB05**
500	**554EFB02**	**554IFB06**		
630	**554EFB02**	**554IFB07**	**554EFB02**	**554IFB04**
800	**554EFB02**	**554IFB08**	**554EFB02**	**554IFB06**
1000			**554EFB02**	**554IFB07**



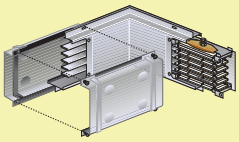
HORIZONTAL ELBOW (300 + 300 MM)





Right (RH)

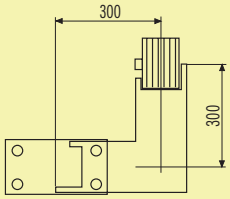
Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		Copper	
160	5040 03 01	8.1		
250	5040 03 02	8.2	5540 03 02	16.5
315	5040 03 03	8.4	5540 03 03	17.7
400	5040 03 04	14.5	5540 03 04	22.0
500	5040 03 08	14.9		
630	5040 03 05	15.4	5540 03 05	34.3
800	5040 03 06	15.7	5540 03 06	42.2
1000			5540 03 07	47.8

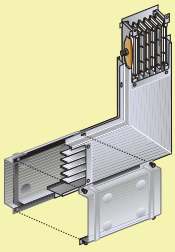


Left (LH)

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		Copper	
160	5040 03 11	8.1		
250	5040 03 12	8.2	5540 03 12	9.2
315	5040 03 13	8.4	5540 03 13	9.6
400	5040 03 14	14.5	5540 03 14	11.0
500	5040 03 18	14.9		
630	5040 03 15	15.4	5540 03 15	18.7
800	5040 03 16	15.7	5540 03 16	21.4
1000			5540 03 17	23.3

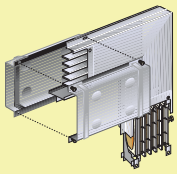
VERTICAL ELBOW (300 + 300 MM)





Right (RH)

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		Copper	
160	5040 04 01	8.1		
250	5040 04 02	8.2	5540 04 02	9.2
315	5040 04 03	8.4	5540 04 03	9.6
400	5040 04 04	14.5	5540 04 04	11.0
500	5040 04 08	14.9		
630	5040 04 05	15.4	5540 04 05	18.7
800	5040 04 06	15.7	5540 04 06	21.4
1000			5540 04 07	23.3

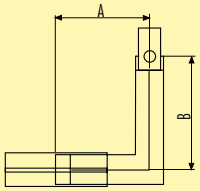


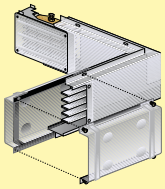
Left (LH)

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		Copper	
160	5040 04 11	8.1		
250	5040 04 12	8.2	5540 04 12	9.2
315	5040 04 13	8.4	5540 04 13	9.6
400	5040 04 14	14.5	5540 04 14	11.0
160	5040 04 18	14.9		
630	5040 04 15	15.4	5540 04 15	18.7
800	5040 04 16	15.7	5540 04 16	21.4
1000			5540 04 17	23.3

Codes table		Conductors	Case	Code
MR		4	Galvanized	- - - 0 - - - -
MRf		5	Galvanized	- - - 1 - - - -
MR-P		4	Painted	- - - 2 - - - -
MRf-P		5	Painted	- - - 3 - - - -

SPECIAL HORIZONTAL ELBOW



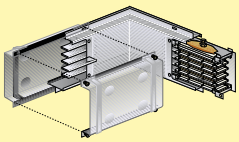


Right (RH)

Dimensions [mm]

min		*MAX*
250	A	900
250	B	900

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 03 21**			
250	**5040 03 22**		**5540 03 22**	
315	**5040 03 23**		**5540 03 23**	
400	**5040 03 24**		**5540 03 24**	
500	**5040 03 28**			
630	**5040 03 25**		**5540 03 25**	
800	**5040 03 26**		**5540 03 26**	
1000			**5540 03 27**	

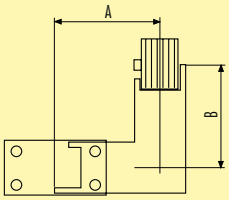


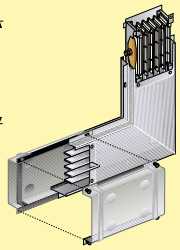
Left (LH)

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 03 31**			
250	**5040 03 32**		**5540 03 32**	
315	**5040 03 33**		**5540 03 33**	
400	**5040 03 34**		**5540 03 34**	
500	**5040 03 38**			
630	**5040 03 35**		**5540 03 35**	
800	**5040 03 36**		**5540 03 36**	
1000			**5540 03 37**	

In your Purchase Order please specify the required length (see page 96: How to measure special elements)

SPECIAL VERTICAL ELBOW



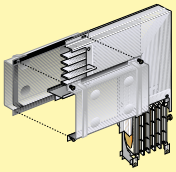


Right (RH)

Dimensions [mm]

min		*MAX*
300	A	900
300	B	900

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 04 21**			
250	**5040 04 22**		**5540 04 22**	
315	**5040 04 23**		**5540 04 23**	
400	**5040 04 24**		**5540 04 24**	
500	**5040 04 28**			
630	**5040 04 25**		**5540 04 25**	
800	**5040 04 26**		**5540 04 26**	
1000			**5540 04 27**	

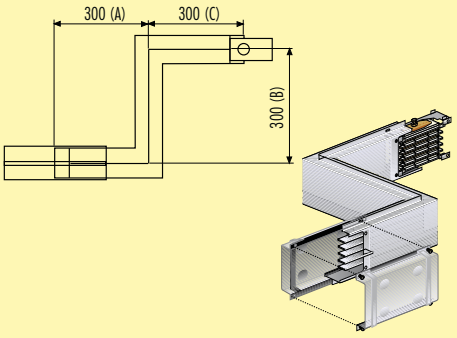


Left (LH)

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 04 31**			
250	**5040 04 32**		**5540 04 32**	
315	**5040 04 33**		**5540 04 33**	
400	**5040 04 34**		**5540 04 34**	
500	**5040 04 38**			
630	**5040 04 35**		**5540 04 35**	
800	**5040 04 36**		**5540 04 36**	
1000			**5540 04 37**	

In your Purchase Order please specify the required length (see page 96: How to measure special elements)

DOUBLE HORIZONTAL ELBOW (300 + 300 + 300 MM)



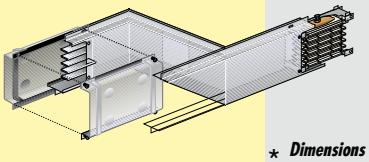
Right + Left

* *Dimensions [mm]*

min		*MAX*
250	A, B,C	900

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 03 41**	10.29		
250	**5040 03 42**	10.55	**5540 03 42**	12.23
315	**5040 03 43**	11.06	**5540 03 43**	12.97
400	**5040 03 44**	18.37	**5540 03 44**	15.72
500	**5040 03 48**	19.50		
630	**5040 03 45**	20.55	**5540 03 45**	25.77
800	**5040 03 46**	21.20	**5540 03 46**	30.88
1000			**5540 03 47**	34.55
Special element	⑥*		⑥*	

Left + Right

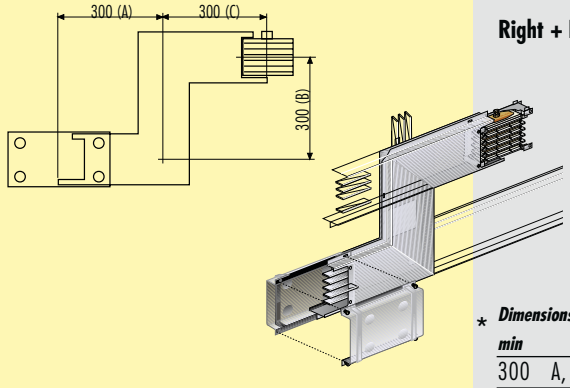


* *Dimensions [mm]*

min		*MAX*
250	A, B,C	900

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 03 51**	10.29		
250	**5040 03 52**	10.55	**5540 03 52**	12.23
315	**5040 03 53**	11.06	**5540 03 53**	12.97
400	**5040 03 54**	18.37	**5540 03 54**	15.72
500	**5040 03 58**	19.50		
630	**5040 03 55**	20.55	**5540 03 55**	25.77
800	**5040 03 56**	21.20	**5540 03 56**	30.88
1000			**5540 03 57**	34.55
Special element	⑦*		⑦*	

DOUBLE VERTICAL ELBOW (300 + 300 + 300 MM)



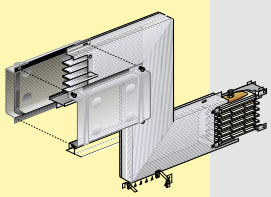
Right + Left

* *Dimensions [mm]*

min		*MAX*
300	A, B,C	900

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 04 41**	10.29		
250	**5040 04 42**	10.55	**5540 04 42**	12.23
315	**5040 04 43**	11.06	**5540 04 43**	12.97
400	**5040 04 44**	18.37	**5540 04 44**	15.72
500	**5040 04 48**	19.50		
630	**5040 04 45**	20.55	**5540 04 45**	25.77
800	**5040 04 46**	21.20	**5540 04 46**	30.88
1000			**5540 04 47**	34.55
Special element	⑥*		⑥*	

Left + Right



* *Dimensions [mm]*

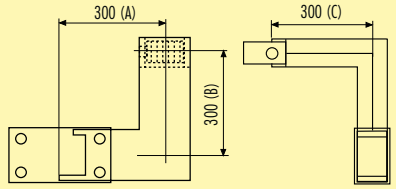
min		*MAX*
300	A, B,C	900

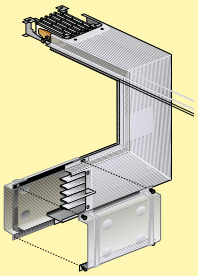
Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 04 51**	10.29		
250	**5040 04 52**	10.55	**5540 04 52**	12.23
315	**5040 04 53**	11.06	**5540 04 53**	12.97
400	**5040 04 54**	18.37	**5540 04 54**	15.72
500	**5040 04 58**	19.50		
630	**5040 04 55**	20.55	**5540 04 55**	25.77
800	**5040 04 56**	21.20	**5540 04 56**	30.88
1000			**5540 04 57**	34.55
Special element	⑦*		⑦*	

Codes table

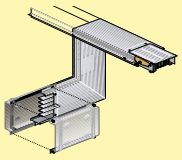
	Conductors	Case	Code
MR	4	Galvanized	- - - 0 - - - -
MRf	5	Galvanized	- - - 1 - - - -
MR-P	4	Painted	- - - 2 - - - -
MRf-P	5	Painted	- - - 3 - - - -

VERTICAL ELBOW + HORIZONTAL ELBOW (300+300+300 MM)

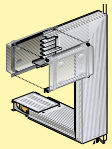




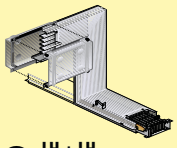
1 RH + RH



2 RH + LH



3 LH + RH



4 LH + LH

* *Dimensions [mm]*

min		*MAX*
300	A, B,C	900

Rating [A]	Type 1	Type 2	Type 3	Type 4	Weight kg
Aluminium					
160	5040 05 01	5040 05 11	5040 05 21	5040 05 31	10.29
250	5040 05 02	5040 05 12	5040 05 22	5040 05 32	10.55
315	5040 05 03	5040 05 13	5040 05 23	5040 05 33	11.06
400	5040 05 04	5040 05 14	5040 05 24	5040 05 34	18.37
160	5040 05 08	5040 05 18	5040 05 28	5040 05 38	19.50
630	5040 05 05	5040 05 15	5040 05 25	5040 05 35	20.55
800	5040 05 06	5040 05 16	5040 05 26	5040 05 36	21.20

④* ⑤* ⑥* ⑦*

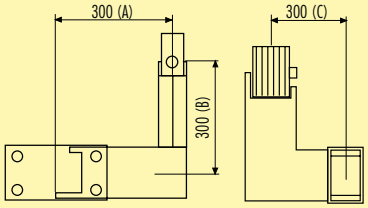
* Special element

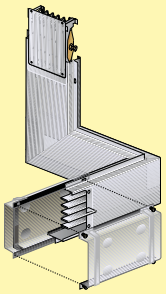
Rating [A]	Type 1	Type 2	Type 3	Type 4	Weight kg
Copper					
250	5540 05 02	5540 05 12	5540 05 22	5540 05 32	12.23
315	5540 05 03	5540 05 13	5540 05 23	5540 05 33	12.97
400	5540 05 04	5540 05 14	5540 05 24	5540 05 34	15.72
630	5540 05 05	5540 05 15	5540 05 25	5540 05 35	25.77
800	5540 05 06	5540 05 16	5540 05 26	5540 05 36	30.88
1000	5540 05 07	5540 05 17	5540 05 27	5540 05 37	34.55

④* ⑤* ⑥* ⑦*

* Special element

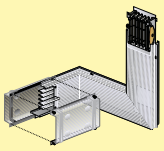
HORIZONTAL ELBOW + VERTICAL ELBOW (300+300+300 MM)



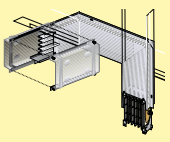


1 RH + RH

2 RH + LH



3 LH + RH



4 LH + LH

* *Dimensions [mm]*

min		*MAX*
300	A, B,C	900

Rating [A]	Type 1	Type 2	Type 3	Type 4	Weight kg
Aluminium					
160	5040 06 01	5040 06 11	5040 06 21	5040 06 31	10.29
250	5040 06 02	5040 06 12	5040 06 22	5040 06 32	10.55
315	5040 06 03	5040 06 13	5040 06 23	5040 06 33	11.06
400	5040 06 04	5040 06 14	5040 06 24	5040 06 34	18.37
500	5040 06 08	5040 06 18	5040 06 28	5040 06 38	19.50
630	5040 06 05	5040 06 15	5040 06 25	5040 06 35	20.55
800	5040 06 06	5040 06 16	5040 06 26	5040 06 36	21.20

④* ⑤* ⑥* ⑦*

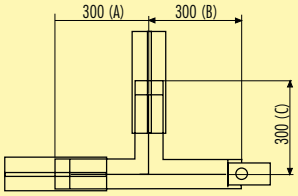
* Special element

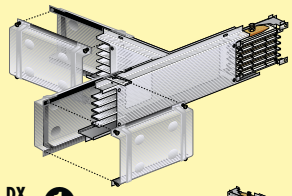
Rating [A]	Type 1	Type 2	Type 3	Type 4	Weight kg
Copper					
250	5540 06 02	5540 06 12	5540 06 22	5540 06 32	12.23
315	5540 06 03	5540 06 13	5540 06 23	5540 06 33	12.97
400	5540 06 04	5540 06 14	5540 06 24	5540 06 34	15.72
630	5540 06 05	5540 06 15	5540 06 25	5540 06 35	25.77
800	5540 06 06	5540 06 16	5540 06 26	5540 06 36	30.88
1000	5540 06 07	5540 06 17	5540 06 27	5540 06 37	34.55

④* ⑤* ⑥* ⑦*

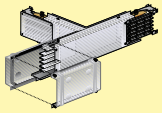
* Special element

HORIZONTAL "TEE" ELEMENTS (300 + 300 + 300 MM)

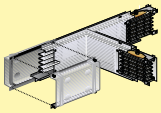




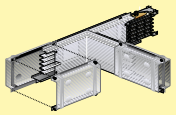
DX 1



DX 2



SX 1



SX 2

* *Dimensions [mm]*

min		*MAX*
250	A, B,C	900

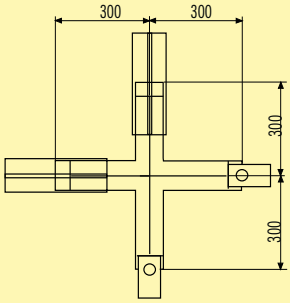
Rating [A]	RH 1	RH 2	LH 1	LH 2	Weight kg
Aluminium					
160	**5040 07 01**	**5040 07 11**	**5040 07 21**	**5040 07 31**	11.2
250	**5040 07 02**	**5040 07 12**	**5040 07 22**	**5040 07 32**	11.4
315	**5040 07 03**	**5040 07 13**	**5040 07 23**	**5040 07 33**	11.8
400	**5040 07 04**	**5040 07 14**	**5040 07 24**	**5040 07 34**	18.4
500	**5040 07 08**	**5040 07 18**	**5040 07 28**	**5040 07 38**	19.5
630	**5040 07 05**	**5040 07 15**	**5040 07 25**	**5040 07 35**	20.0
800	**5040 07 06**	**5040 07 16**	**5040 07 26**	**5040 07 36**	20.5

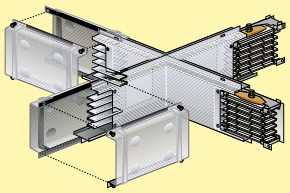
* Special element

Rating [A]	RH 1	RH 2	LH 1	LH 2	Weight kg
Copper					
250	**5540 07 02**	**5540 07 12**	**5540 07 22**	**5540 07 32**	12.8
315	**5540 07 03**	**5540 07 13**	**5540 07 23**	**5540 07 33**	13.4
400	**5540 07 04**	**5540 07 14**	**5540 07 24**	**5540 07 34**	15.7
630	**5540 07 05**	**5540 07 15**	**5540 07 25**	**5540 07 35**	24.4
800	**5540 07 06**	**5540 07 16**	**5540 07 26**	**5540 07 36**	28.5
1000	**5540 07 07**	**5540 07 17**	**5540 07 27**	**5540 07 37**	31.3

* Special element

CROSS ELEMENT (300 + 300 + 300 + 300 MM)



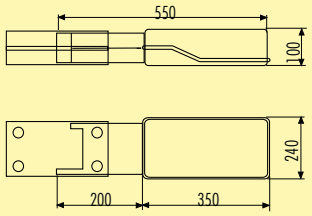


Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 30 01**	15.5		
250	**5040 30 02**	15.7	**5540 30 02**	17.6
315	**5040 30 03**	16.1	**5540 30 03**	18.4
400	**5040 30 04**	27.5	**5540 30 04**	21.1
500	**5040 30 08**	29.3		
630	**5040 30 05**	29.1	**5540 30 05**	35.2
800	**5040 30 06**	29.5	**5540 30 06**	40.2
1000			**5540 30 07**	43.7

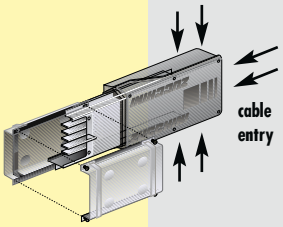
Codes table

	Conductors	Case	Code
MR	4	**Galvanized**	- - - **0** - - - -
MRf	5	**Galvanized**	- - - **1** - - - -
MR-P	4	**Painted**	- - - **2** - - - -
MRf-P	5	**Painted**	- - - **3** - - - -

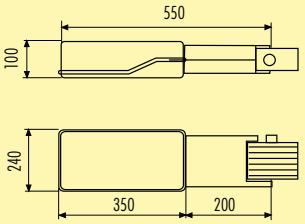
END FEED UNITS



Righ



Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 11 01**	5.70		
250	**5040 11 02**	5.85	**5540 11 02**	6.10

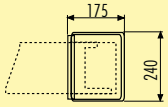


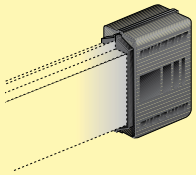
Left

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 11 11**	6.80		
250	**5040 11 12**	6.85	**5540 11 12**	7.20

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

END COVER





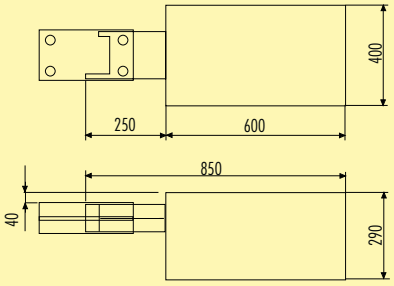
For the complete MR range

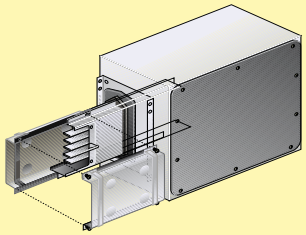
Closing and IP55 degree of protection guaranteed (EN 60529).

Rating [A]	Rating [A]	Code	Weight kg
Aluminium	**Copper**		
160 - 250 - 315 Al	**250 - 315 - 400 Cu**	**5040 31 01**	
400 - 630 - 800 Al	**630 - 800 - 1000 Cu**	**5040 31 02**	

METAL END FEED UNITS

Right (RH)



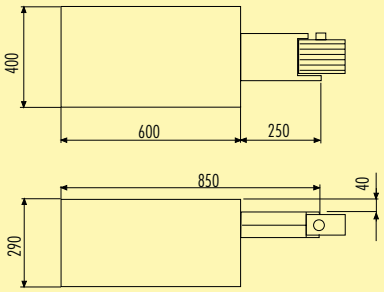


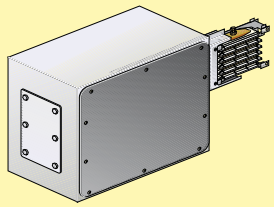
During shipment the stump is positioned in the box to reduce its bulk.Take it out and screw it in the position illustrated here.

Opening on the base cable entry: 180x290mm. For plates and holes dimensions, see page 84 for the switchboard element with the same rating.

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 11 21**	16.64		
250	**5040 11 22**	16.76	**5540 11 22**	17.37
315	**5040 11 23**	17.03	**5540 11 23**	17.70
400	**5040 11 24**	18.32	**5540 11 24**	18.88
500	**5040 11 28**	20.00		
630	**5040 11 25**	19.43	**5540 11 25**	21.17
800	**5040 11 26**	19.80	**5540 11 26**	23.30
1000			**5540 11 27**	24.83

Left (LH)





During shipment the stump is positioned in the box to reduce its bulk.Take it out and screw it in the position illustrated here.

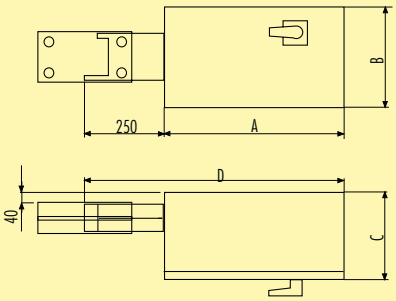
Opening on the base cable entry: 180x290mm. For plates and holes dimensions, see page 84 for the switchboard element with the same rating.

