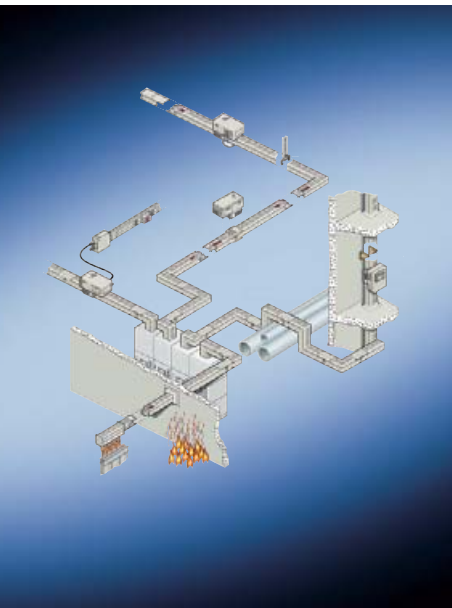


Busbar trunking system LDA/LDC

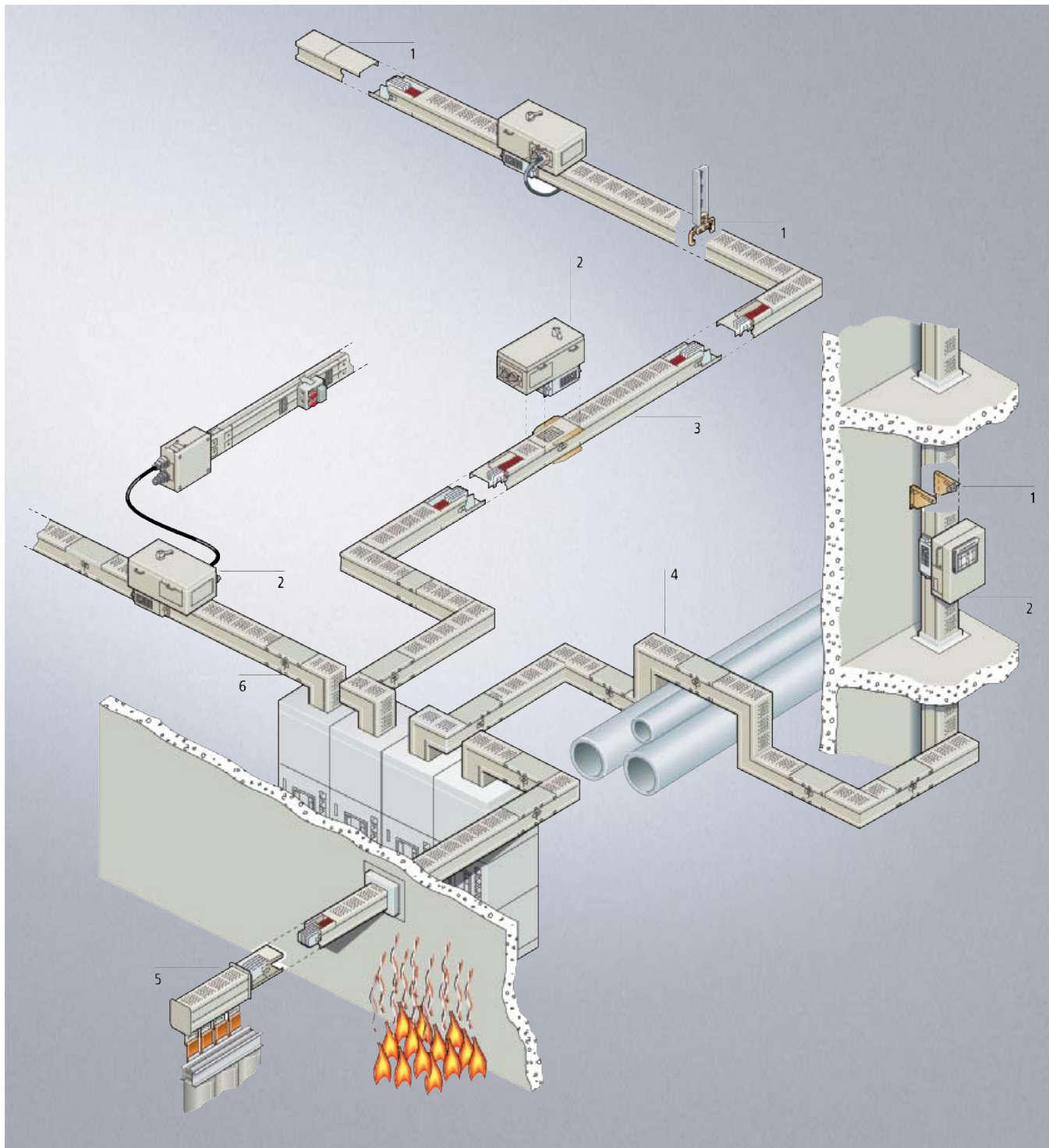
4



4/2	System description
4/4	System components
4/23	Technical Data
4/40	Weights
4/44	Dimension drawings

Busbar trunking system LDA/LDC

System description



The LD busbar trunking system is used for both power transmission and distribution. The system offers a high short-circuit rating and is particularly suited for the connection of transformers to low-voltage main distribution boards and sub-distribution boards. In applications where high powers are required, conventional systems frequently require the use of parallel cables. The LD system offers optimal power distribution for both horizontal and vertical busbar runs.

1 Accessories

2 Tap-off units

Degree of protection IP30 and IP54 (IP55 on request)

With fuse switch-disconnector from 125 A to 630 A

With circuit-breakers for 80 A to 1250 A

Early make PEN or PE contact

Load free switching via positive operating sequences

Coding brackets

3 Straight trunking units

With/without fire barrier

Degree of protection IP34 and IP54 (IP55 on request)

4- and 5-conductor systems

Standard lengths: 1.6 m, 2.4 m and 3.2 m

Optional lengths: 0.5 – 3.19 m

With/without tap-off points

Fire barriers: Fire resistance class S 120 conform to DIN 4102 – 9

4 Junction units

L unit

Z unit

U units

T unit

With/without fire barrier

5 Feeder units

Cable feeder units

Universal connection element for transformer/distribution boards

6 Distribution board connection units

For connection from the distributor to the SIVACON system from above below

Connection units for non-Siemens distribution systems

Busbar trunking system LDA/LDC

System components

Preliminary comments for tender specification

The busbar trunking systems should be offered as type-tested low-voltage switchgear and controlgear assemblies TTA to IEC/EN 60439-1 and -2, DIN VDE 0660 Part 500 and Part 502 (German standard), as a steel-encapsulated ready-to-connect system.