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 11 31**	17.74		
250	**5040 11 32**	17.76	**5540 11 32**	18.47
315	**5040 11 33**	17.83	**5540 11 33**	18.70
400	**5040 11 34**	23.22	**5540 11 34**	19.58
500	**5040 11 38**	23.20		
630	**5040 11 35**	23.63	**5540 11 35**	26.07
800	**5040 11 36**	23.70	**5540 11 36**	27.80
1000			**5540 11 37**	29.03

Codes table

	Conductors	Case	Code
MR	4	**Galvanized**	- - - **0** - - - -
MRf	5	**Galvanized**	- - - **1** - - - -
MR-P	4	**Painted**	- - - **2** - - - -
MRf-P	5	**Painted**	- - - **3** - - - -

END FEED UNIT WITH AC23 SWITCH DISCONNECTOR



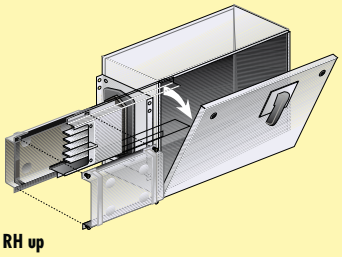
This feed unit allows isolation of the line for maintenance.

Dimensions [mm]

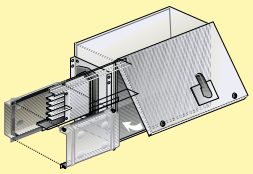
	1	*2*
A	550	1050
B	350	450
C	280	300
D	800	1300

Cable entry dimensions [mm]

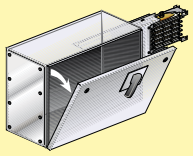
1	*2*
180 x 270	210 x 380



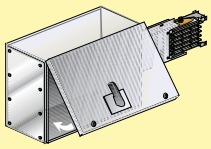
RH up



RH down



LH up

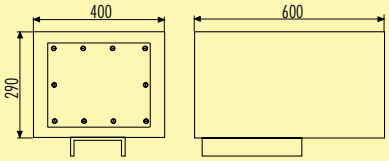


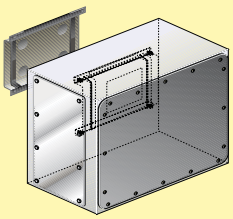
LH down

Rating [A]	Dimensions	RH **up**	RH **down**	LH **up**	LH **down**	Weight kg
Aluminium						
160	**1**	**5040 34 01**	**5040 34 11**	**5040 34 21**	**5040 34 31**	17.94
250	**1**	**5040 34 02**	**5040 34 12**	**5040 34 22**	**5040 34 32**	18.10
315	**1**	**5040 34 03**	**5040 34 13**	**5040 34 23**	**5040 34 33**	18.86
400	**2**	**5040 34 04**	**5040 34 14**	**5040 34 24**	**5040 34 34**	21.79
500	**2**	**5040 34 08**	**5040 34 18**	**5040 34 28**	**5040 34 38**	22.42
630	**2**	**5040 34 05**	**5040 34 15**	**5040 34 25**	**5040 34 35**	23.64
800	**2**	**5040 34 06**	**5040 34 16**	**5040 34 26**	**5040 34 36**	24.95

Rating [A]	Dimensions	RH **up**	RH **down**	LH **up**	LH **down**	Weight kg
Copper						
250	**1**	**5540 34 02**	**5540 34 12**	**5540 34 22**	**5540 34 32**	19.12
315	**1**	**5540 34 03**	**5540 34 13**	**5540 34 23**	**5540 34 33**	19.40
400	**2**	**5540 34 04**	**5540 34 14**	**5540 34 24**	**5540 34 34**	20.34
630	**2**	**5540 34 05**	**5540 34 15**	**5540 34 25**	**5540 34 35**	26.88
800	**2**	**5540 34 06**	**5540 34 16**	**5540 34 26**	**5540 34 36**	28.67
1000	**2**	**5540 34 07**	**5540 34 17**	**5540 34 27**	**5540 34 37**	29.95

CENTRE FEED UNITS



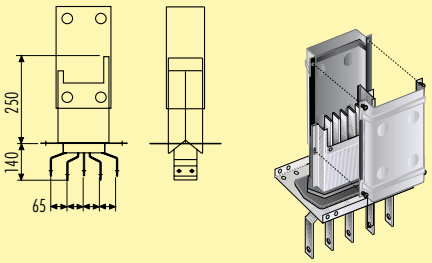


It feeds a trunking system from whatever joint point between two lengths. The centre feed unit is also used to reduce the volt drop of the line (see page 133).

Base cable entry dimensions
180 x 290

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 12 01**	17.27		
250	**5040 12 02**	17.13	**5540 12 02**	
315	**5040 12 03**	16.88	**5540 12 03**	
400	**5040 12 04**	22.06	**5540 12 04**	
500	**5040 12 08**	22.65		
630	**5040 12 05**	23.24	**5540 12 05**	
800	**5040 12 06**	23.02	**5540 12 06**	
1000			**5540 12 07**	

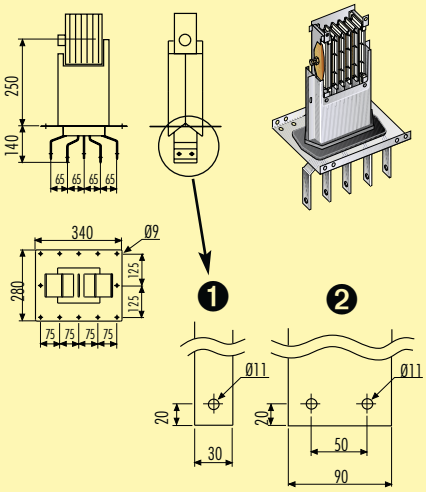
SWITCHBOARD-TRANSFORMER FEED UNITS



Right (RH)

Feed unit for direct connection of the busbar to a switchboard or to the low voltage terminals of a distribution transformer.

Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 10 01**	4.9		
250	**5040 10 02**	5.1	**5540 10 02**	5.7
315	**5040 10 03**	5.3	**5540 10 03**	6.0
400	**5040 10 04**	6.4	**5540 10 04**	9.2
500	**5040 10 08**	6.9		
630	**5040 10 05**	7.5	**5540 10 05**	9.3
800	**5040 10 06**	7.9	**5540 10 06**	11.4
1000			**5540 10 07**	12.9



Left (LH)

Feed unit for direct connection of the busbar to a switchboard or to the low voltage terminals of a distribution transformer.

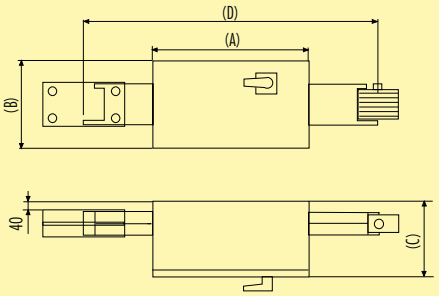
Rating [A]	Code	Weight kg	Code	Weight kg
	Aluminium		**Copper**	
160	**5040 10 11**	6.0		
250	**5040 10 12**	6.1	**5540 10 12**	6.7
315	**5040 10 13**	6.2	**5540 10 13**	7.0
400	**5040 10 14**	11.3	**5540 10 14**	7.8
500	**5040 10 18**	11.4		
630	**5040 10 15**	11.7	**5540 10 15**	14.2
800	**5040 10 16**	11.8	**5540 10 16**	15.9
1000			**5540 10 17**	17.1

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

Codes table

	Conductors	Case	Code
MR	4	**Galvanized**	- - - **0** - - - -
MRf	5	**Galvanized**	- - - **1** - - - -
MR-P	4	**Painted**	- - - **2** - - - -
MRf-P	5	**Painted**	- - - **3** - - - -

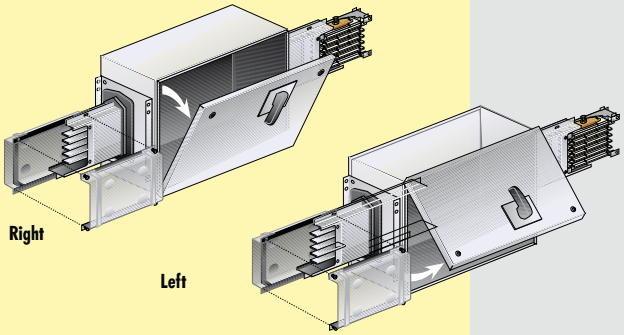
IN-LINE BUS SWITCH



This device allows disconnection of part of a line, while the other is live.

Dimensions [mm]

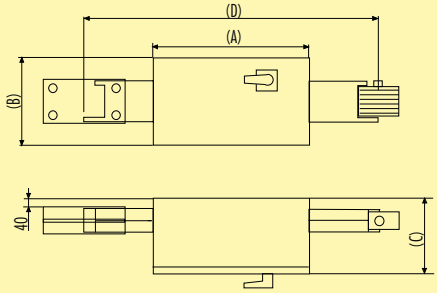
	1	*2*
A	550	1050
B	350	450
C	280	300
D	1050	1550



Rating [A]	Dimensions	Right	Left	Weight kg
Aluminium				
160	**1**	**5040 17 01**	**5040 17 21**	23.54
250	**1**	**5040 17 02**	**5040 17 22**	23.56
315	**1**	**5040 17 03**	**5040 17 23**	23.63
400	**2**	**5040 17 04**	**5040 17 24**	29.32
500	**2**	**5040 17 08**	**5040 17 28**	29.50
630	**2**	**5040 17 05**	**5040 17 25**	29.73
800	**2**	**5040 17 06**	**5040 17 26**	29.80

Rating [A]	Dimensions	Right	Left	Weight kg
Copper				
250	**1**	**5540 17 02**	**5540 17 22**	24.27
315	**1**	**5540 17 03**	**5540 17 23**	24.50
400	**2**	**5540 17 04**	**5540 17 24**	25.38
630	**2**	**5540 17 05**	**5540 17 25**	32.17
800	**2**	**5540 17 06**	**5540 17 26**	33.90
1000	**2**	**5540 17 07**	**5540 17 27**	35.13

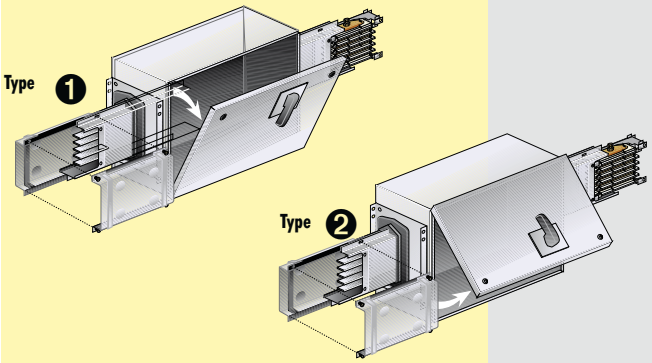
RATING REDUCER WITH SWITCH DISCONNECTOR AND FUSE HOLDER



With its isolator with fuseholder, a rating reducer guarantees protection to the downstream line. Moreover, it gives economic advantages for very long runs (>100m).

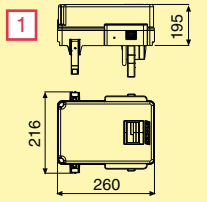
Dimensions [mm]

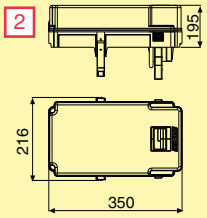
	1	*2*
A	550	1050
B	350	450
C	280	300
D	1050	1550



PLUG-IN BOX WITH COMPLETE INSULATION

STANDARD VERSIONS





		Rating	Protection devices and accessories	Code	Weight kg
	1	**32A**	**DIN** rail (8MW)	**5041 40 61**	1.60
	1	**32A**	**3xCH10 - Fuseholder**	**5041 40 62**	1.75
	1	**32A**	Transparent hinged door and **DIN** rail (4MW)	**5041 40 63**	1.70
	1	**32A**	Transparent hinged door and **DIN** rail (8MW)	**5041 40 64**	1.70
	1 Fuses not supplied Cable gland included.	**16A**	**3xD01 - Fuseholders** , transparent hinged (8MW) door and DIN rail **(8MW)**	**5041 40 68**	2.07
	1 Fuses not supplied Cable gland included.	**32A**	**3xD02 - Fuseholders** , transparent hinged (8MW) door and DIN rail **(8MW)**	**5041 40 69**	2.15
	2	**32A**	**DIN** rail (12MW)	**5041 40 71**	1.90
	2	**32A**	Transparent hinged door and **DIN** rail (12MW)	**5041 40 75**	2.05

WITH INTERNAL WIRING

		Rating	Protection devices and accessories	Code	Weight kg
	1 Fuse not supplied	**16A**	**3xD01 - Fuseholder**, transparent hinged door and DIN rail (8MW), 3 sockets Schuko 16A	**5041 41 11**	2.29
	2 Fuse not supplied	**16A**	**3xD01 - Fuseholder**, transparent hinged door and DIN rail (8MW), 1 socket CEE 3P+N+T 16A	**5041 41 62**	2.60
	2 Fuse not supplied	**32A**	**3xD02 - Fuseholder**, transparent hinged door and DIN rail (8MW), 1 socket CEE 3P+N+T 32A	**5041 41 71**	2.79
	2 Fuse not supplied	**16A**	**3xD01 - Fuseholder**, transparent hinged door and DIN rail (8MW), 2 sockets CEE 3P+N+T 16A	**5041 41 61**	2.96

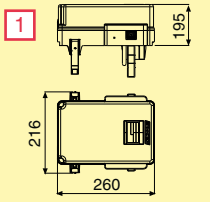
Energy withstand
400 ·10³ A²s

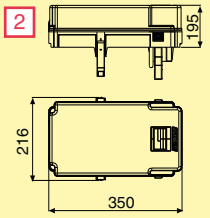
MAX power losses

Version 1 *16W*
2 *20W*

MW: module 17.5 mm.

WITH INTERNAL WIRING





		Rating	Protection devices and accessories	Codice	Weight kg
	1	**10A**	**3x1P 10A MCB char. B**, transparent hinged door and DIN rail (8MW)	**5041 41 01**	2.28
	1	**10A**	**3x(1P+N) 10A MCB char. B**, transparent hinged door and DIN rail (8MW)	**5041 41 02**	2.18
	1	**10A**	**3P 10A MCB char. B**, transparent hinged door and DIN rail (8MW)	**5041 41 03**	2.23
	1	**16A**	**3P 16A MCB char. B**, transparent hinged door and DIN rail (4MW)	**5041 41 29**	2.15
	1	**16A**	**3P 16A MCB char. C**, transparent hinged door and DIN rail (4MW)	**5041 41 27**	2.15
	1	**32A**	**3P 32A MCB char. C**, transparent hinged door and DIN rail (4MW)	**5041 41 43**	2.18
	1	**16A**	**4P 16A MCB char. B**, transparent hinged door and DIN rail (4MW)	**5041 41 30**	2.29
	1	**16A**	**4P 16A MCB char. C**, transparent hinged door and DIN rail (4MW)	**5041 41 28**	2.29
	1	**32A**	**4P 32A MCB char. C**, transparent hinged door and DIN rail (4MW)	**5041 41 44**	2.36
	1	**16A**	**3x(1P 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 3 N terminals; 3 PE terminals	**5041 41 23**	2.46
	1	**16A**	**3x(1P+N 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 3 N terminals; 3 PE terminals	**5041 41 24**	2.38
	1	**16A**	**(3P 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 3 N terminals; 3 PE terminals	**5041 41 25**	2.42
	1	**16A**	**(4P 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 3 N terminals; 3 PE terminals	**5041 41 26**	2.56

Energy withstand
400 ·10³ A²s

MAX power losses

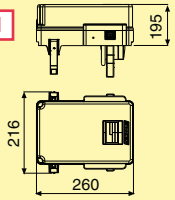
Version 1 *16W*
2 *20W*

MW: module 17.5 mm.

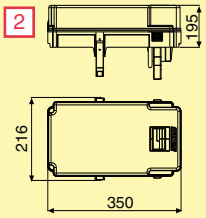
MR

WITH INTERNAL WIRING

1



2



		Rating	Protection devices and accessories	Code	Weight kg
	1	**32A**	**(3P 32A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 N terminals; 3 PE terminals	**5041 41 41**	2.48
	1	**32A**	**(4P 32A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 N terminals; 3 PE terminals	**5041 41 42**	2.65
	1	**16A**	**(1P 16A MCB char. B)** transparent hinged door and DIN rail (4MW), 2 sockets Schuko 16A	**5041 41 31**	2.10
	1 Fuse not supplied	**16A**	**(1P+N 16A MCB char. B)** transparent hinged door and DIN rail (4MW), 2 sockets Schuko 16A	**5041 41 32**	2.03
	1	**16A**	**(1P+N 16A/30mA RCCB)** transparent hinged door and DIN rail (4MW), 2 sockets Schuko 16A	**5041 41 33**	2.14
	1	**16A**	**(1P 16A MCB char. B)** transparent hinged door and DIN rail (4MW), 3 sockets Schuko 16A	**5041 41 22**	2.13
	1	**16A**	**(1P+N 16A MCB char. B)** transparent hinged door and DIN rail (4MW), 3 sockets Schuko 16A	**5041 41 21**	2.10
	1	**16A**	**3x(1P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets Schuko 16A	**5041 41 52**	2.52
	1	**16A**	**3x(1P+N 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets Schuko 16A	**5041 41 51**	2.37
	1	**16A**	**(3P 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 3 sockets Schuko 16A	**5041 41 53**	2.50
	1	**16A**	**(3P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets Schuko 16A	**5041 41 54**	2.50
	2	**16A**	**2x(1P 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 4 sockets Schuko 16A	**5041 41 88**	2.87
	2	**16A**	**2x(1P+N 16A MCB char. B)** transparent hinged door and DIN rail (8MW), 4 sockets Schuko 16A	**5041 41 89**	2.75

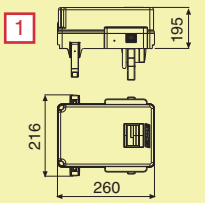
Energy withstand
400 ·10³ A²s

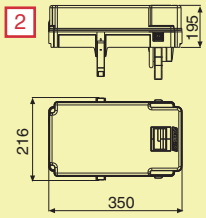
MAX power losses

Version 1 *16W*
2 *20W*

MW: module 17.5 mm.

WITH INTERNAL WIRING





		Rating	Protection devices and accessories	Code	Weight kg
	2	16A	**(3P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 1 socket CEE 3P+N+T 16A	**5041 41 86**	2.78
	2	16A	**(4P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 1 socket CEE 3P+N+T 16A	**5041 41 87**	2.92
	2	16A	**(3P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 2 sockets CEE 3P+N+T 16A	**5041 41 84**	3.14
	2 Fuse not supplied	16A	**(4P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 2 sockets CEE 3P+N+T 16A	**5041 41 85**	3.23
	2	16A	**3x(1P+N 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets CEE 2P+T 16A	**5041 41 81**	3.05
	2	16A	**3x(1P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets CEE 2P+T 16A	**5041 41 82**	3.20
	2	16A	**(3P 16A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets CEE 2P+T 16A	**5041 41 83**	3.18
	2	32A	**(3P 32A MCB char. C)** transparent hinged door and DIN rail (8MW), 3 sockets CEE 3P+N+T 32A	**5041 41 91**	2.91
	2	32A	**(4P 32A MCB char. C)** transparent hinged door and DIN rail (8MW), 1 socket CEE 3P+N+T 32A	**5041 41 92**	3.06
	1	16A	Transparent hinged door (4MW), 3 sockets Schuko 16A	**5041 42 21**	1.83
	1	32A	Transparent hinged door and DIN rail (8MW) 3 N terminals; 3 PE terminals	**5041 42 41**	1.94
	1	16A	Ready for MCB (8MW) 3 sockets Schuko 16A	**5041 42 51**	1.94
	2	16A	Ready for MCB (8MW) 3 sockets CEE 2P+T 16A	**5041 42 81**	2.55
	2	16A	Ready for MCB (8MW) 2 sockets CEE 3P+N+T 16A	**5041 42 82**	2.49
	2	32A	Ready for MCB (8MW) 2 sockets CEE 3P+N+T 32A	**5041 42 91**	2.59

MR

TAP-OFF BOXES WITH DISCONNECTING DEVICE ON THE COVER

WITH FUSE-HOLDER

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 fuseholders.

** Neutral section 50%*

▲ Tap-off boxes that cannot be used with MR - MRf 1000A Al

Rating [A]	Fuseholder	Picture	5 conductors codes	Weight kg
			MR - MRf	
32	CH 10 (ø10.3x3)	A	**5565 50 51**	0.85
63	CH 22 (ø22x58)	B	**5505 50 52**	3.20
125	NH 0	B	**5505 50 53**	3.35
125	NH 00	B	**5505 50 57**	3.35
160	NH 0	B	**5040 40 04**	3.60
250	NH 1	F	**5565 50 57▲**	14.90
400	NH 2	F	**5565 50 58*▲**	15.80

WITH TRANSPARENT HINGED DOOR FOR MCBS

All tap-off boxes with transparent door are equipped with a DIN 50022 rail for modular devices. The internal equipment is accessible through the transparent door without opening the cover, thus isolating the load connected.

** Neutral section 50%*

Rating [A]	DIN modules	Picture	5 conductors codes	Weight kg
			MR - MRf	
63	8	D	**5505 50 86**	3.20
63	11	E	**5505 50 88**	3.60
125	8	D	**5505 50 56**	3.20
125	11	E	**5505 50 68**	3.60
125	4	C	**5505 50 66**	3.00
160	4	C	**5040 40 24**	3.60
400	7	G	**5505 50 70***	13.40
400	11+11	H	**5505 50 71***	15.30

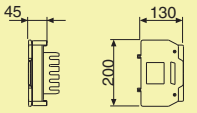
EMPTY READY FOR MCCBS

** Neutral section 50%*

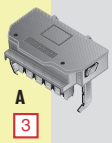
▲ Tap-off boxes that cannot be used with MR - MRf 1000A Al

These boxes are for use with MR. They can be plugged in and unplugged only when the cover is open i.e. when the tap-off is isolated. They can be plugged in and unplugged with the busbar live. They fit both aluminium and copper conductors.