The distribution systems must be suitable for power transmission, e.g. between transformer and low-voltage main distribution boards, as well as for power distribution providing a supply of power to an entire area.

The brand offered must be a complete system consisting of system modules, including transformers and elements for connection to the distribution boards, as well as such as brackets, straight trunking units and junction units. All components should be available both in straight and offset versions.

Trunking units with tap-off openings should be able to be equipped with coded tap-off units. The tap-off units must be protected with coding brackets to prevent incorrect mounting. Isolation of the tap-off units during dismantling

should be assured via positive operating sequences.

If required, the busbar trunking system should be capable of being equipped with asbestos-free fire barriers which comply with fire resistance class S 120, and which have been certified by the local or government authority responsible for building standards. The trunking unit's steel enclosure is made of moulded steel profiles to permit large clearances between suspension points. The enclosure is galvanized and painted with in a light grey colour (RAL 7035).

The external dimensions may not exceed 180 × 180 (240) mm.

The individual system modules are connected by hanging a hook from a bolt and tightening a state-of-the-art maintenance-free single-bolt clamp. The conductor between two system units should not be connected with screws.

The conductor material is made of Aluminium or of copper if the rated current requires. The Aluminium conductor must be nickel-plated and tinned along its entire length, the Copper

conductor must be tinned and provided with an additional insulating layer of epoxy-resin.

Fire load should not exceed the value stated in the technical specifications. Expansion compensation units and fixed points should be engineered based on their requirements and busbar run (horizontal mounting). In the case of vertically mounted trunking units, a compensation unit and fixed point must be integrated in every system module. Junction units with flexible connections or cable connections are not permitted.

The following certificates or declarations of conformity must accompany the offer:

- DIN ISO 9001 QA certification
 - Proof of sprinkler testing
 - Proof of absence of halogen
 - Proof of prevention of propagation of an arcing fault
 - Proof that system is maintenance-free
- Following the general information, a precise description of the system based on the technical requirements should be provided as follows:

LDA/LDC busbar trunking system technical data	
Rated current	_____ ¹⁾
Degree of protection	IP34/IP54 ²⁾
Mounting position	horizontal/vertical ²⁾
Rated insulation voltage	1000 V AC/1200 V DC
Rated operational voltage	1000 V AC
Rated frequency	16 2/3 – 60 Hz
Rated peak withstand current I_{pk}	_____ ¹⁾
Rated short-time withstand current I_{cw} (1s)	_____ ¹⁾
Conductor material	Al/Cu ²⁾
Number of conductors	L1 – L3 and PEN (4 busbars/4-pole) L1 – L3 and ½ PEN (7 busbars/4-pole) L1 – L3 and PEN (8 busbars/4-pole) L1 – L3, N, PE (5 busbars/5-pole) L1 – L3, ½ N, ½ PE (8 busbars/5-pole) L1 – L3, N, ½ PE (9 busbars/5-pole)
Fire load without tap-off points	_____ ¹⁾
Enclosure dimensions	LDA1 to LDC3 LDA4 to LDC8
	180 × 180 mm ²⁾ 240 × 180 mm ²⁾

Important planning information:

The normal installation orientation of the busbar trunking system is a horizontal edgewise mounting of the busbars. In exceptional cases, due to a particular busbar run or through the option of attaching tap-off units on the side, it is not possible to avoid flat placement of the busbars. Through the increased internal heating of the system in this case, a derating of the rated current is necessary. The same applies for the vertical differences in height > 1.3 m (see the "Key to type references" section in the following table).

The LD busbar trunking system is equipped with a ventilation system. When enhancing the degree of protection from IP34 to IP54 (enclosed system), the rated current must be derated as specified in the table in the following section.

¹⁾ Enter data of the selected system type. See the Technical Data for values.

²⁾ Please cross out inapplicable information.

Key to type references

The basic components of the LD-system are determined using the key to type references. Type is defined and selected based on rated current, conductor material, system type and degree of protection.

The following type key permits precise definition of the system required.

Straight and angled trunking units, distribution board connection units

Rated current I _e [A]										
IP34						IP54		IP31/IP54		No.
Horizontal edgewise						Horizontal edgewise and vertical		Horizontal flat		
Including height differences										
< 1.3 m		> 1.3 m		Vertical						
Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	
1100		950		950		900		700		1
1250	2000	1100	1650	1100	1650	1000	1600	750	1200	2
1600	2600	1250	2100	1250	2100	1200	2000	1000	1550	3
2000		1700		1700		1500		1200		4
2500		2100		2100		1800		1700		5
3000	3400	2300	2700	2300	2700	2000	2600	1800	2000	6
3700	4400	2800	3500	2800	3500	2400	3200	2200	2600	7
4000	5000	3400	4250	3400	4250	2700	3600	2350	3000	8

Conductor material	
Al	A
Cu	C

Notes:

N/PEN = ½ L from LD.4... to LD.8... possible

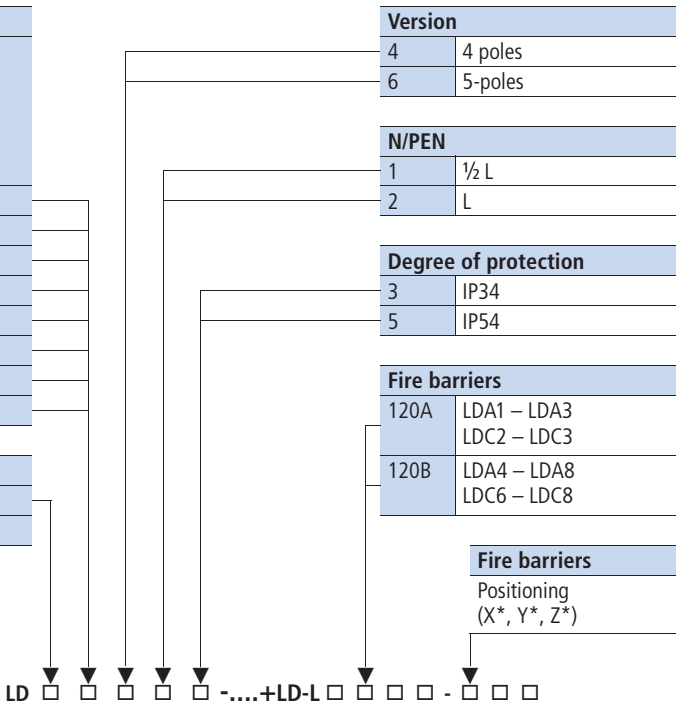
- In 4-pole systems LD.14.. to LD.34.. PEN = L is always the case.
- In 5-pole systems LD.16.. to LD.36.. PE + N = L is always the case.
- In 5-pole systems LD.46.. to LD.86.. PE = ½ L is always the case.
- With the LD.4... to LD.8... systems, a choice of N/PEN = ½ L or N/PEN = L is possible.
- Also see section entitled "Size and configuration of busbar package".

Selection example:

A rated current of 2500 A is required for a project. The conductor material to be used is aluminium. A 4-pole system is prescribed. The cross-section of the protective conductor should be same as the cross-section of the phase conductor.

The required degree of protection is IP34. The installation is implemented horizontally edge-wise, without differences in height. With the aid of the chart, the following type has been determined:

LDA 5423

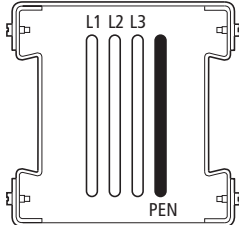
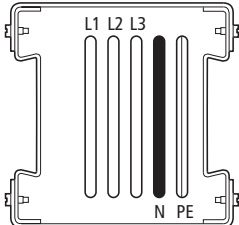
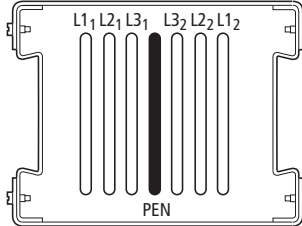
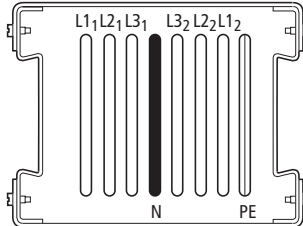
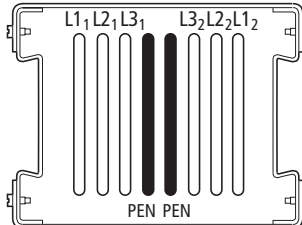
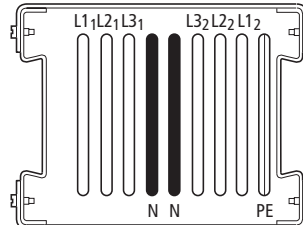


Busbar trunking system LDA/LDC

System components

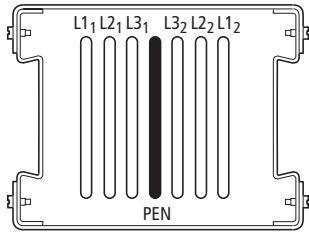
Size and configuration of the busbar package

The LD busbar trunking system comes in two sizes. Depending on the application in question, the user can select the system type (4-pole/5-pole) and the size of the N/PEN cross-section.