Rating [A]	Characteristic	Picture	5 conductors codes	Weight kg
			MR - MRf	
125	empty	B	**5505 50 55**	2.90
400	empty	F	**5565 50 59*▲**	14.30

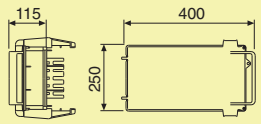


32A

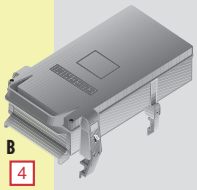


A

3

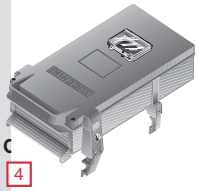


63 160A



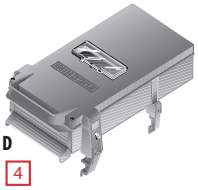
B

4



C

4

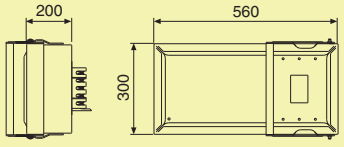


D

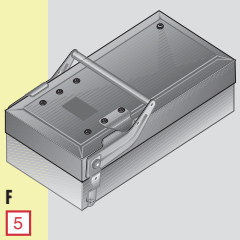
4

E

4

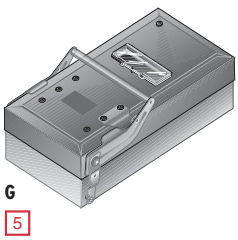


250 400A



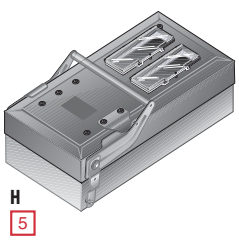
F

5



G

5



H

5

TAP-OFF BOXES WITH COVER DISCONNECTING DEVICE ON THE COVER

WITH FUSE-HOLDER

Tap-off box with zinced and painted steel sheet. Suitable for heavy loads and to shield electrical fields caused with flowing current.

Rating [A]	Fuse	Picture	5 conductors codes PE + FE **	Weight kg
63	CH 22 (ø22x58)	P	**5041 40 21**	8.75
125	NH 00	P	**5041 40 22**	8.90
160	NH 00	P	**5041 40 23**	9.10
250	NH 2	Q	**5041 40 24**	
630	NH 3	Q	**5041 40 25**	

WITH SWITCH DISCONNECTOR AND FUSE HOLDER (AC23)

These tap-off boxes are equipped with an isolator switch (AC23) and fuse holder. The switch is operated through a rotary handle on the cover. N.B. It is not possible to open, close, install or pull out the tap-off box if the switch is in "ON" position.

Rating [A]	Picture	5 conductors codes PE + FE **	Weight kg
63	P	**5041 16 01**	
125	P	**5041 16 22**	
160	P	**5041 16 23**	
250	Q	**5041 16 24**	
400	Q	**5041 16 25**	
630	Q	**5041 16 46**	

EMPTY VERSION

These boxes are for use with MR. They can be plugged in and unplugged only when the cover is open i.e. when the tap-off is isolated. They can be plugged in and unplugged with the busbar live. They fit both aluminium and copper conductors.

"PE+FE" tap-off boxes have separate terminals for the two parallel earths (casing and conductor).

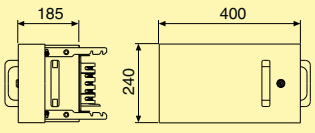
They can be customized with MCCB from various manufacturers.

Available with factory installed circuit breakers.

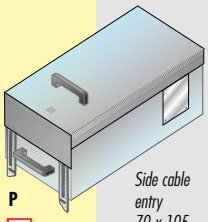
** PE Protection earth*

*** FE Functional earth*

Rating [A]	Picture	5 conductors code PE + FE **
63	P	**5041 40 01**
125	P	**5041 40 02**
160	P	**5041 40 03**
250	Q	**5041 40 04**
630	Q	**5041 40 05**

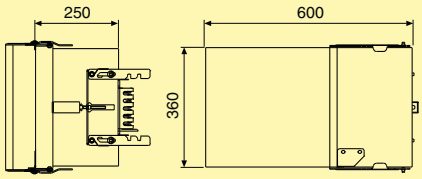


63 160A

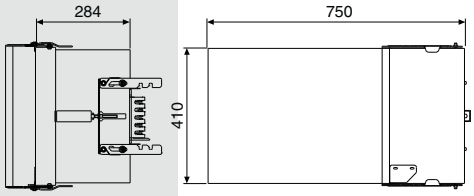


P 6

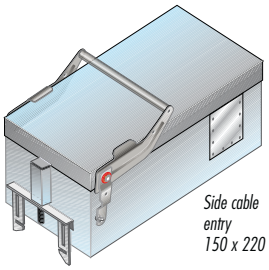
Side cable entry 70 x 105



7 **250A**



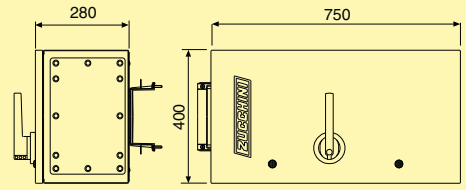
8 **400 630A**



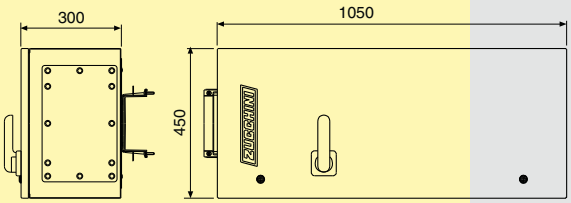
Side cable entry 150 x 220

Q 7 8

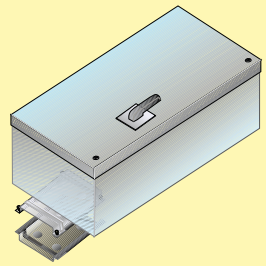
WITH SWITCH DISCONNECTOR AND FUSE HOLDER



9 **630A**



10 **800 1000A**



9 10

"Bolt-on" tap-off boxes.They use the joint between straight lengths. As this connection affects live conductors, it can NOT be carried out when the line is live - the line has to be isolated.

Cable entry dimensions [mm]

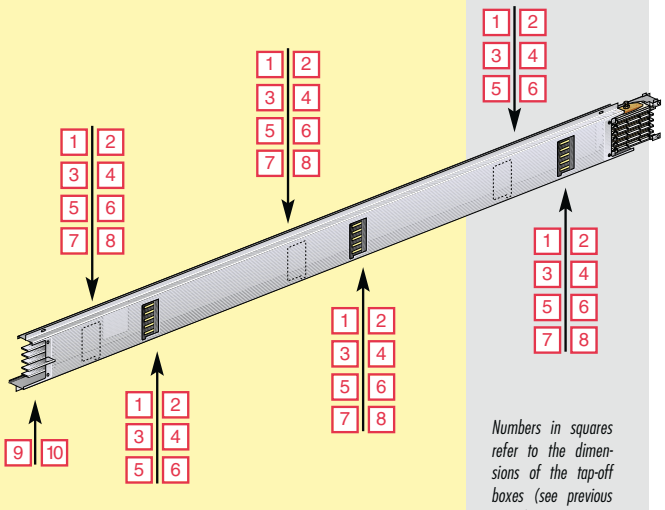
Tipo		
	9	180 x 290
	10	210 x 380

Rating [A]	Dimensions	Switch	Code	Code	Code
Aluminium			**630**	**800**	**1000**
630	1	AC23	**5040 18 01**	**5040 18 02**	**-**
800	2	AC23	**-**	**5040 18 04**	**-**
1000	2	AC23	**-**	**-**	**-**

Rating [A]	Dimensions	Switch	Code	Code	Code
Copper			**630**	**800**	**1000**
630	1	AC23	**5540 18 01**	**5540 18 02**	**5540 18 03**
800	2	AC23	**-**	**5540 18 04**	**5540 18 05**
1000	2	AC23	**-**	**-**	**5540 18 06**

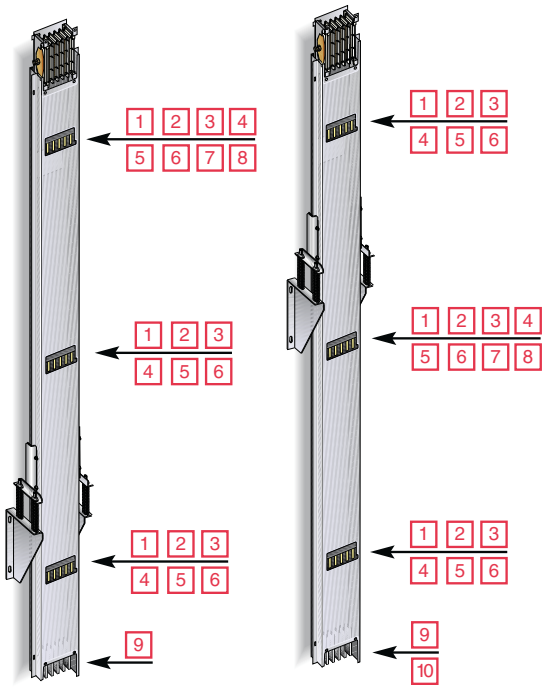
STRAIGHT LENGTH WITH 3 OUTLETS

Edgewise



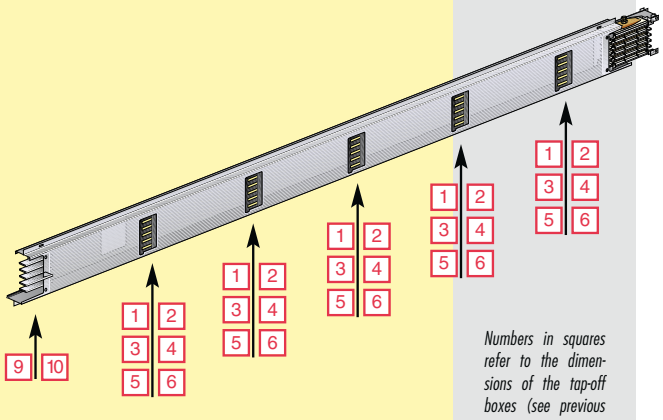
Numbers in squares refer to the dimensions of the tap-off boxes (see previous pages).

Rising main



STRAIGHT LENGTH WITH 5 OUTLETS

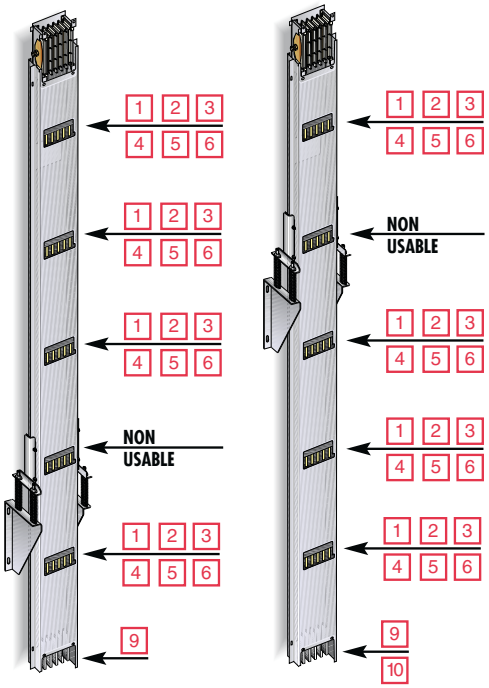
Edgewise



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

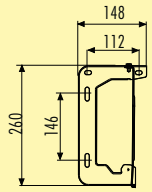
In lengths with 5 outlets (picture 5), using an outlet excludes the use of the next one.

Rising main

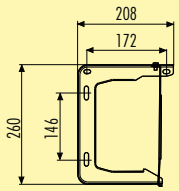


MR

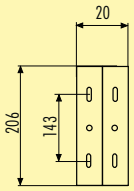
SUSPENSION BRACKETS



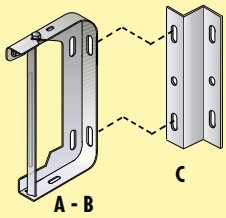
A



B



C



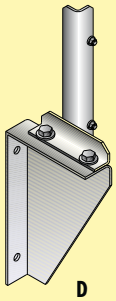
A - B

C

Wall spacer. Needed when the hanger has to be fixed directly to the wall.

Rating [Å] Al	Cu	Mounting	Picture	Code	Weight kg
160	250				
250	315	1 bracket every 2 metesr of line	A	**5063 20 01**	0.55
315	400				
400	630				
500					
630	800	1 bracket each 2 meters of line	B	**5063 20 03**	0.60
800	1000				
		Wall spacer 40 mm	C	**5063 22 05**	0.05

SUSPENSION HANGER FOR RISING MAIN

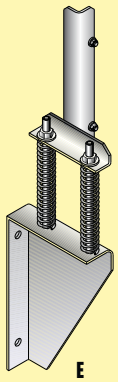


D

Suspension hanger for vertical elements. Suitable for rising mains up to 4 m and for weights up to 300kg. It has to be combined with 50632001/3.

Mounting	Use	Picture	Code	Weight kg
1 bracket at the base of the rising main	max 4 m.	D	**5040 37 11**	1.05

SPRING SUSPENSION HANGER FOR RISING MAIN

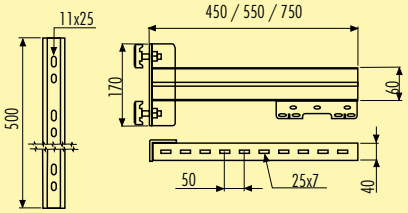


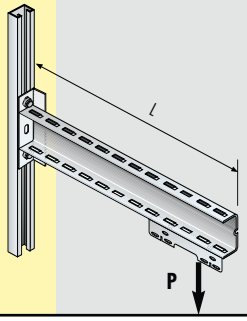
E

Spring suspension hanger for rising mains. Use 1 hanger every 300 kg (see weight table).

Mounting	Use	Picture	Code	Weight kg
1 bracket every 300 kg.	min 4 m. distance	E	**5040 37 12**	1.20

WALL FIXING BRACKET

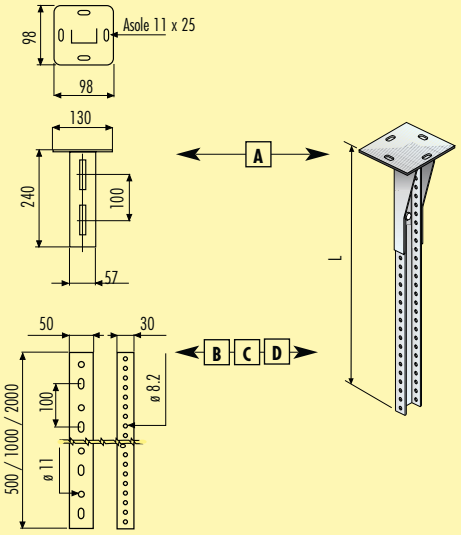




Adjustable arm both in height and in depth. The bracket holder can be coupled with the MS - MR - TS brackets.

Length	Load on end point	Code	Weight kg
L= 0.45 m	p max= 80 kg	**5063 22 12**	2.80
L= 0.55 m	p max= 68 kg	**5063 22 13**	3.00
L= 0.75 m	p max= 50 kg	**5063 22 14**	3.50

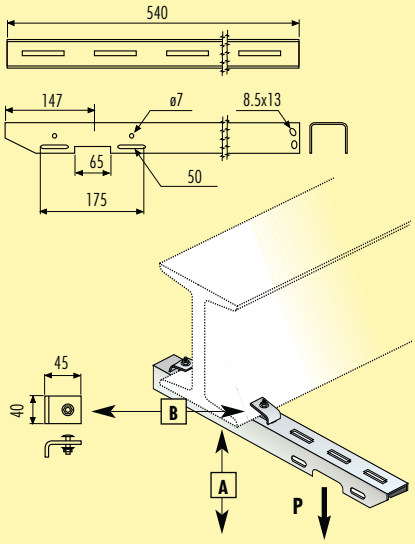
WALL FIXING BRACKET KIT



Ceiling bracket. Comprises of a base to be fixed to the ceiling and a drilled unistrut of various lengths.
The strut is drilled to accept MR brackets.

Components	Length	Picture	Code	Weight kg
Ceiling Flange		A	**5063 22 01**	2.80
U - shaped iron	**L= 0.50**	B	**5063 22 02**	3.00
U - shaped iron	**L= 1**	C	**5063 22 03**	3.50
U - shaped iron	**L= 2**	D	**5063 22 04**	3.50

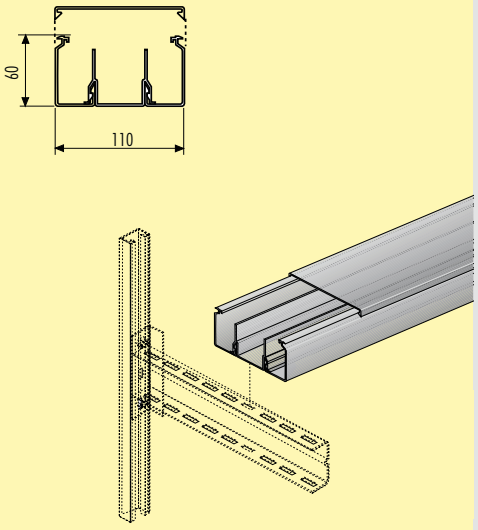
BEAM FIXING BRACKET



Beam bracket. It has a an arm and two clamps to the beam.

Components		Picture	Code	Weight kg
Beam shelf base	p max= 65 kg	A	**5063 22 10**	0.90
Beam clamp		B	**5063 22 11**	0.90

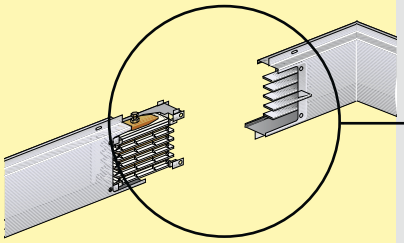
TRIPLE CABLE CHANNEL



Components		Code	Weight kg
Cable channel 110x60 with 3 sectors	L=3 m PVC	**5063 01 10**	

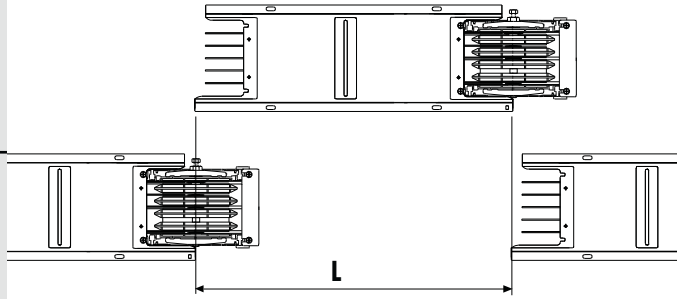
MR

STRAIGHT LENGTHS

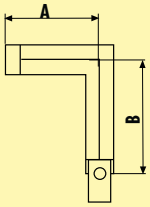


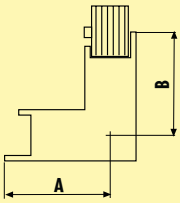
Always measure from the long side of the casing as illustrated in the picture. We will call it "long casing".

Straight lengths are available from 600mm to 3000mm.

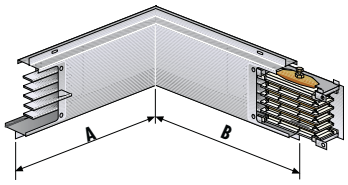


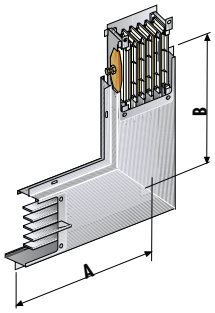
ELBOWS



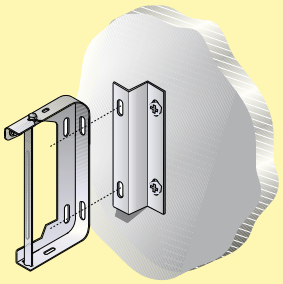


In case of elbows measure from the long casing to the axis of the element.



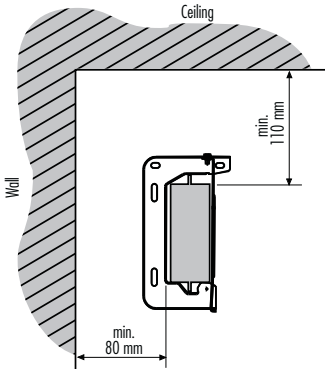


MINIMUM FIXING DISTANCES

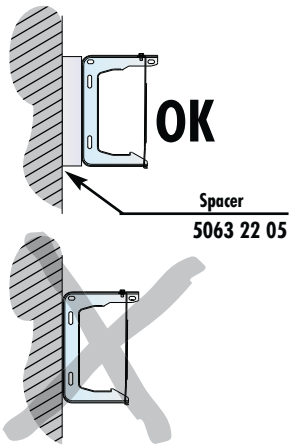


Do not fix the hanger directly on the wall, use the appropriate spacer 50632005.

Minimum fixing distance



Wall fixing



HOW TO DESIGN THE SYSTEM

❶ Use end feed unit LH.
This gives the neutral bar positioning on the right of elements and the tap-off box with cable entry at the base.

❷ Use the vertical hanger for rising main as a function of the run weight.
For vertical lengths less than 4 metres fit on the base of the busbar a vertical bracket code 50403711; for longer lengths use vertical suspension hanger type 50403712 every 300 kg of rising main.

❸ Use standard suspension brackets with spacer 40mm every 2 metres of the rising main.

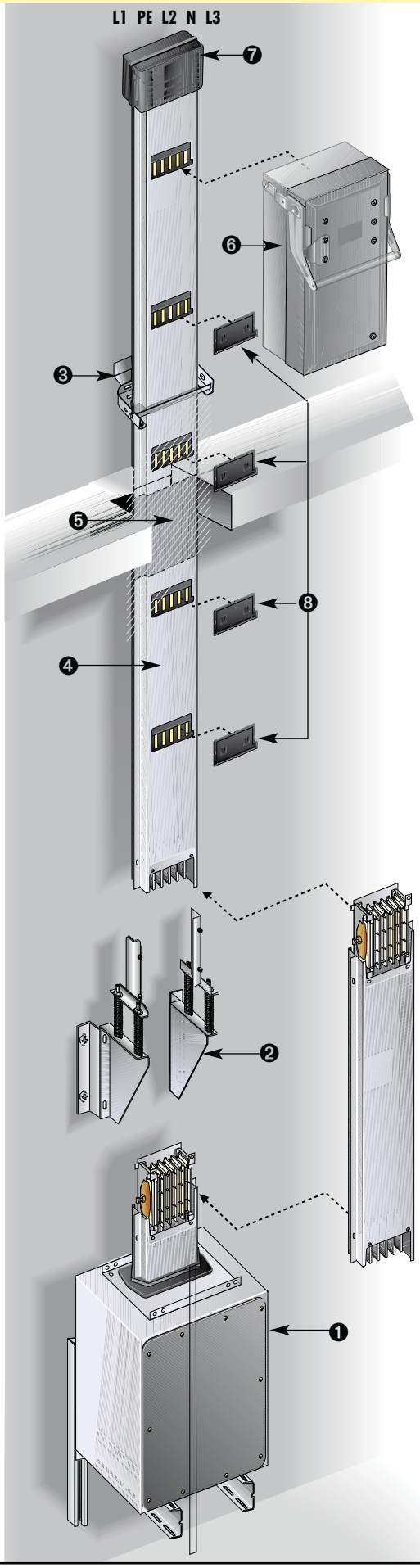
❹ Use straight lengths with plug outlets on one side

❺ Use the straight length with fire barrier to maintain the fire resistance of the floor.
Please specify the position of the internal fire barrier before placing an order (see pg. 75)

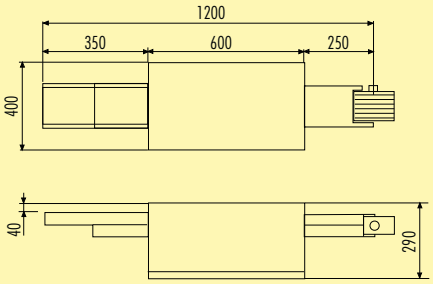
❻ The tap-off box can be installed on the joint between the elements or on the outlets.

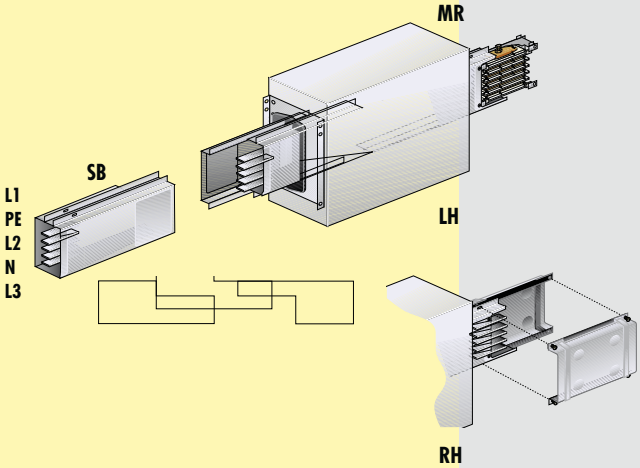
❼ At the end of the rising main use the end cover IP55.
Before mounting the end cover remove the monobloc prefitted on the last element of rising main.

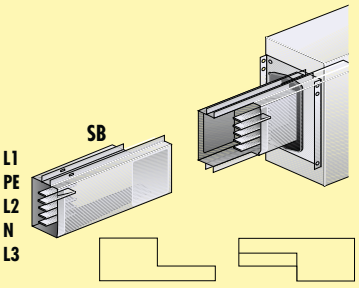
❽ Insert the plug outlet covers to guarantee the degree of protection IP55 to the run.



ADAPTER SB → MR







How to make up the code

5 **0** 4 **0** 0 2 **2** **1**

Conductors

0 Aluminium
5 Copper

Conductors

0 Galvanized
1 Full galvanized
2 Painted
3 Full painted

Type

2 Right
3 Left

Rating

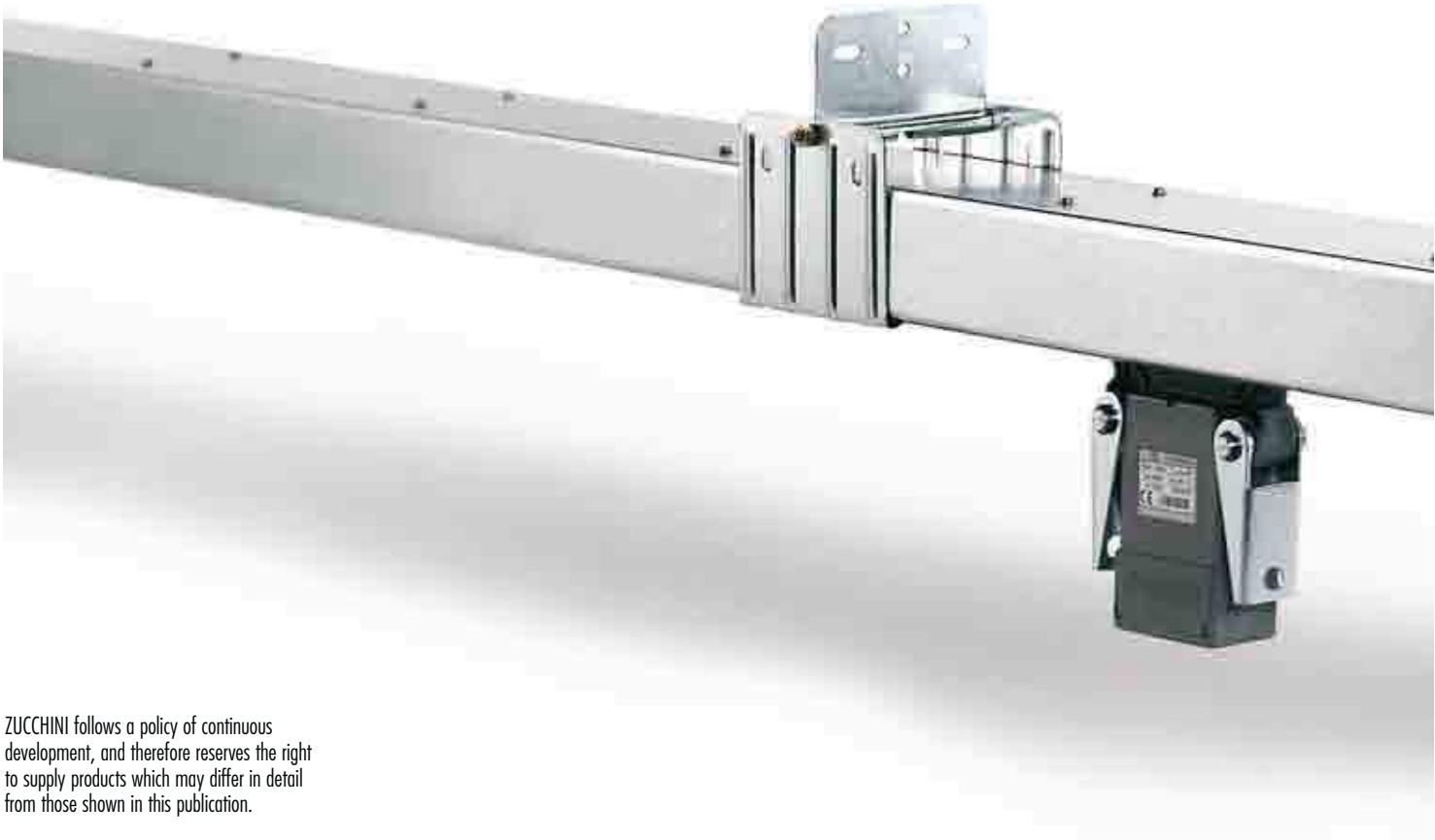
1 160A
2 250A
3 315A
4 400A
5 630A
6 800A
7 1000A
8 500A

Example code

50400226 → means
Aluminium
Galvanized
Type RH
800A

55420235 → means
Copper
Full galvanized
Type LH
630A

NOTES



ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

TROLLEY SYSTEM 63 - 250A

INDEX

TS
TECHNICAL DESCRIPTION

GENERAL FEATURES

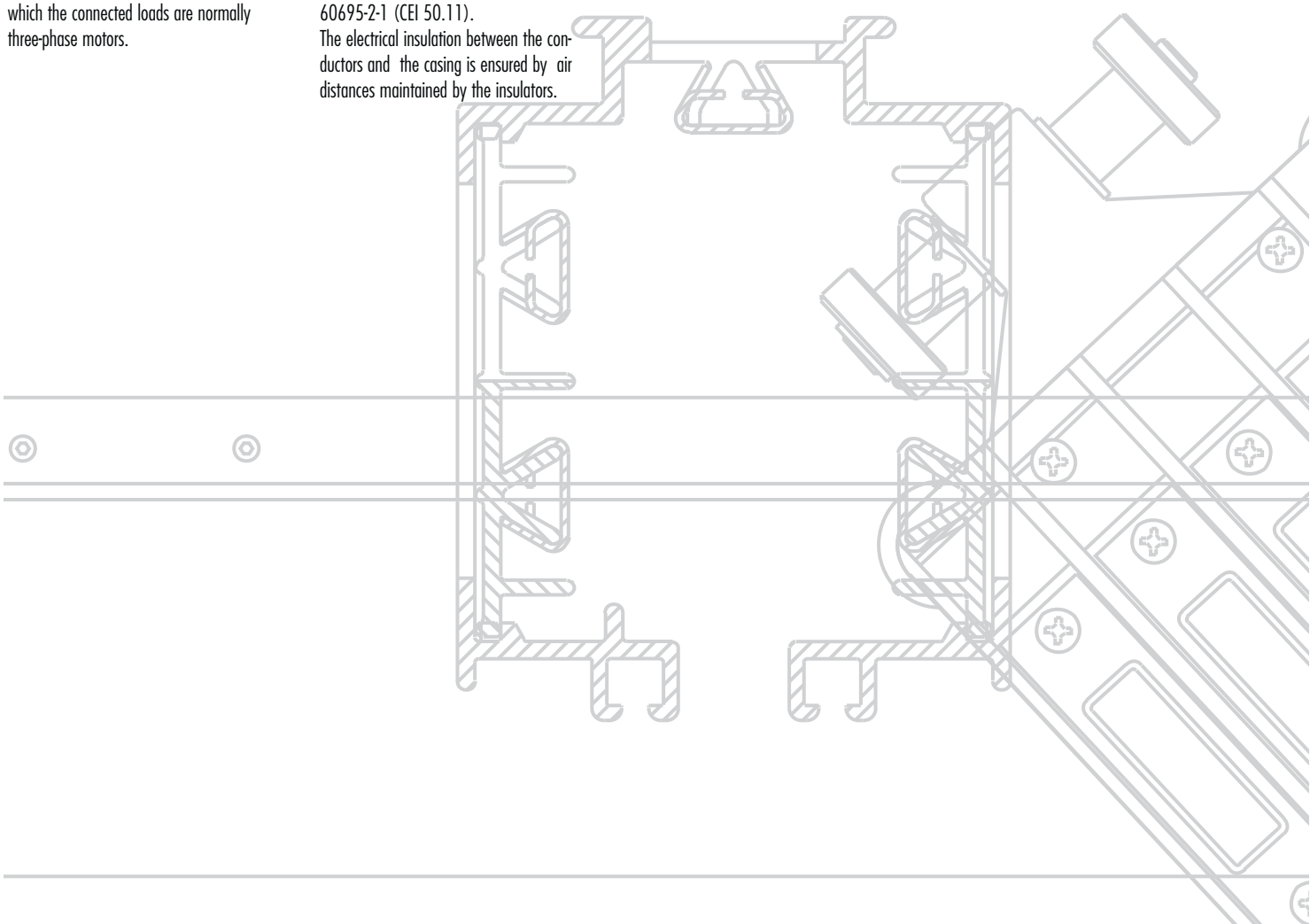
TS (Trolley System) is part of the Zucchini range used for supplying moving devices such as: overhead cranes, traversing motors, assembly lines, etc.
TS is suitable for straight and curved sections (route changes only in the horizontal).
Zucchini TS can be installed quickly using an electrical terminal junction and a wide range of supporting accessories.
TS, as all Zucchini products, is fully compliant with the CEI EN 60439-1 / 2 Harmonised Standards; the rated current of the Zucchini busbar trunking systems is always rated at the average ambient temperature of 40°C (the Standard requires 35°C), thus offering the market suitably oversized products.
The TS line is available in the following versions: 3L+N+PE (5 conductors) for ratings from 63-70-110-150A and 3L+PE (4 conductors) for a 250A rating in which the connected loads are normally three-phase motors.

STRAIGHT LENGTHS

TS straight lengths include the following components:
• casing made from a hot-galvanised steel section bar (Senzimir), which is characterised by optimum mechanical rigidity due to its rectangular shape and 1.2 mm sheet metal thickness (1.5 mm for 250A). In addition, it preserves its linearity over time.
As for the 63A (MTS63) rating, the casing is made of anodised extruded aluminium with a minimum thickness of 1.4 mm.
• 5 conductors with the same section 3L+N+PE (4 for the TS 250A), shaped to guarantee excellent mechanical strength.
The conductors are made of copper with purity no less than 99.9% (electrolytic copper) and are spaced out with plastic insulators reinforced with 20% glass fibre.
The insulators have a V1 self-extinguishing degree (as per UL94) and comply with the incandescent wire test as per EN 60695-2-1 (CEI 50.11).
The electrical insulation between the conductors and the casing is ensured by air distances maintained by the insulators.
• the slot along the underside of the busbar, allows a current trolley to slide in it. The size of the slot gives an IP20 degree of protection.
• an independent electrical junction terminal system for fast and reliable connection of the live conductors and PE.
The terminals are made with bronze plates, thus keeping their base smooth in order to make the trolleys slide more easily.
The mechanical junction can be completed by applying the connection flanges to the casing.
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END FEED UNITS

These enable the TS busbar to be supplied by cable ; the assembly of the line is carried out with a quick terminal connection as with the straight lengths.
The cable entry is generally located at the base of the end feed unit.
The TS range has centre feed units which can be installed wherever there is a junction between the straight lengths.



END COVERS

End covers ensure the IP20 degree of protection at the end of the run.

HANGERS

In order to fix the run to the structure of the building, directly to a wall, ceiling or beam bracket, it is necessary to use a bracket which serves as a busbar collar. An electrical junction, set up for suspending the busbar, is available on the TS line. The bracket has holes so it can be easily used with the fixing brackets available in the Zucchini catalogue.

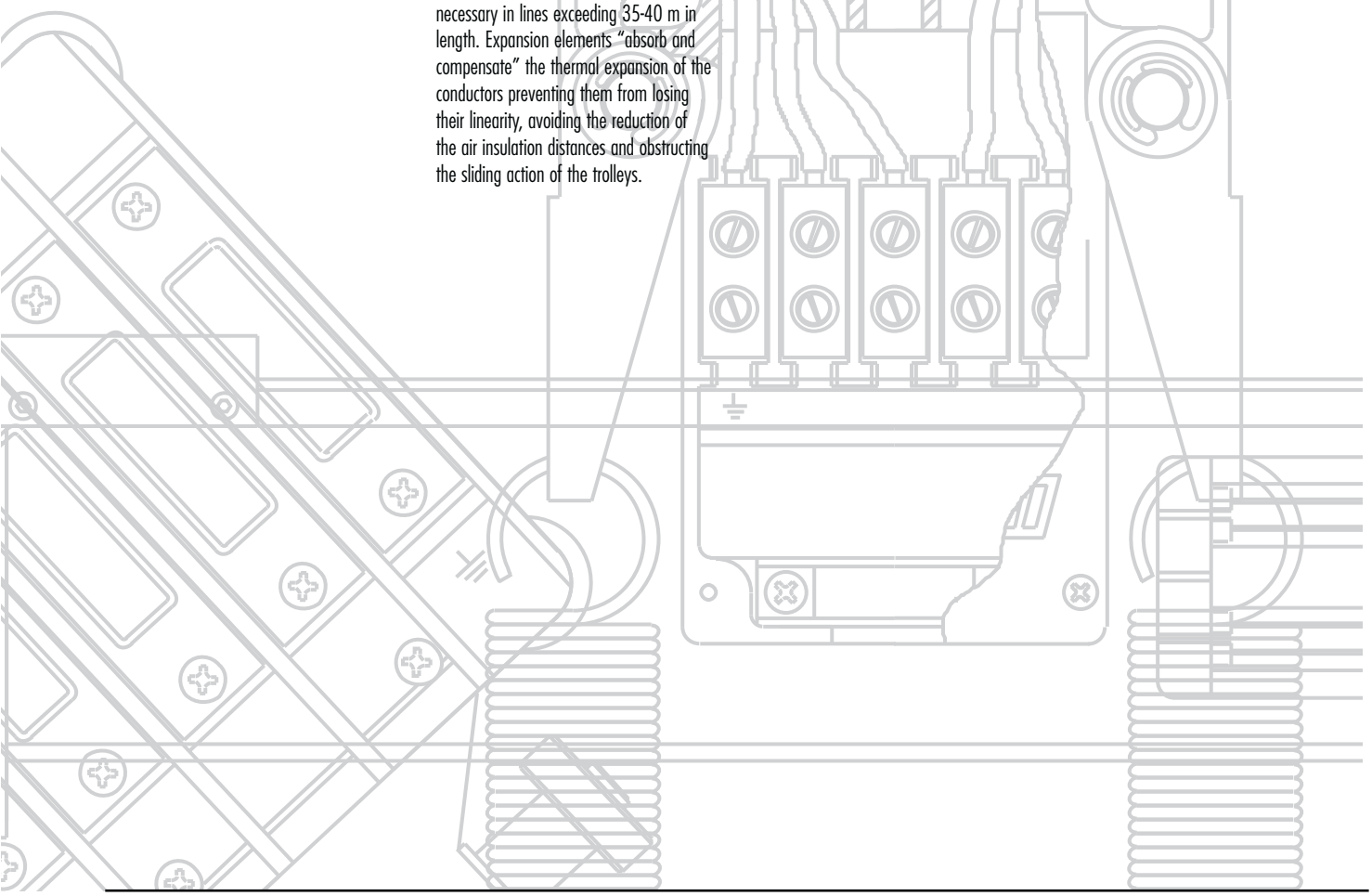
TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Zucchini offers different technical solutions:
a) curved elements: available for making route changes (only horizontally) up to a minimum radius of 1.5m.
The joint is of the quick type as with the straight lengths. Standard trolleys slide efficiently even within the curved sections of the run. The protection degree is IP20.
b) straight lengths with trolley introduction device: these elements are provided with an access door on the underside.
With this door open, it makes it possible to insert or remove a trolley from the line. Trolleys can generally be introduced to the line near the end covers. However, lines with several operating trolleys or when using very long lines, it is recommended to use an inserting element in the middle of the line so as to make maintenance operation on the trolleys easier.
The degree of protection is IP20.
c) straight lengths with a thermal expansion device. These elements are necessary in lines exceeding 35-40 m in length. Expansion elements "absorb and compensate" the thermal expansion of the conductors preventing them from losing their linearity, avoiding the reduction of the air insulation distances and obstructing the sliding action of the trolleys.

TROLLEYS

These are used for connecting and supplying 25A – 40A – 80A or 160A three-phase loads (in the coupled version). The trolleys are equipped with 5 graphite brushes (3L+N+PE) which, due to the action of the springs, keep the correct pressure on the conductors enabling them to pick up current from the line while the trolley is moving (travel) inside the TS busbar.
The trolleys can be coupled with a mechanical joint so as to pickup twice the rated current of a single trolley:
40A trolleys are available for TS5 lines from 70 to 150A; if coupled, the trolleys can pickup 80A from the line (40+40=80A); the trolley is 80A for the TS 250A line and, if coupled with a twin trolley, it can pickup up to 160A.
Trolleys are generally driven by the same electric motor they supply power to; the motor coupling is achieved with a "drive arm" which suitably releases the traction forces on the trolley without risking a trolley malfunction.

The drive arms are connected to the trolleys with special springs which reduce the acceleration (so-called "sudden pulls") when starting up and when braking.
The maximum travelling speed of the trolleys is 90 m/min (150 m/min for the MTS 63A).
A box used as an accessory can be connected directly downstream of the trolley; inside the box is a fuseholder to protect the cable from overcurrents.
All insulating plastic components are in comply with the incandescent wire test (EN 60695-2-1) and have a V1 self-extinguishing degree (UL94); the standard degree of protection is IP20 without using additional sealing accessories.



TS

TROLLEY SYSTEM

**BUSBAR TRUNKING SYSTEM
FOR MOBILE LOADS**

End cover. It completes line assembly and gives an IP20 degree of protection.

Suspension bracket. It can be positioned anywhere along the line.

Straight elements

LINE DETAILS

End feed unit

End cover

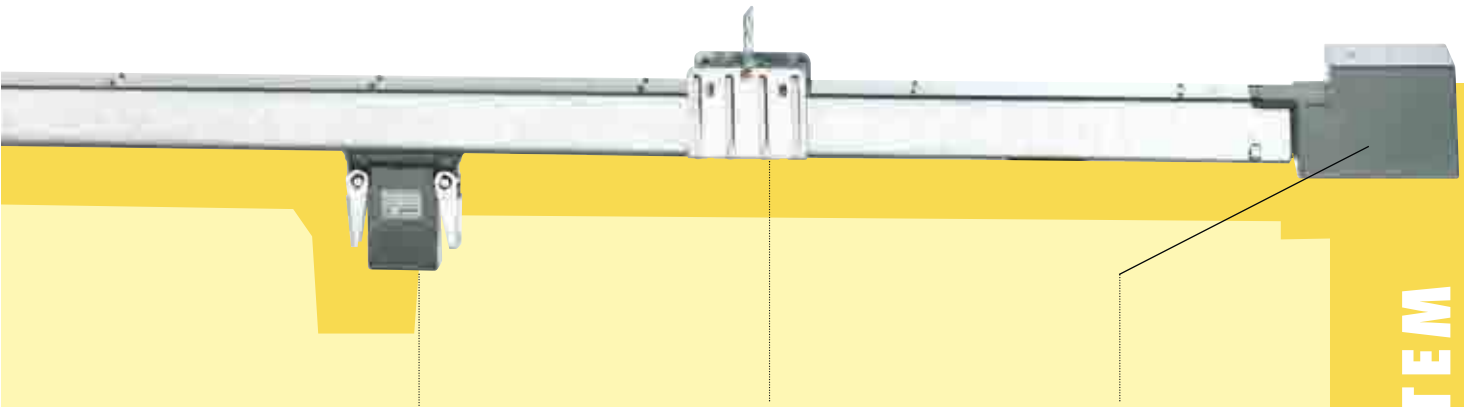
Electrical and mechanical joint

Suspension and joint hanger

Automated warehouses

Gantry cranes

Workbenches



Trolley. It slides on the conductors, assuring contact with the conductors.

Coupling clamp with suspension bracket.

End feed unit

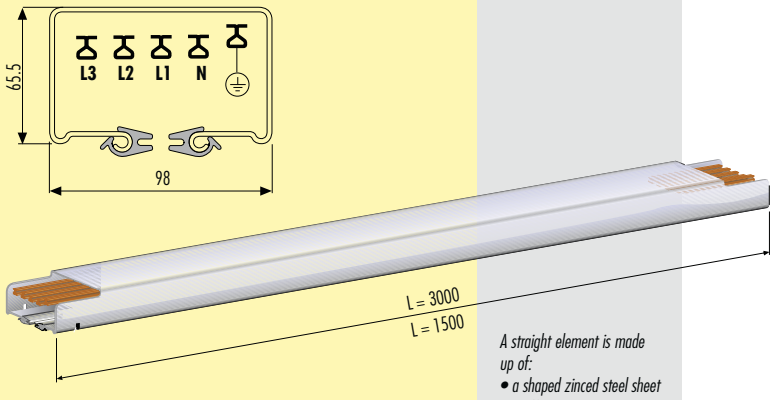
Suspension hanger

Tap trolley 40A

TS5 - IP20

Three-pole + Neutral + copper earth bar
Trolley bars:
Current rating 63-70-110-150 A

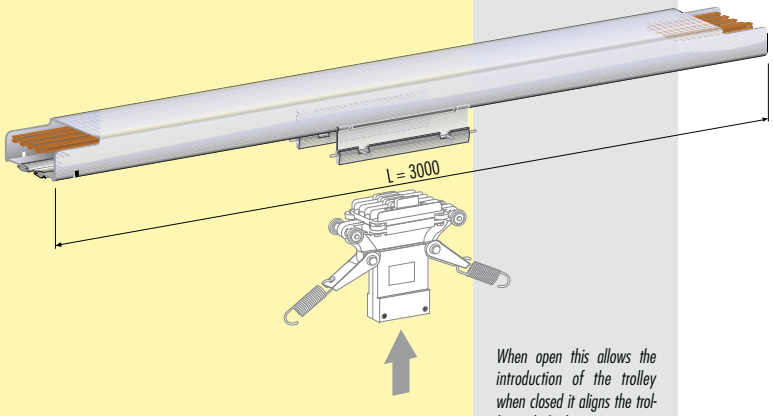
STRAIGHT ELEMENT



A straight element is made up of:
- *a shaped zinced steel sheet to offer good mechanical strength, gasket in rigid PVC*
- *conductors rack in polyamide resin reinforced with fibreglass with high insulating level*
- *phase conductors in electrolytic copper UNI5649 ETP 99.9, allowing smooth sliding of the trolley.*

Rating [A]	Code L=3000	Code L=1500	Weight kg
70	**80520101**		12
110	**80530101**		12.5
150	**80540101**		13
70		**80530102**	6
110		**80530102**	6
150		**80540102**	6.5

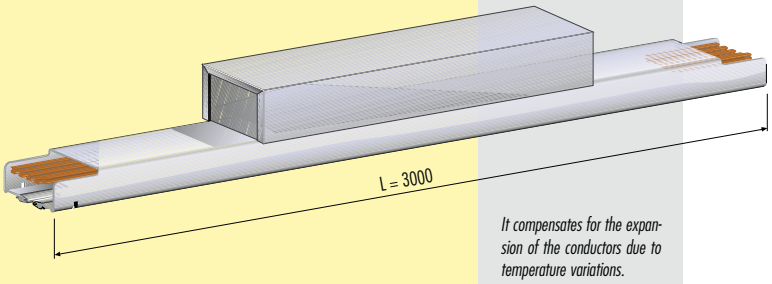
3 m STRAIGHT ELEMENT WITH TROLLEY INTRODUCTION DEVICE



When open this allows the introduction of the trolley when closed it aligns the trolley with the line.

Rating [A]	Code L=3000	Weight kg
70	**80530201**	13
110	**80530201**	13
150	**80540201**	13.5

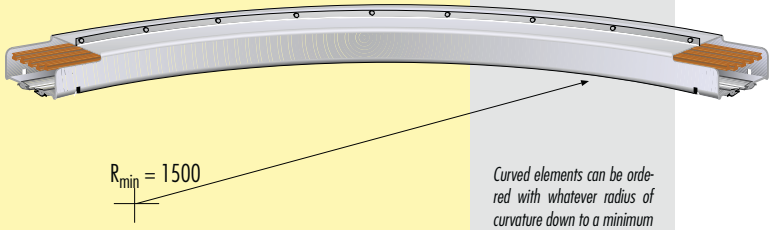
3 m. STRAIGHT ELEMENT WITH EXPANSION JOINT



It compensates for the expansion of the conductors due to temperature variations.
We suggest they are used every 35-40m.

Rating [A]	Code L=3000	Weight kg
70	**80530301**	14
110	**80530301**	14
150	**80540301**	14.5

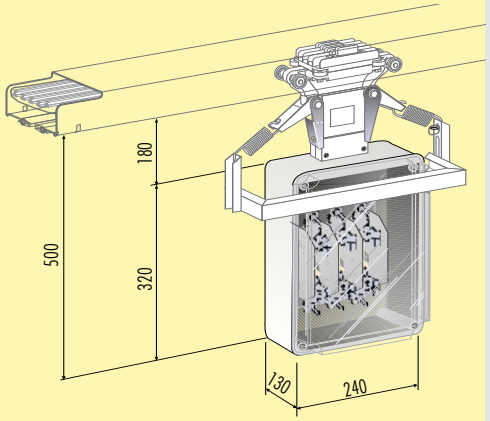
CURVED ELEMENT



Curved elements can be ordered with whatever radius of curvature down to a minimum of 1500mm. No special trolley is needed.

Rating [A]	Code L=1500	Weight kg
70	**80530401**	-
110	**80530401**	-
150	**80540401**	-

BOX WITH NH 00 FUSE HOLDER FOR LINE 70A 250A

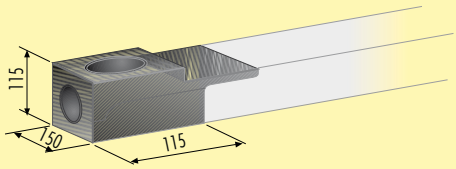


Set of three fuseholders NH00

Rating [A]	Code	Weight kg
max 160	**80045504**	-

TS

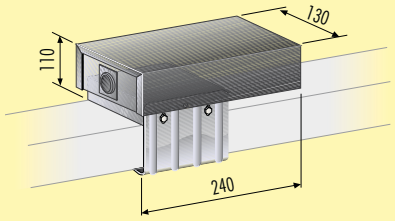
END FEED UNIT



The end feed unit can be installed at one end or the other of a line.

Rating [A]	Code	Weight kg
70	**80541001**	-
110	**80541001**	-
150	**80541001**	-

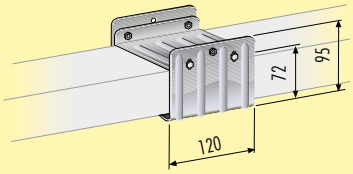
CENTRE FEED UNIT



It feeds a trunking system from whatever central position. The centre feed unit is also used to reduce the volt drop of the line.

Rating [A]	Code	Weight kg
70	**80541101**	-
110	**80541101**	-
150	**80541101**	-

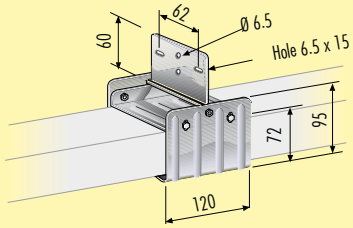
COUPLING CLAMP



One for each element.

Rating [A]	Code	Weight kg
70	**80542001**	-
110	**80542001**	-
150	**80542001**	-

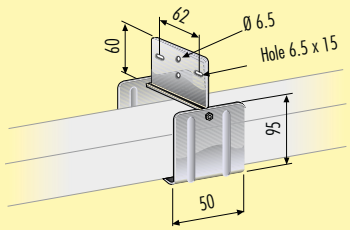
COUPLING CLAMP (ready for suspension)



It allows to hang the line at its junction points.

Rating [A]	Code	Weight kg
70	**80542002**	-
110	**80542002**	-
150	**80542002**	-

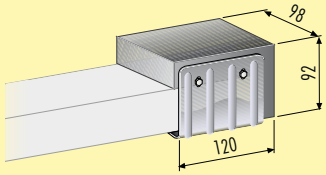
CENTRAL SUSPENSION BRACKET



It can be positioned anywhere along the line. Use one every 2 metres.

Rating [A]	Code	Weight kg
70	**80042101**	-
110	**80042101**	-
150	**80042101**	-

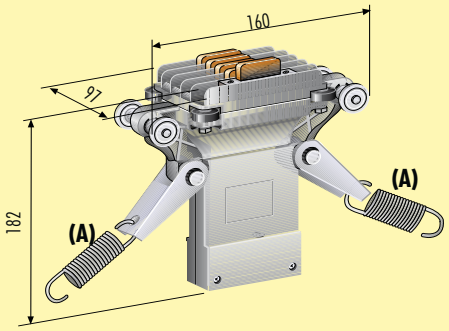
END COVER



The end cover can be installed at one end or the other of a line.

Rating [A]	Code	Weight kg
70	**80531301**	-
110	**80531301**	-
150	**80541301**	-

TROLLEYS 3P + N + T 40A

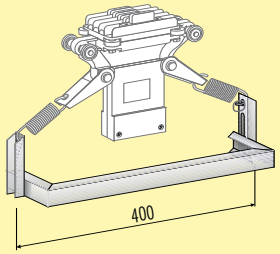


Always pull the tap-trolley with the appropriate springs (A).

With its graphite contacts assuring the electrical continuity, this trolley is available for 40A; but its rating can be doubled to 80A using two trolleys in parallel with code 80045203. It works properly up to a sliding speed of 90m/min and bears weights up to 30kg.

Code L=1500	Weight kg
80545002	-

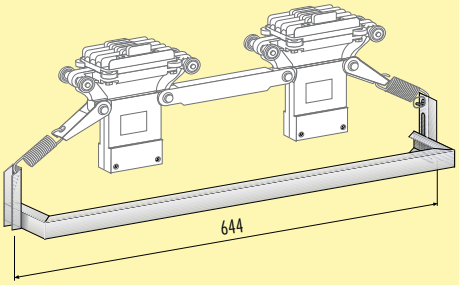
DRIVE ARMS



SIMPLE

For perfect alignment and excellent sliding a driving arm is essential. It adjusts the trolley both horizontally and vertically.

Code L=1500	Weight kg
80045201	-

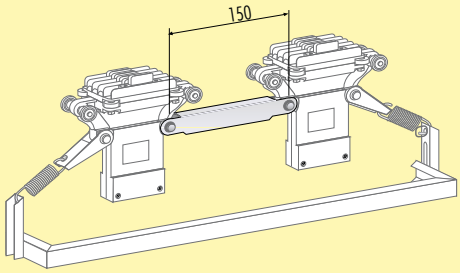


DOUBLE

For perfect alignment and excellent sliding a driving arm is essential. It adjusts adjust the trolley both horizontally and vertically.

Code L=1500	Weight kg
80045202	-

TROLLEY JUNCTION



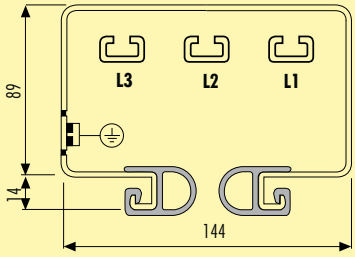
It joins two trolleys together, obtaining a supply of 80A.

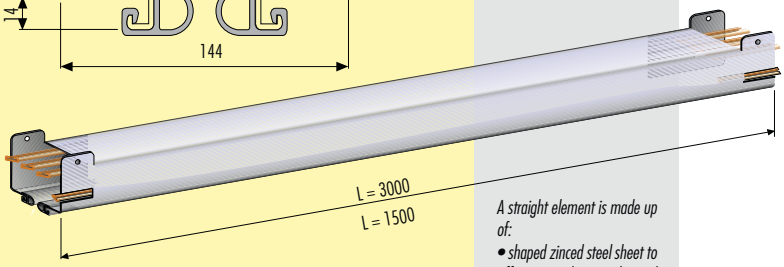
Code L=1500	Weight kg
80045203	-

TS250 - IP20

Three-conductors + copper earth bar: Rating 250 A

STRAIGHT ELEMENT





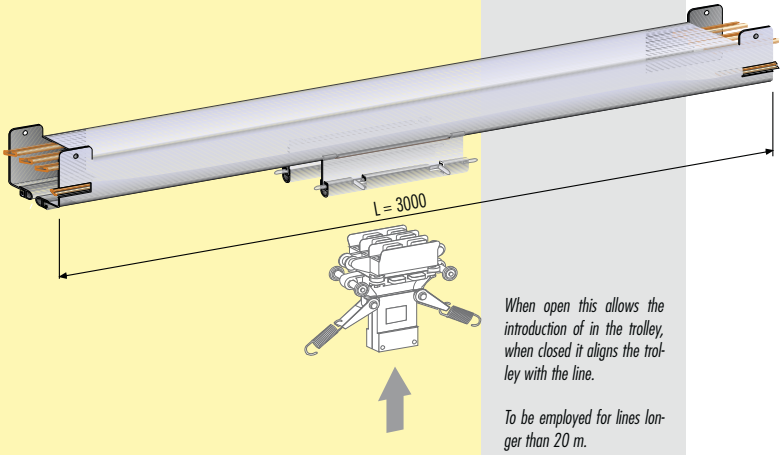
Rating [A]	Code L=3000	Code L=1500	Weight kg
250	**82200101**		29.2
250		**82200102**	15

A straight element is made up of:

- *shaped zinced steel sheet to offer good mechanical strength*
- *conductors supported in polyamide resin reinforced with fibreglass with high insulating level*
- *phase conductors in electrolytic copper UNI5649 ETP 99.9, allowing smooth sliding of the trolley.*
- *two rigid PVC gaskets assuring an IP20 protection degree against direct contact.*

3 m STRAIGHT ELEMENTS WITH TROLLEY INTRODUCTION DEVICE

Rating [A]	Code L=3000	Weight kg
250	**82200201**	29.2

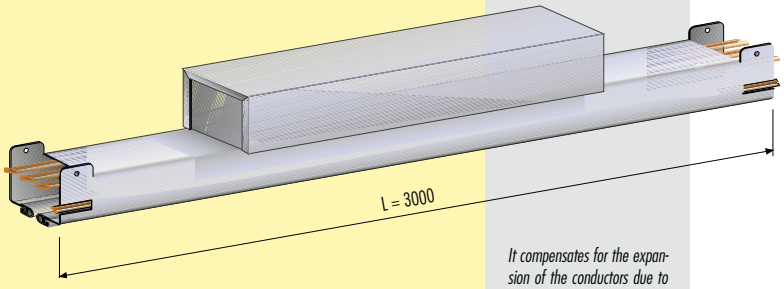


When open this allows the introduction of in the trolley, when closed it aligns the trolley with the line.

To be employed for lines longer than 20 m.

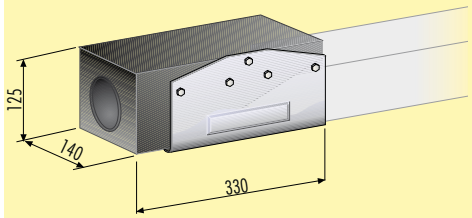
3 m STRAIGHT ELEMENT WITH EXPANSION JOINT

Rating [A]	Code L=3000	Weight kg
250	**82200301**	32



It compensates for the expansion of the conductors due to temperature variations. We suggest they are used every 35-40m.

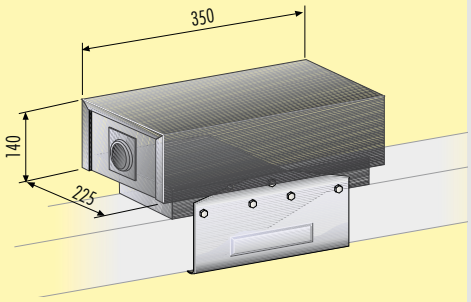
END FEED UNIT



The end feed unit can be installed at one end or the other of a line.

Rating [A]	Code	Weight kg
250	**82001001**	-

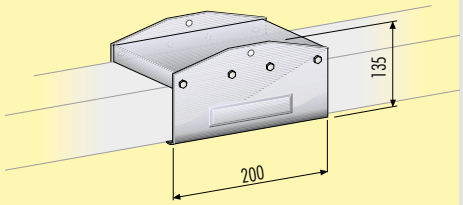
CENTRE FEED UNIT



It feeds a trunking system from whatever central position. The centre feed unit is also used to reduce the volt drop of the line.

Rating [A]	Code	Weight kg
250	**82001101**	-

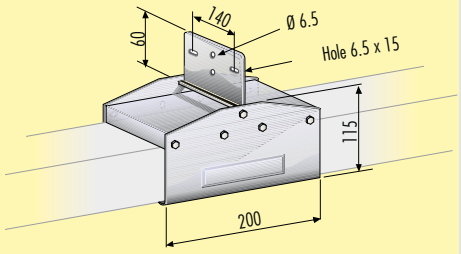
COUPLING CLAMP



One for each element.

Rating [A]	Code	Weight kg
250	**82002001**	-

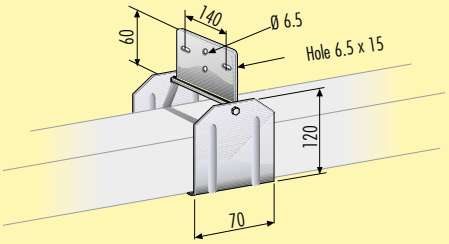
COUPLING CLAMP (ready for suspension)



t allows to hang the line at its junction points.

Rating [A]	Code	Weight kg
250	**82002002**	-

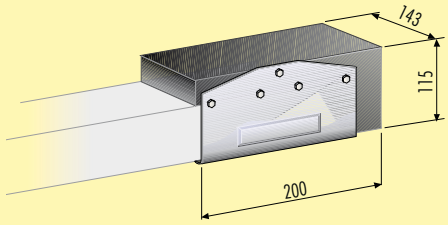
CENTRAL SUSPENSION BRACKET



It can be positioned anywhere along the line. Use one every 2 metres.

Rating [A]	Code	Weight kg
250	**82002101**	-

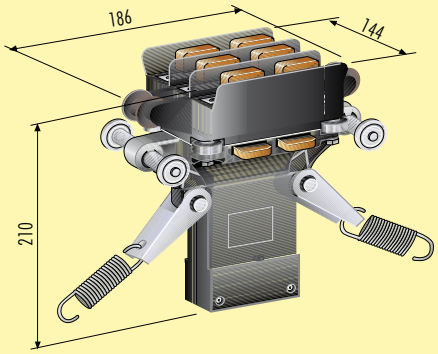
END COVER



The cover can be installed at one end or the other of a line.

Rating [A]	Code	Weight kg
250	**82001301**	-

CURRENT TAP TROLLEY 3P + T 80A

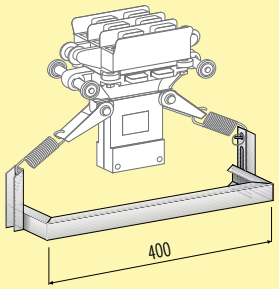


Always pull the tap-trolley with the appropriate springs (A).

A single 80A trolley is offered for the 250A (3P+T) line. Contacts are sliding, two for each phase. The earth ones are on the side of the trolley, and assure a constant and efficient earth contact. It works properly up to a sliding speed of 90m/min and bears weights up to 30 kg.

Code	Weight kg
82205001	-

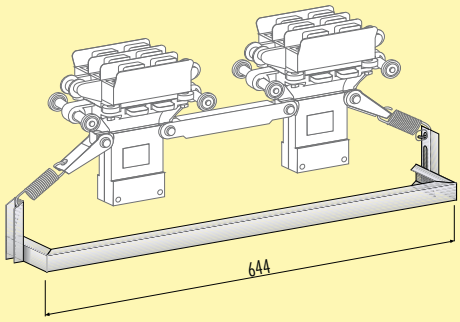
DRIVING ARMS



SIMPLE

For perfect alignment and excellent sliding a driving arm is essential. It adjusts the trolley both horizontally and vertically.

Code	Weight kg
80045201	-

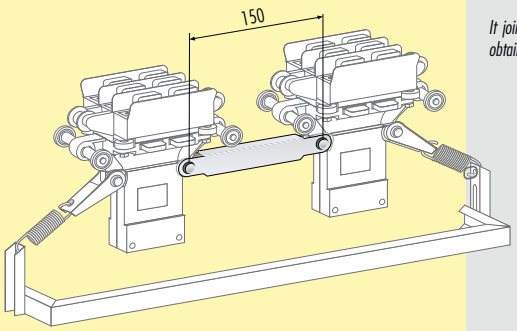


DOUBLE

For perfect alignment and excellent sliding a driving arm is essential. It adjusts the trolley both horizontally and vertically.

Code	Weight kg
80045202	-

TROLLEY JUNCTION



It joins two trolleys together, obtaining a supply of 160A.

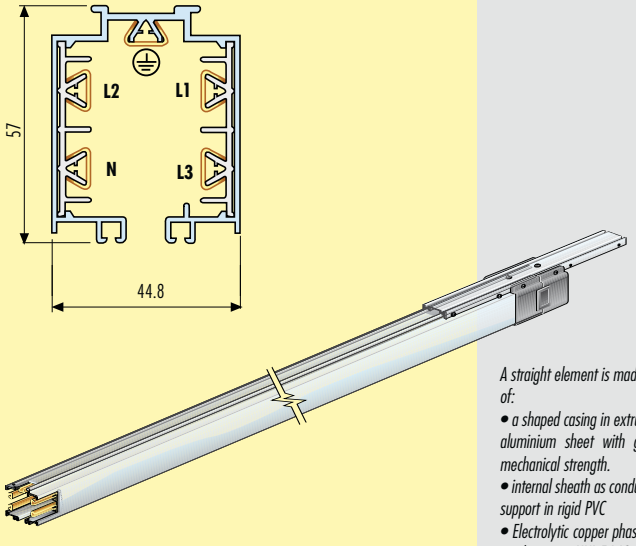
Code	Weight kg
80045203	-

TS

MTS63-IP23

Three-pole + Neutral + copper earth bar
Trolley bars:
Current rating 63 A

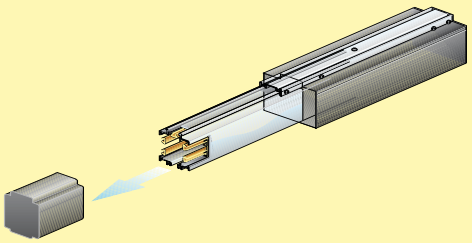
STRAIGHT LENGTHS



A straight element is made up of:
- *a shaped casing in extruded aluminium sheet with good mechanical strength.*
- *internal sheath as conductor support in rigid PVC*
- *Electrolytic copper phase conductors in UNI 5649 ETP 99.9*

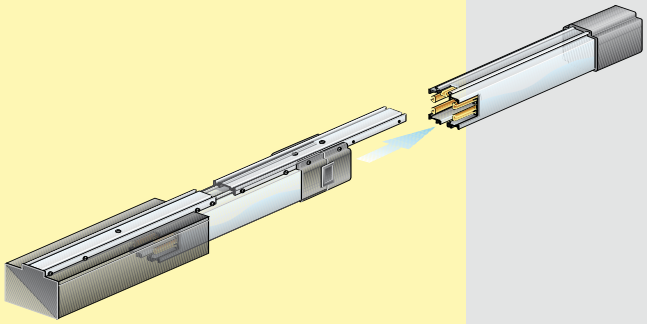
Rating [A]	Code L=3000	Code L=1500	Weight kg
63	**84500101**		5
63		**84500111**	2.5

END FEED UNIT RH + END COVER RH



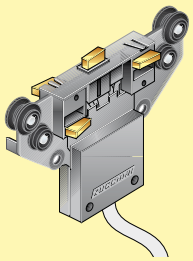
Rating [A]	Code	Weight kg
63	**84501001**	1

END FEED UNIT LH + END COVER LH



Rating [A]	Code	Weight kg
63	**84501002**	1.5

TROLLEY 25A

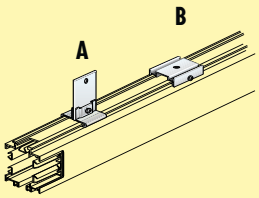


er phase conductors in UNI 5649 ETP 99.9

With its graphite contacts assuring the electrical continuity, the 25A trolley works properly up to a sliding speed of 90m/min and bears weights up to 30kg.

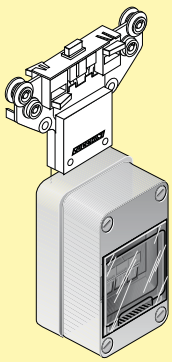
Code	Weight kg
84505001	0.32

HANGERS



Type	Code	Description	Weight kg
A	**71003001**	Simple suspension	-
B	**84502101**	Ceiling simple suspension	-

BOX WITH FUSE HOLDERS (10.3 x 38)

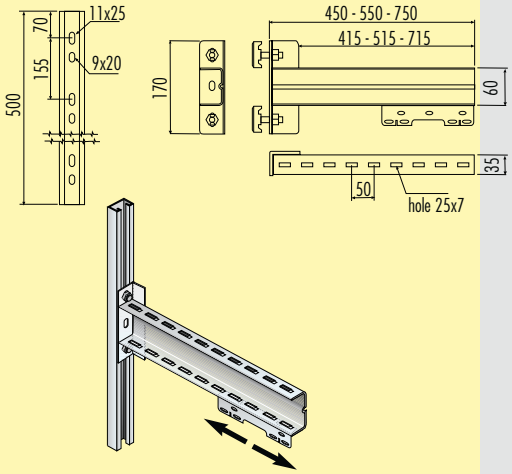


For local protection.

Code	Weight kg
84505004	-

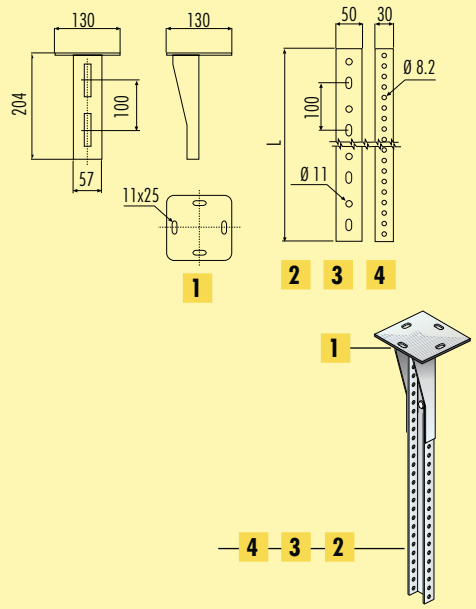
TS

WALL FIXING KIT cm 45 - cm 55 - cm 75



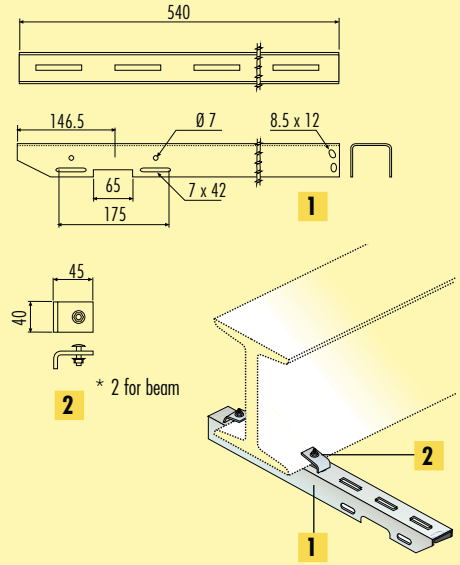
Length mm.	Code	Weight kg
450	**50632212**	2.800
550	**50632213**	3.000
750	**50632214**	3.500

CEILING FIXING KIT INCLUDING



Item	Code	Description	Weight kg
1	**50632201**	Ceiling flange	0.900
2	**50632202**	U iron L = 500 mm	0.900
3	**50632203**	U iron L = 1000 mm	1.800
4	**50632204**	U iron L = 2000 mm	3.600

I BEAM FIXING KIT INCLUDING



Item	Code	Description	Weight kg
1	**50632210**	Beam arm base	1.000
2	**50632211**	Clamp for beam	0.100

NOTES

ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

SCP

SUPER COMPACT
630 - 5000A

SCP
TECHNICAL DESCRIPTION

GENERAL FEATURES

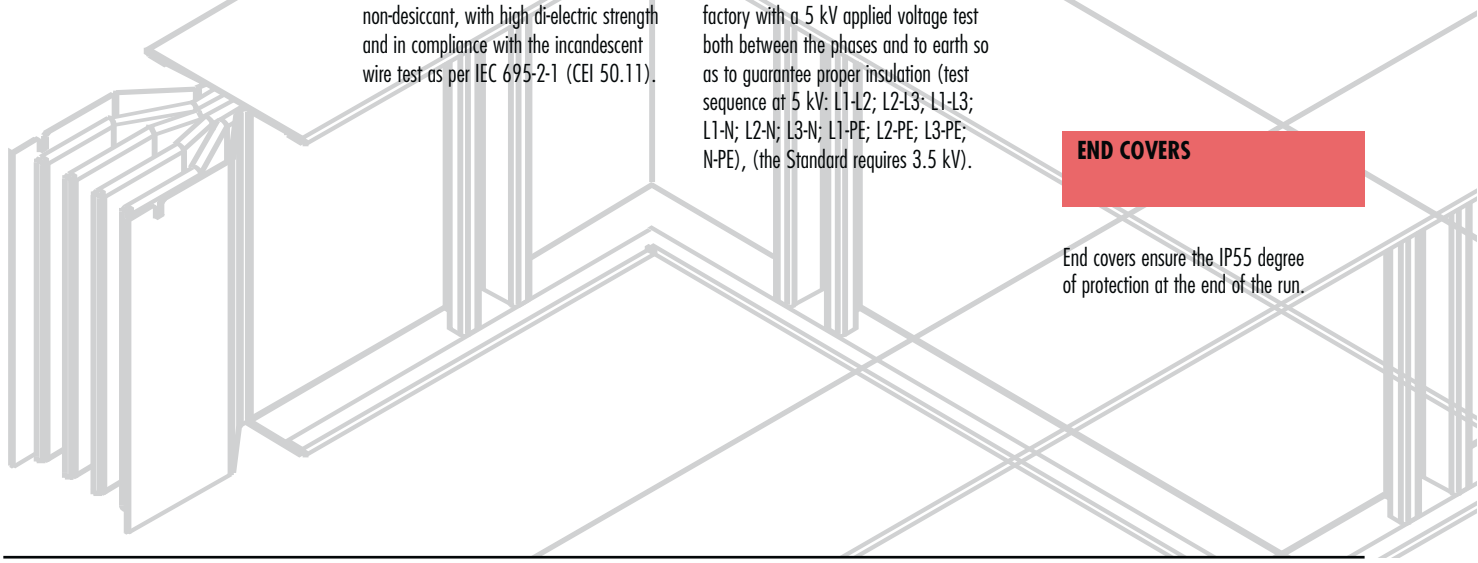
SCP (SuperCompact Painted) is part of the Zucchini range used for the distribution of power in large installations;it is also particularly suitable in riser feeder units (trunking systems) within buildings used for the service sector (banks, insurance, commercial headquarters, skyscrapers, etc.).
The SCP range is available in sizes ranging from 630A to 4000A with conductors made from an aluminium alloy and from 800A to 5000A with copper conductors.
The ultra-compact dimensions of the SCP enhance the short-circuit stress resistance features, reduce the impedance of the circuit by limiting voltage drops and enables the installation of high power electrical systems even in extremely cramped spaces.
SCP has a wide range of tap-off boxes rated from 63A to 1250A, thus allowing the supply and protection of all kinds of loads due to the availability of different protection devices such as fuses, moulded case circuit breakers and motorised switches.
Zucchini SCP can be installed quickly.
It is easy to manage and suitable for modifications and extensions, which is always necessary for installations where SCP is used.
SCP, as all Zucchini products, complies with the CEI EN 60439-1 / 2 Harmonised Standards; specifically, the rated current of the Zucchini busbar trunking systems is always rated at the average ambient temperature of 40°C (the Standard requires 35°C), thus offering the market suitably oversized products.

STRAIGHT LENGTHS

Used for distributing power and for supplying high-powered loads.
SCP straight lengths include the following components:
• casing made from four "C-shaped" ribbed, crimped and riveted section bars (130x130-480 mm, thickness 1.5 mm) made of hot-galvanised and painted steel (Senzimir).
It also serves as a protection conductor (PE) thanks to its suitable section and electrical continuity; if required, the line can be provided with a special PE conductor whose section and material can be the same as the one for the phases (SCP5) or, for systems where third harmonics are significant (e.g. Data Processing Centre), even in the version with double-section neutral conductors relative to the phase (SCP2N).
The SCP range is totally painted which offers resistance to chemical agents, improves resistance to galvanised sheet metal corrosion and gives better heat dissipation; the standard colour is RAL7035 (light grey).
• 4 conductors with the same section 3L+N with PE made from the casing (5 conductors in case of SCP5: 3L+N+PE).
The conductors are made from an aluminum alloy copper plated with a final coat of tin. Alternatively, the SCP line is available with copper conductors with purity no less than 99.9% (electrolytic copper).
The conductors are insulated and separated from each other by a double layer of polyester film (2x0.20mm), a V1 self-extinguishing insulating material, non-desiccant, with high di-electric strength and in compliance with the incandescent wire test as per IEC 695-2-1 (CEI 50.11).
The conductors are packed against each other (sandwiched) so as to minimise the distance between one phase and the other, thus achieving the advantage of minimising the mutual reactance, hence the impedance of the busbar.
• an electrical junction "monobloc" system for fast and reliable connection of the live conductors and PE.
The "monobloc" is made from a system of silver-plated copper plates which make up the live conductor series.
The conducting plates are separated from each other with thermosetting plastic insulators (temperature class "B") which maintain their electrical and mechanical features over time. The" monobloc" has a bolt (2 bolts per bar h=160; 3 per bar hž190) with a shearhead nut: use a 19mm wrench to tighten the external head until the collar which connects the two heads of the nut breaks; this will ensure the correct nominal torque to guarantee optimum electrical continuity over time. The protective conductor (PE=casing) is also connected through the monobloc. A pair of Belleville washers for each bolt ensures the correct distribution of the contact pressures as well as maintaining the pressure even when exposed to the temperature ranges, during the operation of a busbar trunking system.
In order to simplify the storage and speed up the installation of the line, straight lengths, trunking components and all components of the SCP line are already fitted with a monobloc pre-installed at the factory. Each element with its own pre-installed monobloc is checked at the factory with a 5 kV applied voltage test both between the phases and to earth so as to guarantee proper insulation (test sequence at 5 kV: L1-L2; L2-L3; L1-L3; L1-N; L2-N; L3-N; L1-PE; L2-PE; L3-PE; N-PE), (the Standard requires 3.5 kV).
The mechanical joint is completed by fitting the IP covers which are provided with anti-aging gaskets which guarantee an IP55 degree of protection.
The" monobloc" making the junction between the elements can also be used for tapping off power, by fitting a "bolted" tap-off box to it; therefore, each junction of the SCP line is already set up for a tap-off in a fixed position.
The junction monobloc is also equipped with a device (positioning pin) which ensures the correct polarity of the phase-neutral sequence, thus avoiding installation errors.
• straight lengths are available with tap-off outlets to accept plug-in type tap-off boxes.
The outlets are located on both sides of the busbar with a spacing distance of 1 m (3+3 outlets every 3m).
The outlets are closed by a plug outlet cover which guarantees an IP55 degree of protection; when the outlet is open, the plug outlet cover has an IP2x degree of protection.
All components and accessories of the SCP line are available as the IP55 version as standard the same degree of protection as the line.
The whole busbar is "fire retardant" in compliance with standard EN 60332-3.

END COVERS

End covers ensure the IP55 degree of protection at the end of the run.



END FEED UNITS

These enable the SCP range to be supplied by cable or directly connected to an electric distribution panel; the assembly of the line is carried out with a quick monobloc connection as with the straight lengths. The end feed units are provided with LV connections for the connection of cables equipped with compatible terminals with a 15x20 mm slotted hole.
The cable entry is generally located at the base of the end feed unit, in which there is a removable plate; it is also possible to insert the cables through the side plates.
The SCP line has centre feed units and end feed units with a switch ; the latter allows disconnection of the whole line to carry out maintenance operations or modifications of the installation.

HANGERS

In order to fix the run to the structure of the building, directly or with a wall, ceiling or beam bracket, it is necessary to use a bracket which serves as a busbar collar.
The bracket has holes for use i with the support brackets available in the Zucchini catalogue.
Vertical installation brackets (rising mains), type-approved brackets for ships and type-approved brackets for seismic environments are available for the SCP line.

TRUNKING COMPONENTS AND ADDITIONAL ELEMENTS

Depending on the different installation requirements, Zucchini is able to offer different technical solutions:
a) 90° angles: available for changing routes both horizontally and vertically. The joint is of the quick type as with the straight lengths.
The protection degree is IP55.
b) T, X and double angle Z elements.
The degree of protection is IP55.
c) Straight lengths with fire barrier (external) S120.
These elements are used when REI120 fire-resistant walls need to be passed through. The elements provided with a fire barrier have been lab-tested (in accordance with DIN 4102-9 and EN 1366-3) in order to confirm that, if correctly installed, they will maintain the essential fire resistant features of the wall. S120 means that the barrier is certified for 120' (minutes).
d) Straight lengths with a thermal expansion device; these elements should be inserted in long runs to compensate for the thermal expansions due to the temperature ranges of the conductors during their operation.
The expansion elements must be inserted every 35-40 m of line.
e) Straight lengths with phase transpositions or with a "neutral rotation"; these elements are suitable for changing the position of the phase sequence and for reducing and balancing the mutual phase reactances and for balancing the impedances (currents) when lines exceeding 100-150 m are installed.
f) Additional protective cowl; the SCP busbar trunking system has a basic IP55 degree of protection.
For outdoor applications, it is necessary to protect the busbar with a cowl to protect the busbar from bad weather and direct sunlight.
g) protective bellows and flexible braids for transformer connection (oil or resin), generators and, in general, equipment that vibrates during its normal operation.
These devices are used for mechanically isolating the vibrating equipment from the rest of the busbar trunking system.

TAP-OFF BOXES

These are used for connecting and supplying three-phase loads from 63A up to 1250A: they can be divided into two main categories:
1) Plug-in tap-off boxes (from 63A up to 630A): they can be operated when energized but not when under load conditions; the boxes are equipped with an isolator integral with the cover.
When the tap-off box is installed on the busbar, the opening of the cover electrically disconnects its internal parts, in other words no accessible metallic part is live when the cover is open. Tap-off boxes have an interlock with a cover and can be inserted and removed from the outlet only when the cover is in the"open" position, that is in the 'isolated' position.
The cover of the box can be locked in the open-isolated position to allow safe maintenance of the loads connected to it.
All Zucchini plug-in type boxes have a PE contact (protective conductor), which is the first to make an electrical connection when the box is plugged into the outlet, and the last to disconnect when the tap-off is unplugged; all insulating plastic components comply with the incandescent wire test (EN 60695-2-1) and have a V1 self-extinguishing degree (UL94); the standard degree of protection is IP55 without using additional IP protection kits;

Plug-in type boxes are available in the following versions: with fuseholder, with switchfuse or with moulded case circuit breakers.
If the boxes are equipped with a switch, the rotary handle extension is carried out with a handle on the cover of the box which makes it possible to open the switch before removing the box from the busbar.
2) Boxes bolted on the junction (from 125A to 1250A): these high rated current boxes are rigidly connected to the busbar with a special "monobloc" connection system similar to that of the straight lengths but this also allows for power to be tapped-off from the busbar.
The boxes can only be installed and removed when the system is de-energized (isolated busbar).
When the monobloc system is used, installation will be extremely easy, quick and reliable.
These boxes are available in the switchfuse and fuseholder version and with moulded case circuit breakers

SCP

SUPER COMPACT

**BUSBAR TRUNKING SYSTEM
FOR HIGH POWER**

LINE DETAILS

Horizontal elbow

Vertical elbow

Switchboard - Trasformer feed unit

Joint

Hospitals

Switchboard-transformer connections

Skyscrapers

Large industries

SUPER COMPACT

SCP

Catalogues on request

Single and double monobloc

Busbar trunking systems **SC630-5000A**

ZUCCHINI follows a policy of continuous development, and therefore reserves the right to supply products which may differ in detail from those shown in this publication.

For further information please contact our Sales dept.

TECHNICAL DATA INDEX

LB

		252	254	256	402	404	406
				side side			side side
Live conductors	n°	2	4	4 • 2	2	4	4 • 2
Casing overal dimension	A x B [mm]	26 x 41	26 x 41	26 x 41	26 x 41	26 x 41	26 x 41
Rated current	I_n [A]	**25**	**25**	**25**	**40**	**40**	**40**
Cross-section of conductors (3P+N)	S [mm²]	3.14	3.14	3.14	6.15	6.15	6.15
Cross-section of protective conductor eq. Cu	S_{PE} [mm²]	8.72	8.72	8.72	8.72	8.72	8.72
Operational voltage	U_e [V]	400	400	400	400	400	400
Insulation voltage	U_i [V]	500	500	500	500	500	500
Rated frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60
Rated short-time current (0.1 s)	I_{CW} [kA]rms	2.2	2.2	2.2	2.7	2.7	2.7
Peak current	I_{pk} [kA]	10	10	10	10	10	10
Maximum thermal limit	I^2t [$A^2s \times 10^6$]	0.48	0.48	0.48	0.73	0.73	0.73
Phase resistance	R_{20} [mΩ/m]	5.803	5.803	5.803	2.963	2.963	2.963
Phase reactance (50Hz)	X [mΩ/m]	1.144	1.279	1.279 • 1.144	0.792	0.770	0.770 • 0.792
Phase impedance	Z [mΩ/m]	5.914	5.942	5.942 • 5.914	3.067	3.061	3.061 • 3.067
Resistance of the protective bar	R_{PE} [mΩ/m]	1.45	1.45	1.45	1.45	1.45	1.45
Reactance of the protective bar (50Hz)	X_{PE} [mΩ/m]	1.10	1.10	1.10	1.10	1.10	1.10
Resistance of the fault loop	R_0 [mΩ/m]	7.25	7.25	7.25	4.41	4.41	4.41
Reactance of the fault loop (50Hz)	X_0 [mΩ/m]	2.24	2.38	2.38 • 2.24	1.89	1.87	1.87 • 1.89
Impedance of the fault loop	Z_0 [mΩ/m]	7.59	7.63	7.639 • 7.59	4.80	4.79	4.79 • 4.80
$\Delta V_{1F} = \frac{1}{2}(2 R_{20} \cos\varphi + 2 X \operatorname{sen}\varphi)$	ΔV [V/m/A]10^{-3} cosφ = 0.70	4.88	4.31	4.31 • 4.88	2.64	2.27	2.27 • 2.64
	ΔV [V/m/A]10^{-3} cosφ = 0.75	5.11	4.50	4.50 • 5.11	2.75	2.37	2.37 • 2.75
	ΔV [V/m/A]10^{-3} cosφ = 0.80	5.33	4.68	4.68 • 5.33	2.85	2.45	2.45 • 2.85
Voltage drop with distribuited load (k)	ΔV [V/m/A]10^{-3} cosφ = 0.85	5.53	4.85	4.85 • 5.53	2.94	2.53	2.53 • 2.94
	ΔV [V/m/A]10^{-3} cosφ = 0.90	5.72	5.01	5.01 • 5.72	3.01	2.60	2.60 • 3.01
$\Delta V_{3F} = \frac{\sqrt{3}}{2}(R_{20} \cos\varphi + X \operatorname{sen}\varphi)$	ΔV [V/m/A]10^{-3} cosφ = 0.95	5.87	5.12	5.12 • 5.87	3.06	2.65	2.65 • 3.06
	ΔV [V/m/A]10^{-3} cosφ = 1.00	5.80	5.03	5.03 • 5.80	2.96	2.57	2.57 • 2.96
Straight length weight	p [kg/m]	0.95	1.0	1.10	1.0	1.1	1.20
Fire load	[kWh/m]	0.82	0.82	0.82	0.82	0.82	0.82
Protection degree	IP	55	55	55	55	55	55
Losses for the Joule effect at full load	P [W/m]	7.3	10.9	10.9 • 7.3	9.5	14.2	14.2 9.5
Ambient temperature min./MAX.	t [°C]	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50	5/+50

SHORT CIRCUIT PROTECTION FOR ZUCCHINI'S PRODUCT RANGES (In ≤ 100A)

Zucchini's busbar system with a nominal current less or equal to 100A (LB-HL-SL-MS 63 and 100) are correctly protected against short circuit effects through a MCB (MCB Modular Circuit Breaker) with a nominal current less or equal to the one of the busbar.
This protection is assured up to MCB short circuit withstand.

The busbar trunking systems LB-HL-SL-MS are not flame propogating in compliance with IEC 332-3: 1992.

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Product suited to these climates:
Constant humid climate (DIN IEC 68 et 2- 3)
Cyclical humid climate (DIN IEC 68 et 2- 30)

TEMPERATURE RATING SCHEDULE

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

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

SCHEME OF MAXIMUM LOAD PERMITTED. (with the busbar installed on edge)

For evenly distributed loads the maximum weight (kg) that can be supported is given in the tables below:
For point loads multiply the values in the below tables by 0.5.

		fixing centres (span) m.							
maximum deflection = 1/350 x span	m	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
	kg	17.2	15.8	14.6	13.4	12.5	11.6	11	10
maximum deflection = 1/500 x span	m	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
	kg	15.4	14	13	12	11.2	10.4	9.6	9

HL

HLs
SINGLE

HLd
DOUBLE

		252	402	254	404	2522	4022	2542 side side	4042 side side	2544	4044	2x4
Live conductors	n°	2	2	4	4	2+2	2+2	4 • 2	4 • 2	4+4	4+4	2+2+2+2
Casing overal dimension	A x B [mm]	26x62	26x62	26x62	26x62	40.4x70	40.4x70	40.4x70	40.4x70	40.4x70	40.4x70	40.4x70
Rated current	I_n [A]	**25**	**40**	**25**	**40**	**25**	**40**	**25**	**40**	**25**	**40**	**25**
Cross-section of conductors (3P+N)	S [mm²]	3.14	6.15	3.14	6.15	3.14	6.15	3.14	6.15	3.14	6.15	3.14
Cross-section of protective conductor eq. Cu	S_{PE} [mm²]	17	17	17	17	20	20	20	20	20	20	20
Operational voltage	U_e [V]	400	400	400	400	400	400	400	400	400	400	400
Insulation voltage	U_i [V]	500	500	500	500	500	500	500	500	500	500	500
Rated 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
Rated short-time current (0.1 s)	I_{CW} [kA]rms	2.5	3.2	2.5	3.2	2.5	3.2	2.5	3.2	2.5	3.2	2.5
Peak current	I_{pk} [kA]	10	10	10	10	10	10	10	10	10	10	10
Maximum thermal limit	I^2t [$A^2s \times 10^6$]	0.64	1.00	0.64	1.00	0.64	1.00	0.64	1.00 0.64	1.00	0.64	
Phase resistance	R_{20} [mΩ/m]	5.73	2.93	5.73	2.93	5.73	2.93	5.73 • 5.73	2.93 • 2.93	5.73	2.93	5.73
Phase reactance (50Hz)	X [mΩ/m]	1.40	1.58	1.27	0.77	1.40	1.58	1.27 • 1.40	0.77 • 1.58	1.27	0.77	1.27
Phase impedance	Z [mΩ/m]	5.90	3.33	5.87	3.03	5.90	3.33	5.87 • 5.90	3.03 • 3.33	5.87	3.03	5.87
Resistance of the protective bar	R_{PE} [mΩ/m]	1.06	1.06	1.06	1.06	0.90	0.90	0.90 • 0.90	0.90 • 0.90	0.90	0.90	0.90
Reactance of the protective bar (50Hz)	X_{PE} [mΩ/m]	1.10	1.10	1.10	1.10	1.00	1.00	1.00 • 1.00	1.00 • 1.00	1.00	1.00	1.00
Resistance of the fault loop	R_0 [mΩ/m]	6.79	3.99	6.79	3.99	6.63	3.83	6.63 • 6.63	3.83 • 3.83	6.63	3.83	6.63
Reactance of the fault loop (50Hz)	X_0 [mΩ/m]	2.50	2.68	2.37	1.87	2.40	2.58	2.27 • 2.40	1.77 • 2.58	2.27	1.77	2.27
Impedance of the fault loop	Z_0 [mΩ/m]	7.24	4.80	7.19	4.40	7.05	4.62	7.01 • 7.05	4.22 • 4.62	7.01	4.22	7.01
ΔV [V/m/A] 10^{-3} cosφ =	0.70	5.01	3.18	4.26	2.25	5.01	3.18	4.26 • 5.01	2.25 • 3.18	4.26	2.25	4.92
$\Delta V_{1F} = \frac{1}{2}(2 R_{20} \cos\varphi + 2 X \text{ sen } \varphi)$	= 0.75	5.23	3.24	4.45	2.34	5.23	3.24	4.45 • 5.23	2.34 • 3.24	4.45	2.34	5.14
	= 0.80	5.43	3.29	4.63	2.43	5.43	3.29	4.63 • 5.43	2.43 • 3.29	4.63	2.43	5.35
Voltage drop with distribuited load (k)	= 0.85	5.61	3.32	4.80	2.51	5.61	3.32	4.80 • 5.61	2.51 • 3.32	4.80	2.51	5.54
	= 0.90	5.77	3.32	4.95	2.57	5.77	3.32	4.95 • 5.77	2.57 • 3.32	4.95	2.57	5.71
$\Delta V_{3F} = \frac{\sqrt{3}}{2}(R_{20} \cos\varphi + X \text{ sen } \varphi)$	= 0.95	5.88	3.27	5.06	2.62	5.88	3.27	5.06 • 5.88	2.62 • 3.27	5.06	2.62	5.84
	= 1.00	5.73	2.93	4.96	2.53	5.73	2.93	4.96 • 5.73	2.53 • 2.93	4.96	2.53	5.73
Straight length weight	p [kg/m]	1.5	1.6	1.6	1.7	2.8	2.9	2.9	3.1	2.9	3.2	2.9
Fire load	[kWh/m]	0.82	0.82	0.82	0.82	1.64	1.64	1.64	1.64 1.64	1.64	1.64	
Protection degree	IP	55	55	55	55	55	55	55	55	55	55	55
Losses for the Joule effect at full load	P [W/m]	7.2	9.4	10.7	14.0	7.2	9.4	10.7 7.2	14.0 9.4	10.7	14.0	7.2
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

SHORT CIRCUIT PROTECTION FOR ZUCCHINI'S PRODUCT RANGES (In≤100A)

Zucchini's busbar system with a nominal current less or equal to 100A (LB-HL-SL-MS 63 and 100) are correctly protected against short circuit effects through a MCB (MCB Modular Circuit Breaker) with a nominal current less or equal to the one of the busbar.
This protection is assured up to MCB short circuit withstand.

The busbar trunking systems LB-HL-SL-MS are not flame propogating in compliance with IEC 332-3: 1992.

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Product suited to these climates:
Constant humid climate (DIN IEC 68 et 2- 3)
Cyclical humid climate (DIN IEC 68 et 2- 30)

TEMPERATURE RATING SCHEDULE

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

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

SCHEME OF MAXIMUM LOAD PERMITTED. (with the busbar installed on edge)

For evenly distributed loads the maximum weight (kg) that can be supported is given in the tables below:
For point loads multiply the values in the below tables by 0.6.

		fixing centres (span) m.							
maximum deflection = 1/250 x span	m	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
	kg	82.3	71.1	52.2	40.0	31.6	25.6	21.1	17.8


(busbar installed edgewise)

SL

			40	63
Live conductors		n°	4	4
Casing overal dimension		A x B [mm]	26 x 62	26 x 62
Rated current		I_n [A]	**40**	**63**
Cross-section of conductors (3P+N)		S [mm²]	9.5	12.3
Cross-section of protective conductor eq. Cu		S_{PE} [mm²]	17	17
Operational voltage		U_e [V]	400	400
Insulation voltage		U_i [V]	750	750
Rated frequency		f [Hz]	50/60	50/60
Rated short-time current (0.1 s)		I_{CW} [kA]rms	2.70	3.10
Peak current		I_{pk} [kA]	10	10
Maximum thermal limit		I^2t [$A^2s \times 10^6$]	7.29	9.6
Phase resistance		R_{20} [mΩ/m]	1.811	1.373
Phase reactance (50Hz)		X [mΩ/m]	0.290	0.637
Phase impedance		Z [mΩ/m]	1.834	1.514
Resistance of the protective bar		R_{PE} [mΩ/m]	0.870	0.870
Reactance of the protective bar (50Hz)		X_{PE} [mΩ/m]	0.090	0.087
Resistance of the fault loop		R_0 [mΩ/m]	2.68	2.24
Reactance of the fault loop (50Hz)		X_0 [mΩ/m]	0.380	0.724
Impedance of the fault loop		Z_0 [mΩ/m]	2.71	2.36
$\Delta V_{1F} = \frac{1}{2}(2 R_{20} \cos\varphi + 2 X \text{ sen } \varphi)$		ΔV [V/m/A]10^{-3} cosφ = 0.70	1.28	1.23
		ΔV [V/m/A]10^{-3} cosφ = 0.75	1.34	1.26
		ΔV [V/m/A]10^{-3} cosφ = 0.80	1.41	1.28
Voltage drop with distribuited load (k)		ΔV [V/m/A]10^{-3} cosφ = 0.85	1.47	1.30
		ΔV [V/m/A]10^{-3} cosφ = 0.90	1.52	1.31
$\Delta V_{3F} = \frac{\sqrt{3}}{2}(R_{20} \cos\varphi + X \text{ sen } \varphi)$		ΔV [V/m/A]10^{-3} cosφ = 0.95	1.57	1.30
		ΔV [V/m/A]10^{-3} cosφ = 1.00	1.57	1.19
Straight length weight		p [kg/m]	2.2	2.3
Fire load		[kWh/m]	0.80	0.80
Protection degree		IP	40/55	40/55
Losses for the Joule effect at full load		P [W/m]	8.7	16.3
Ambient temperature min./MAX.		t [°C]	-5/+50	-5/+50

SHORT CIRCUIT PROTECTION FOR ZUCCHINI'S PRODUCT RANGES (In ≤ 100A)

Zucchini's busbar system with a nominal current less or equal to 100A (LB-HL-SL-MS 63 and 100) are correctly protected against short circuit effects through a MCB (MCB Modular Circuit Breaker) with a nominal current less or equal to the one of the busbar.
This protection is assured up to MCB short circuit withstand.

The busbar trunking systems LB-HL-SL-MS are not flame propogating in compliance with IEC 332-3: 1992.

TEMPERATURE RATING SCHEDULE

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

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

Coordination table with Legrand DPX on page 135

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Product suited to these climates:
Constant humid climate (DIN IEC 68 et 2- 3)
Cyclical humid climate (DIN IEC 68 et 2- 30)

MS

			63	100	160
Live conductors		n°	4	4	4
Casing overal dimension		A x B [mm]	39 x 97	39 x 97	39 x 97
Rated current		I_n [A]	**63**	**100**	**160**
Cross-section of conductors (3P+N)		S [mm²]	26	39	39
Cross-section of protective conductor eq. Cu		S_{PE} [mm²]	21	21	21
Operational voltage		U_e [V]	400	400	400
Insulation voltage		U_i [V]	750	750	750
Rated frequency		f [Hz]	50/60	50/60	50/60
Rated short-time current (0.1 s)		I_{CW} [kA]rms	2.30	4.50	5.50
Peak current		I_{pk} [kA]	10	10	10
Maximum thermal limit		I^2t [$A^2s \times 10^6$]	5.29	20.25	30.25
Phase resistance		R_{20} [mΩ/m]	1.250	0.837	0.478
Phase reactance (50Hz)		X [mΩ/m]	0.366	0.247	0.247
Phase impedance		Z [mΩ/m]	1.302	0.873	0.538
Resistance of the protective bar		R_{PE} [mΩ/m]	0.857	0.857	0.857
Reactance of the protective bar (50Hz)		X_{PE} [mΩ/m]	0.090	0.102	0.102
Resistance of the fault loop		R_0 [mΩ/m]	1.85	1.69	1.08
Reactance of the fault loop (50Hz)		X_0 [mΩ/m]	0.456	0.349	0.349
Impedance of the fault loop		Z_0 [mΩ/m]	1.91	1.73	1.13
$\Delta V_{1F} = \frac{1}{2}(2 R_{20} \cos\varphi + 2 X \operatorname{sen}\varphi)$		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 0.70	0.98	0.66	0.44
		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 0.75	1.02	0.69	0.45
		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 0.80	1.06	0.71	0.46
Voltage drop with distribuited load (k)		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 0.85	1.09	0.73	0.46
		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 0.90	1.11	0.75	0.47
$\Delta V_{3F} = \frac{\sqrt{3}}{2}(R_{20} \cos\varphi + X \operatorname{sen}\varphi)$		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 0.95	1.13	0.76	0.46
		$\Delta V\ [V/m/A]10^{-3} \cos\varphi =$ 1.00	1.08	0.72	0.41
Straight length weight		p [kg/m]	2.0	2.5	2.8
Fire load		[kWh/m]	1.64	1.64	1.64
Protection degree		IP	40/55	40/55	40/55
Losses for the Joule effect at full load		P [W/m]	14.9	25.1	36.7
Ambient temperature min./MAX.		t [°C]	-5/+50	-5/+50	-5/+50

SHORT CIRCUIT PROTECTION FOR ZUCCHINI'S PRODUCT RANGES (In≤100A)

Zucchini's busbar system with a nominal current less or equal to 100A (LB-HL-SL-MS 63 and 100) are correctly protected against short circuit effects through a MCB (MCB Modular Circuit Breaker) with a nominal current less or equal to the one of the busbar.
This protection is assured up to MCB short circuit withstand.

The busbar trunking systems LB-HL-SL-MS are not flame propogating in compliance with IEC 332-3: 1992.

TEMPERATURE RATING SCHEDULE

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

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

Coordination table with Legrand DPX on page 135

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Product suited to these climates:
Constant humid climate (DIN IEC 68 et 2- 3)
Cyclical humid climate (DIN IEC 68 et 2- 30)

MR ALUMINIUM

MR [3L+N+PE]

Rated current	In [A]	**160**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**
Operational voltage	Ue [V]	1000	1000	1000	1000	1000	1000	1000	690
Insulation voltage	Ui [V]	1000	1000	1000	1000	1000	1000	1000	690
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated shortcircuit current withstand for 3-phase fault (1 s)	I_{CW} [kA]$_{rms}$	15*	25*	25*	25	30	36	36	30
Specific Energy withstand for 3-phase fault	I^2t [M A^2s]	23	63	63	625	900	1296	1296	900
Peak current	I_{pk} [kA]	30	53	53	53	63	76	76	63
Rated short-time current for single-phase fault Ph-N(1 s)	I_{CW} [kA]$_{rms}$	9*	15*	15*	15	18	22	22	18
Peak current for single-phase fault Ph-N	I_{pk} [kA]	15	30	30	30	36	45	4a5	36
Rated short-time current single-phase fault Ph-PE (1 s)	I_{CW} [kA]$_{rms}$	9*	15*	15*	15	18	22	22	18
Peak current single-phase fault Ph-PE	I_{pk} [kA]	15	30	30	30	36	45	45	36
Phase resistance at 20 °C	R_{20} [mΩ/m]	0.492	0.328	0.197	0.120	0.077	0.060	0.052	0.037
Phase resistance at thermal conditions (In; 40°C)	R_t [mΩ/m]	0.665	0.443	0.266	0.163	0.104	0.081	0.070	0.073
Phase reactance (50 Hz)	X [mΩ/m]	0.260	0.202	0.186	0.130	0.110	0.097	0.096	0.076
Neutral resistance at 20 °C	Rn_{20} [mΩ/m]	0.492	0.328	0.197	0.120	0.077	0.060	0.052	0.037
Neutral reactance (50 Hz)	Xn [mΩ/m]	0.260	0.202	0.186	0.130	0.110	0.097	0.096	0.076
Resistance of the protective bar	R_{PE} [mΩ/m]	0.341	0.341	0.341	0.283	0.283	0.283	0.283	0.283
Reactance of the protective bar (50 Hz)	X_{PE} [mΩ/m]	0.220	0.220	0.220	0.180	0.180	0.180	0.180	0.180
Resistance of the phase-Pe fault loop	$R_{Ph\text{-}Pe\ fault\ loop}$ [mΩ/m]	1.006	0.784	0.607	0.445	0.387	0.364	0.353	0.336
Reactance of the phase-Pe fault loop (50 Hz)	$X_{RPh\text{-}Pe\ fault\ loop}$ [mΩ/m]	0.480	0.414	0.396	0.333	0.333	0.283	0.275	0.273
Resistance of the phase-neutral fault loop	$R_{Ph\text{-}N\ fault\ loop}$ [mΩ/m]	1.157	0.771	0.463	0.283	0.181	0.141	0.121	0.093
Reactance of the phase-neutral fault loop (50 Hz)	$X_{RPh\text{-}N\ fault\ loop}$ [mΩ/m]	0.480	0.422	0.406	0.310	0.290	0.277	0.276	0.186
Voltage "k" drop coeff. with distribuited load (k)	Δv [V/m/A]10^{-3} cosφ = 0.70	0.564	0.394	0.276	0.179	0.131	0.109	0.102	90
	Δv [V/m/A]10^{-3} cosφ = 0.75	0.581	0.404	0.279	0.180	0.130	0.108	0.100	88
	Δv [V/m/A]10^{-3} cosφ = 0.80	0.596	0.412	0.281	0.180	0.129	0.107	0.098	85
	Δv [V/m/A]10^{-3} cosφ = 0.85	0.608	0.418	0.281	0.179	0.127	0.104	0.095	82
	Δv [V/m/A]10^{-3} cosφ = 0.90	0.616	0.422	0.277	0.176	0.122	0.100	0.091	77
	Δv [V/m/A]10^{-3} cosφ = 0.95	0.617	0.419	0.269	0.169	0.115	0.093	0.083	69
	Δv [V/m/A]10^{-3} cosφ = 1.00	0.576	0.384	0.230	0.141	0.090	0.070	0.060	46
Losses for the Joule effect at nominal current	P [W/m]	51	83	79	78	78	97	134	160
Fire load	[kWh/m]	1.3	1.3	1.3	1.8	1.8	1.8	1.8	1.8
Weight	p [kg/m]	7.4	7.7	8.4	10.7	12.3	13.8	14.7	15.9
Overall dimensions of the busbar	LxH [mm]	76x195	76x195	76x195	136x195	136x195	136x195	136x195	136x195
Degree of protection(CEI EN60529)	IP	52-55	52-55	52-55	52-55	52-55	52-55	52-55	55
IK code CEI EN60068-2-62	IK	10	10	10	10	10	10	10	10

* Values for 0.1 s

Coordination table with Legrand DPX on page 135

TEMPERATURE RATING SCHEDULE

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

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

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Product suited to these climates:
Constant humid climate (DIN IEC 68 et 2- 3)
Cyclical humid climate (DIN IEC 68 et 2- 30)

MR COPPER

MR [3L+N+PE]

Rated current	In [A]	**250**	**315**	**400**	**630**	**800**	**1000**
Operational voltage	Ue [V]	1000	1000	1000	1000	1000	1000
Insulation voltage	Ui [V]	1000	1000	1000	1000	1000	1000
Frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60	50/60
Rated shortcircuit current withstand for 3-phase fault (1 s)	I_{CW} $[kA]_{rms}$	25*	25*	30*	36	36	36
Specific Energy withstand for 3-phase fault	I^2t [M A^2s]	63	63	90	1296	1296	1296
Peak current	I_{pk} [kA]	53	53	63	76	76	76
Rated short-time current for single-phase fault Ph-N(1 s)	I_{CW} $[kA]_{rms}$	15*	15*	18*	22	22	22
Peak current for single-phase fault Ph-N	I_{pk} [kA]	30	30	36	45	45	45
Rated short-time current single-phase fault Ph-PE (1 s)	I_{CW} $[kA]_{rms}$	15*	15*	18*	22	22	22
Peak current single-phase fault Ph-PE	I_{pk} [kA]	30	30	36	45	45	45
Phase resistance at 20 °C	R_{20} [mΩ/m]	0.237	0.180	0.096	0.061	0.040	0.032
Phase resistance at thermal conditions (In; 40°C)	R_t [mΩ/m]	0.320	0.243	0.129	0.082	0.053	0.043
Phase reactance (50 Hz)	X [mΩ/m]	0.205	0.188	0.129	0.122	0.122	0.120
Neutral resistance at 20 °C	Rn_{20} [mΩ/m]	0.237	0.180	0.096	0.061	0.040	0.032
Neutral reactance (50 Hz)	Xn [mΩ/m]	0.205	0.188	0.129	0.122	0.122	0.120
Resistance of the protective bar	R_{PE} [mΩ/m]	0.336	0.336	0.336	0.279	0.279	0.279
Reactance of the protective bar (50 Hz)	X_{PE} [mΩ/m]	0.220	0.220	0.220	0.180	0.180	0.180
Resistance of the phase-Pe fault loop	$R_{Ph\text{-}Pe\ fault\ loop}$ [mΩ/m]	0.657	0.579	0.466	0.361	0.332	0.322
Reactance of the phase-Pe fault loop (50 Hz)	$X_{RPh\text{-}Pe\ fault\ loop}$ [mΩ/m]	0.425	0.408	0.349	0.302	0.302	0.300
Resistance of the phase-neutral fault loop	$R_{Ph\text{-}N\ fault\ loop}$ [mΩ/m]	0.558	0.423	0.225	0.143	0.093	0.074
Reactance of the phase-neutral fault loop (50 Hz)	$X_{RPh\text{-}N\ fault\ loop}$ [mΩ/m]	0.425	0.408	0.349	0.302	0.302	0.300
	Δv [V/m/A]10^{-3} $\cos\varphi$ = 0.70	0.321	0.263	0.158	0.125	0.108	0.100
	Δv [V/m/A]10^{-3} $\cos\varphi$ = 0.75	0.326	0.265	0.158	0.123	0.105	0.096
Voltage "k" drop coeff. with	Δv [V/m/A]10^{-3} $\cos\varphi$ = 0.80	0.329	0.266	0.157	0.120	0.100	0.092
distribuited load (k)	Δv [V/m/A]10^{-3} $\cos\varphi$ = 0.85	0.329	0.264	0.154	0.116	0.095	0.086
	Δv [V/m/A]10^{-3} $\cos\varphi$ = 0.90	0.327	0.260	0.149	0.110	0.088	0.079
	Δv [V/m/A]10^{-3} $\cos\varphi$ = 0.95	0.319	0.251	0.141	0.101	0.077	0.068
	Δv [V/m/A]10^{-3} $\cos\varphi$ = 1.00	0.277	0.210	0.112	0.071	0.046	0.037
Losses for the Joule effect at nominal current	P [W/m]	60	72	62	98	103	128
Fire load	[kWh/m]	1.3	1.3	1.3	1.8	1.8	1.8
Weight	p [kg/m]	9.3	10.2	13.3	18.2	23.9	27.9
Overall dimensions of the busbar	LxH [mm]	76x195	76x195	76x195	136x195	136x195	136x195
Degree of protection(CEI EN60529)	IP	52-55	52-55	52-55	52-55	52-55	52-55
IK code CEI EN60068-2-62	IK	10	10	10	10	10	10

* Values for 0.1 s

Coordination table with Legrand DPX on page 135

TEMPERATURE RATING SCHEDULE

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

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

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Prodotto Idoneo ai climi:
Caldo umido costante (DIN IEC 68 et 2- 3)
Caldo umido ciclico (DIN IEC 68 et 2- 30)

TS

		MTS 63A	TS 5 70A	TS 5 110A	TS 5 150A	TS 250A
Live conductors	n°	3P+N+T	3P+N+T	3P+N+T	3P+N+T	3P+T
Casing overal dimension	A x B [mm]	44.8x57	98x65.5	98x65.5	98x65.5	144x89
Rated current	I_n [A]	63	70	110	150	250
Cross-section of conductors (3P+N)	S [mm²]	12	19	24	43	85
Cross-section of protective conductor eq. Cu	S_{PE} [mm²]	12	19	24	24	120
Operational voltage	U_e [V]	400	600	600	600	600
Insulation voltage	U_i [V]	750	750	750	750	750
Rated frequency	f [Hz]	50/60	50/60	50/60	50/60	50/60
Rated short-time current	I_{CW} [kA]rms	5	9	9	9	11
Peak current	I_{pk} [kA]	7.5	15.3	15.3	15.3	18.7
Maximum thermal limit	I^2t [$A^2s \times 10^6$]	25	81	81	81	121
Phase resistance	R_{20} [mΩ/m]	1.500	0.947	0.785	0.515	0.255
Phase reactance (50Hz)	X [mΩ/m]	1.400	0.059	0.063	0.092	0.161
Phase impedance	Z [mΩ/m]	2.052	0.949	0.788	0.523	0.302
Resistance of the protective bar	R_{PE} [mΩ/m]	1.500	0.947	0.785	0.515	0.150
Reactance of the protective bar (50Hz)	X_{PE} [mΩ/m]	0.080	0.100	0.100	0.100	0.120
Resistance of the fault loop	R_0 [mΩ/m]	3.000	1.895	1.570	1.030	0.405
Reactance of the fault loop (50Hz)	X_0 [mΩ/m]	1.480	0.159	0.163	0.192	0.281
Impedance of the fault loop	Z_0 [mΩ/m]	3.345	1.901	1.578	1.048	0.493
	ΔV [V/m/A]10^{-3} cosφ = 0.70	1.775	0.611	0.515	0.369	0.254
$\Delta V_{1F} = \frac{1}{2}(2 R_{20} \cos\varphi + 2 X \text{ sen } \varphi)$	ΔV [V/m/A]10^{-3} cosφ = 0.75	1.776	0.649	0.546	0.387	0.258
	ΔV [V/m/A]10^{-3} cosφ = 0.80	1.767	0.687	0.577	0.405	0.260
Voltage drop with distribuited load (k)	ΔV [V/m/A]10^{-3} cosφ = 0.85	1.743	0.724	0.607	0.421	0.261
	ΔV [V/m/A]10^{-3} cosφ = 0.90	1.698	0.761	0.636	0.436	0.260
$\Delta V_{3F} = \frac{\sqrt{3}}{2}(R_{20} \cos\varphi + X \text{ sen } \varphi)$	ΔV [V/m/A]10^{-3} cosφ = 0.95	1.613	0.795	0.663	0.449	0.253
	ΔV [V/m/A]10^{-3} cosφ = 1.00	1.299	0.820	0.680	0.446	0.221
Straight length weight	p [kg/m]	1.0	4.0	4.1	4.2	9.8
Fire load	[kWh/m]	150	90	90	90	90
Protection degree	IP	23	20	20	20	20
Losses for the Joule effect at full load	P [W/m]	17.9	13.9	28.5	34.8	47.8
Ambient temperature min./MAX.	t [°C]	-5/+50	-5/+50	-5/+50	-5/+50	-5/+50

* Value for 0.3 s

SHORT CIRCUIT PROTECTION FOR ZUCCHINI'S PRODUCT RANGES (In ≤ 100A)

Zucchini's busbar system with a nominal current less or equal to 100A (LB-HL-SL-MS 63 and 100) are correctly protected against short circuit effects through a MCB (MCB Modular Circuit Breaker) with a nominal current less or equal to the one of the busbar.
This protection is assured up to MCB short circuit withstand.

The busbar trunking systems LB-HL-SL-MS are not flame propogating in compliance with IEC 332-3: 1992.

TEMPERATURE RATING SCHEDULE

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

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

Product in compliance to:
IEC 439-1 e 2, EN 60439 parte 1 e 2,
DIN VDE 0660 parte 500 e 502

Product suited to these climates:
Constant humid climate (DIN IEC 68 et 2- 3)
Cyclical humid climate (DIN IEC 68 et 2- 30)

In order to determine the current rating certain planning data must be known in advance:

- type of load inputs: three phase or single phase;
- type of circuit input: from one end, from both ends, central input, etc ;
- Nominal input voltage;
- number, power and cosφ of loads which are to be fed by the busbar;
- load diversity factor;
- load use nominal factor;
- input point short circuit current,
- room temperature;
- busbar orientation.

The current rating in case of a three phase supply is determined by the following formula:

$$I_b = \frac{P_{TOT} \cdot \alpha \cdot \beta \cdot b}{\sqrt{3} \cdot U_e \cdot \cos\varphi_{medium}} \ [A]$$

where:

I_b	current rating [A];
α	load contemporaneity factor [.];
β	load use factor [.];
b	feed factor [.];
P_{TOT}	sum of the total active power of installed loads [W];
U_e	operational voltage [V];
$\cos\varphi_{medium}$	average load power factor [.];

The "b" input factor has a value 1 in the case of busbar fed from one end only.
The value is 1/2 if fed from the centre or if it is fed from each end.

Once the operating current has been determined, choose the busbar with a nominal current rating immediately greater than the one calculated.
In the case where the room temperature is other than 40 °C, the nominal rating of the busbar must be adjusted as follows.
All Zucchini products have been designed and tested for an average room temperature of 40 °C, should they be installed in rooms with average daily temperatures different than 40 °C the nominal current of the busbar should be multiplied by a k_1 that is greater than the unit for lower temperatures at 40°C and lower than the unit if the room temperature is higher than 40°C.

The table below lists the correction coefficients of loads for installation in rooms where the average daily temperature is between 15 °C and 50 °C.

Room temperature [C]	15	20	25	30	35	**40**	45	50	55	60
Thermal correction k_1 factor [.]	1.15	1.12	1.08	1.05	1.025	**1**	0.975	0.95	0.93	0.89

Finally, the following should be considered for the most appropriate busbar choice:

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

where I_{nt} stands as maximum current loaded by a busbar for an indefinite time at the environmental specified temperature.

$$P_{(I_b)} = P \cdot \left(\frac{I_b}{I_n}\right)^2$$

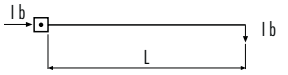
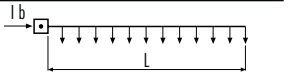
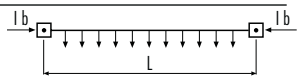
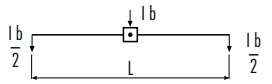
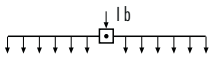
VOLTAGE DROP

If the length of the run is particularly long it is necessary to check the voltage drop (vd).
For installations with a three phase system and a power factor (cos φ) not lower than 0.7 the three phases voltage drop may be calculated with the coefficients of the voltage drop in the technical table.

$$\Delta v\% = 2 \cdot a \ \frac{k \cdot I_b \cdot L}{Vn \cdot 10^3} \cdot 100$$

defined
Ib = the current that supplies the busbar [A]
Vn = the voltage supply of the busbar [V]
L = the length of the line [m]
$\Delta v\%$ = the voltage drop percentage
a = the distribution factor of current [.]
k = the coefficient stated in the table that it corresponds to coφ [V/m/A]

The current distribution factor "a" depends on how the circuit is fed and the distribution of the loads along the busbar.

a =1	feed from one end only with load concentrated at one end	
a =1/2	feed from one end only with load uniformly distributed	
a =1/4	feed from both end only with uniform load distribution	
a =1/4	central feed with load concentrated at one and	
a =1/8	central feed with load uniformly distributed	

ex: MR 400 Al
I_b= 80A operational voltage
b=1 end feed unit from one end
k=0.608 see table technical data
Cosφ = 0.85
L= 100m the length of line
Vn= 400V the voltage supply of the busbar

$$\Delta v\% = b \ \frac{k \cdot I_b \cdot L}{Vn \cdot 10^3} \cdot 100 = \frac{179 \cdot 350 \cdot 100}{400 \cdot 10^6} \cdot 100 = 1.57\%$$

SHORT CIRCUIT CURRENT

The nominal short circuit current value which the busbar trunking can withstand makes provision for both electrodynamic stress and thermal energy dissipated during the fault. The busbar must be able to sustain the short circuit current for the entire duration of the fault i.e for the time required for the protection device to intervene, cutting off the metal continuity and extinguishing the electric arch. The electrodynamic stresses are directly proportional to the product of the instant current value which affects the line and is not proportional to the spacing of the bars.

LOSSES DUE TO JOULE EFFECT

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 bars.
In the three phase system the losses are assessed with the ratio.

$$P = 3 \cdot R_f \cdot I_b^2 \cdot 10^{-3} [W/m]$$

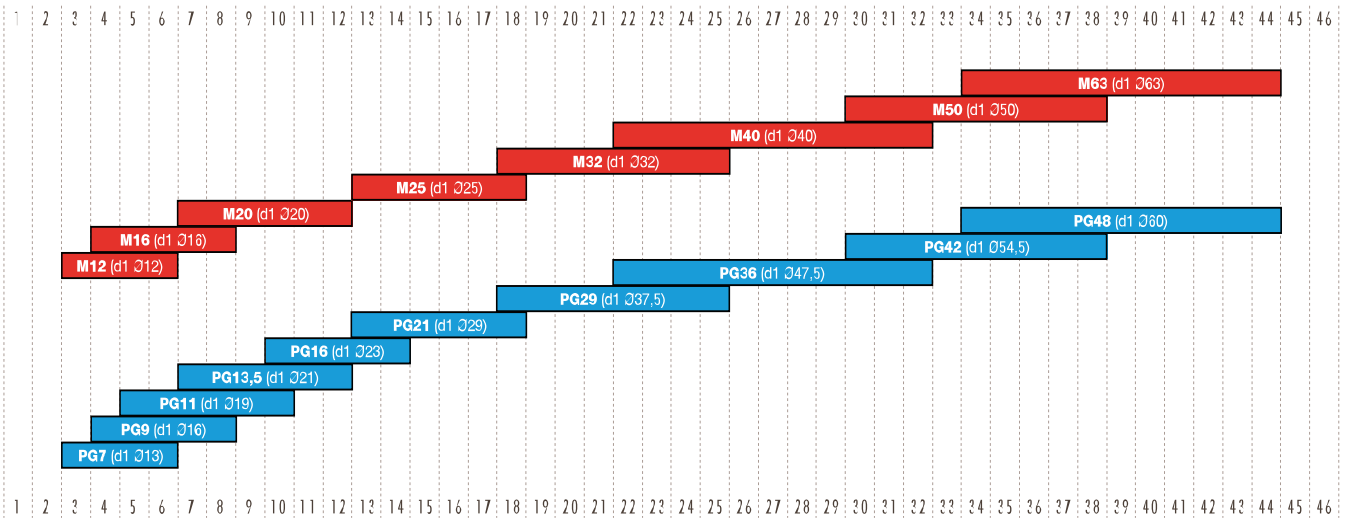
While in the single-phase system.

$$P = 2 \cdot R_f \cdot I_b^2 \cdot 10^{-3} \ [W/m]$$

Losses quoted in technical tables refer to I_u, for $I_b \neq I_n$

CABLE GLAND TABLE

Dimension d2 Ø cable [mm]

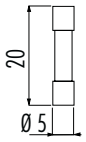


Dimension d2 Ø cable [mm]

CERAMIC FUSE 5 x 20

Operating characteristics

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



FUSE

- I_n = 6.3 A
- U_e 250V ceramic fuse IEC 127
- Interrupting power H 1500 A
- Voltage drop ΔV = 150 mV
- I^2t = 48 A^2s

COORDINATION TABLE

with Legrand DPX MCCBs

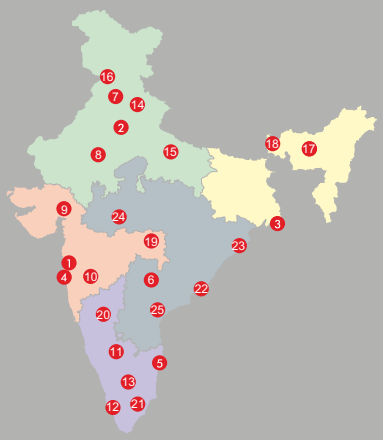
SL, MS, SB, MR Switches-Busbar coordination table
Contingent Short circuit kA eff. (50/60 Hz - 380/415 V)

		SL 40A	SL - MS 63A	MS 100A	MS MR 160A	MR 250A	MR 315A	MR 400A	MR 500A	MR 630A	MR 800A	MR 1000A
DPX LEGRAND	**DPX 125 I_{CW}16kA - 40A**	16	16									
	DPX 125 I_{CW}25kA - 40A	25	25									
	DPX 125 I_{CW}36kA - 40A	36	36									
	DPX 125 I_{CW}16kA - 63A		16	16								
	DPX 125 I_{CW}25kA - 63A		25	25								
	DPX 125 I_{CW}36kA - 63A		36	36								
	DPX 125 I_{CW}16kA - 100A			16								
	DPX 125 I_{CW}25kA - 100A			25								
	DPX 125 I_{CW}36kA - 100A			36								
	DPX 160 I_{CW}25kA - 160A			25	25							
	DPX 160 I_{CW}36kA - 160A			36	36							
	DPX 160 I_{CW}50kA - 160A			50	50							
	DPX 250ER I_{CW}25kA - 250A				25	25						
	DPX 250ER I_{CW}36kA - 250A				36	36						
	DPX 250ER I_{CW}50kA - 250A				50	50						
	DPX 250 I_{CW}36kA - 250A				36	36						
	DPX 250-H I_{CW}70kA - 250A				70	70						
	DPX 250-L I_{CW}100kA - 250A				100	100						
	DPX 630 I_{CW}36kA - 400A						36	36				
	DPX 630-H I_{CW}70kA - 400A						70	70				
	DPX 630-L I_{CW}100kA - 400A						100	100				
	DPX 630 I_{CW}36kA - 630A								36	36		
	DPX 630-H I_{CW}70kA - 630A								70	70		
	DPX 630-L I_{CW}100kA - 630A								100	100		
	DPX 1250 I_{CW}50kA - 800A									50	50	
	DPX 1250-H I_{CW}70kA - 800A									70	70	
	DPX 1250-L I_{CW}100kA - 800A									100	100	
	DPX 1250 I_{CW}50kA - 1000A										50	50
	DPX 1250-H I_{CW}70kA - 1000A										70	70
	DPX 1250-L I_{CW}100kA - 1000A									100	100	

Note for Lexic MCBs

The Zucchini Busbar Trunking Systems, specified herein, are protected by Lexic MCBs up to their breaking capacity

NOTES



Head office

1. **Legrand (India) Pvt. Ltd.**
61 & 62, 6th Floor, Kalpataru Square,
Off Andheri-Kurla Road, Andheri (E),
MUMBAI - 400 059.
Tel : (022) 3041 6200
Fax : (022) 3041 6201
Website : www.legrand.co.in

Regional sales offices

2. A-25, Mohan Co-operative
Industrial Estate, Mathura Road,
NEW DELHI - 110 044.
Tel : (011) 2699 0028 / 29 / 30
Fax : (011) 2699 0047

3. Bhakta Towers, 2nd & 3rd Floor,
Plot No. KB 22, Salt Lake, Sector - 3
KOLKATA - 700 091.
Tel : (033) 4021 3535 / 36
Fax : (033) 4021 3537

4. 34, Kalpataru Square, 3rd Floor,
Off Andheri - Kurla Road, Andheri (East),
MUMBAI - 400 059.
Tel : (022) 3385 6200
Fax : (022) 3385 6201

5. Gee Gee Universal,
8th Floor, Door No. 2, 18/1 & 18/2
McNichols Road, Chetput
CHENNAI – 600 031.
Tel : (044) 3024 7200, 2836 4165 / 67 / 68
Fax: (044) 2836 4169

6. 205-208, 2nd Floor, Block - II,
White House, Kundan Bagh, Begumpet,
HYDERABAD – 500 016.
Tel : (040) 2341 4398 / 67
Fax : (040) 6636 6974

Branch offices

7. SCO 1-2-3
Second floor, Sector 17B,
CHANDIGARH - 160 017.
Tel : (0172) 305 8631/ 32/33/34/35
Fax : (0172) 501 9008

8. 507-510, Vth Floor,
Soni Paris Point,
Jai Singh Highway,
Banipark,
JAIPUR - 302 016.
Telefax : (0141) 5113129

9. 504, Sakar IV,
Opp. M. J. Library,
Ellis Bridge,
AHMEDABAD - 380 006.
Gujarat
Tel : (079) 2658 6561/2
Fax : (079) 2658 6563

10. 402, Swastik Chambers,
Near Ashwamegh Marriage Hall,
Behind HP Petrol Pump,
Off Karve Road,
Erandwane,
PUNE - 411 004.
Tel : (020) 67295600 / 601
Fax : (020) 67295604

11. IInd Floor,
Al-Latheef Building
2/1, Union Street,
Off. Infantry Road,
BANGALORE – 560 001.
Tel : (080) 2286 1081, 4113 3293 / 4
Fax : (080) 2286 1078

12. No. 36/2178,
Syda Building, 2nd Flr.,
Kaloor – Kadavanthra Road,
Kaloor,
KOCHI – 682 017.
Tel : (0484) 234 2921, 658 0921
Fax : (0484) 233 3921

13. B-15,
Thirumalai Towers,
IV-D, Fourth Floor,
723, Avanashi Road,
COIMBATORE – 641 018.
Tel : (0422) 650 2728, 222 3634 / 0283
Fax : (0422) 222 3164

Area offices

14. ABC Business Club 16,
Tagore Villa, Chakrata Road
DEHRADUN - 248 001. Uttaranchal.
Tel : (0135) 271 5189 / 248001

15. Cabin No.104/105, Trade Point,
Ground Floor, Saran Chamber 1,
5, Park Road, Hazratganj
LUCKNOW - 226 001.
Tel : (0522) 223 9044 / 7285
Fax : (0522) 223 9124

16. Cabin No. 9, Second Floor
Madhok Trade Centre,
Madhok Complex, Ferozpur Road
LUDHIANA - 141 001.
Tel/Fax No.: (0161) 277 0301 / 304

17. House No. 97, Ground Floor,
Rajgarh Main Road,
Opp. City Heart Nursing Home
GUWAHATI - 781 007.
Tel : (0361) 245 8498

18. 94, Udham Sarani,
Ground Floor, Ashrampara,
SILIGURI - 734001
Tel : 94341 91635 / 98009 77780

19. 2nd Floor, 375 Smruti Bldg.,
Gandhi Nagar, North Ambazari Road,
NAGPUR - 440 010.
Tel : (0712) 224 1790
Fax : (0712) 222 0113

20. Prime Plaza, 2nd Floor,
1st Main, Girls High School Road,
Near PNB, Deshpande Nagar
HUBLI - 580029
Mobile Nos: 9880764338 / 9880764339

21. Aparna Towers, 1st Flr. 2/3, Bypass Road
MADURAI – 625 010.
Telefax : (0452) 435 5945

22. 404, Eshwar Plaza,
Dwaraka Nagar, Main Road
VISHAKHAPATNAM – 530 020.
Telefax : (0891) 663 9363

23. Plot No. 359, Saheed Nagar, 2nd floor,
BHUBANESWAR - 751 007.
Tel : (0674) 254 0623

24. C17/18, Shreevardhan Realty Pvt. Ltd.,
Upper Ground Floor,
Shreevardhan Complex, 4, RNT Marg,
INDORE - 452 001.
Tel : (0731) 404 6649
Telefax / Direct Line: (0731) 404 6649

25. MF-2, Datta's Lords House,
Jammi Chettu Street,
VIJAYAWADA – 520 010.
Telefax : (0866) 669 9393

ZLM/5000/07/2011

Technical assistance from Legrand

Telephonic technical assistance for selection of products, technical information, guidance, wiring diagrams and estimation is now made available to you. Contact Legrand technical assistance at the following telephone numbers: **(022) 3041 6252 / 53 / 00**. Also you could contact our regional offices:

New Delhi : Tel.: (011) 2699 0028
Kolkata : Tel.: (033) 4021 3535 / 36
Mumbai : Tel.: (022) 3385 6200
Chennai : Tel.: (044) 3024 7200, 2836 4165 / 67 / 68
Hyderabad : Tel.: (040) 2341 4398 / 67

customer.care@legrand.co.in
www.zucchinispa.it

legrand®