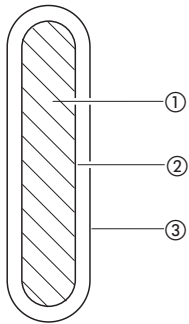
Size	4-pole	5-pole
180 mm × 180 mm LDA1.2. to LDA3.2. LDC2.2. to LDC3.2.	PEN = L 	PE = N = L 
240 mm × 180 mm LDA4.1. to LDA8.1. LDC6.1. to LDC8.1.	PEN = 1/2 L 	PE = N = 1/2 L 
240 mm × 180 mm LDA4.2. to LDA8.2. LDC6.2. to LDC8.2.	PEN = L 	PE = 1/2 L, N = L 

PE = L on request

In the following drawings, a cut-out example of a 7 busbar system is shown. The position of the individual phases and the PEN protective earth conductor is specified. The profile of the enclosure can also be recognised.

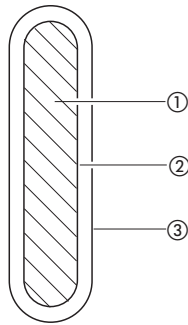


LD busbar systems are available with aluminium (LDA....) and also copper (LDC....) conductor materials. Due to the conductors' special surface finishing, trunking units with different conductor materials can be combined. Aluminium busbars are designed with both a tin and nickel coating.



LDA busbar systems with aluminium conductors

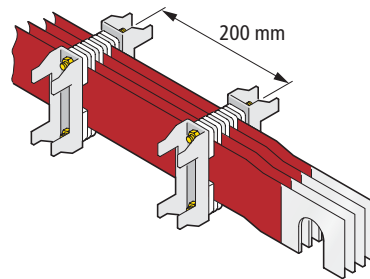
- ① aluminium busbar
- ② nickel coating, tin coating
- ③ high-temperature resistant insulation coating



LDC busbar system with copper conductor material

- ① copper busbar
- ② tin coating
- ③ high-temperature resistant insulation coating

To ensure a high short-circuit rating and maintain proper distance between the busbars, busbar supports are installed every 200 mm as shown in the diagram below.

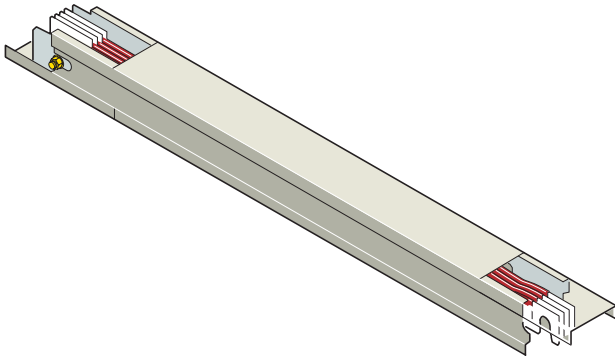


Busbar trunking system LDA/LDC

System components

Straight trunking units for horizontal installation

Straight trunking units are used for transmitting electric power and supplying loads.



Without tap-off points

Standard lengths

1.6 m: LD.....-1.6

2.4 m: LD.....-2.4

3.2 m: LD.....-3.2

Optional lengths

0.50 m – 0.89 m: LD.....-1W*

0.90 m – 1.59 m: LD.....-2W*

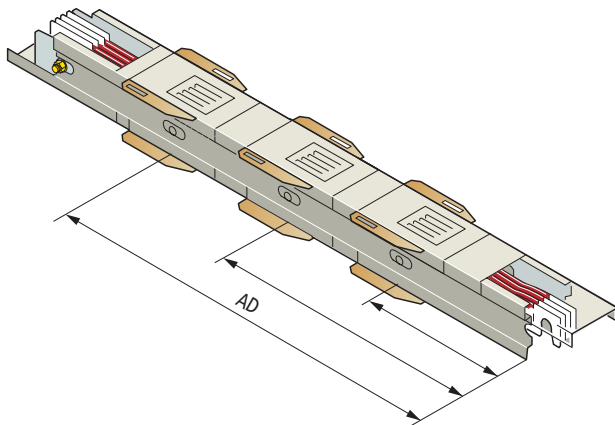
1.61 m – 2.39 m: LD.....-3W*

2.41 m – 3.19 m: LD.....-4W*

Straight trunking unit for expansion compensation:

Standard length

1.2 m: LD.....-D



With tap-off points (top and/or bottom):

Standard lengths with 1, 2 or 3 tap-off points

3.2 m: LD.....-K-3.2-3AD

3 tap-off points

3.2 m: LD.....-K-3.2-2AD

2 tap-off points

3.2 m: LD.....-K-3.2-AD

1 tap-off point

Optional lengths with 2 tap-off points

2.20 m – 2.40 m: LD.....-K-2W*-2AD

2.41 m – 3.20 m: LD.....-K-3W*-2AD

Optional lengths with 1 tap-off point

1.20 m – 1.60 m: LD.....-K-1W*-AD

1.61 m – 2.40 m: LD.....-K-2W*-AD

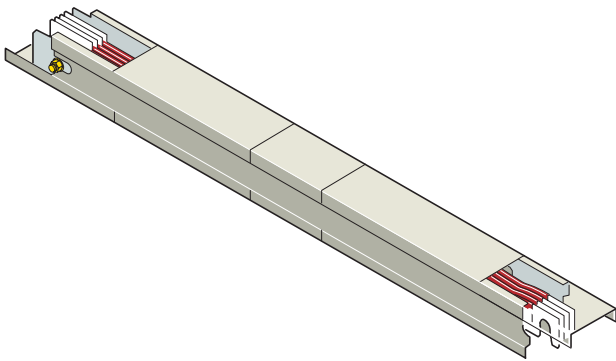
2.41 m – 3.20 m: LD.....-K-3W*-AD

W = optional length

* = lengths in m

AD = tap-off point

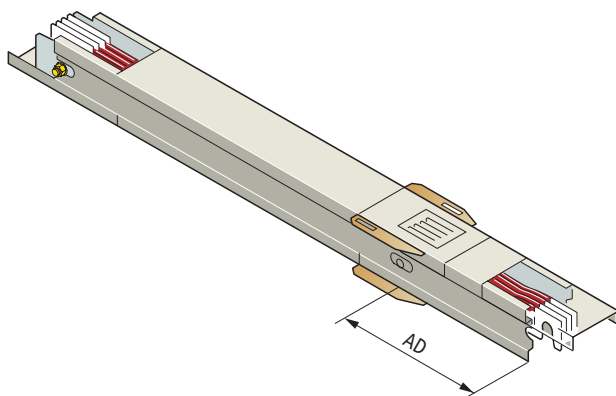
Straight trunking units for vertical installation



Without tap-off points with integrated expansion compensation:

Standard lengths
 2.4 m: LD.....-V-2.4
 3.2 m: LD.....-V-3.2

Optional lengths
 2.29 m – 2.80 m: LD.....-V-1W*
 2.81 m – 3.00 m: LD.....-V-2W*
 3.01 m – 3.19 m: LD.....-V-3W*



With one tap-off point (top) with integrated expansion compensation:

Standard lengths with 1 tap-off point
 2.4 m: LD.....-K-V-2.4-AD
 3.2 m: LD.....-K-V-3.2-AD

Optional lengths with 1 tap-off point
 2.29 m – 2.80 m: LD.....-K-V-1W*-AD
 2.81 m – 3.00 m: LD.....-K-V-2W*-AD
 3.01 m – 3.19 m: LD.....-K-V-3W*-AD

Straight trunking unit for expansion compensation:

Standard length
 1.2 m: LD.....-D

W = optional length
 * = lengths in m
 AD = tap-off point

Busbar trunking system LDA/LDC

System components

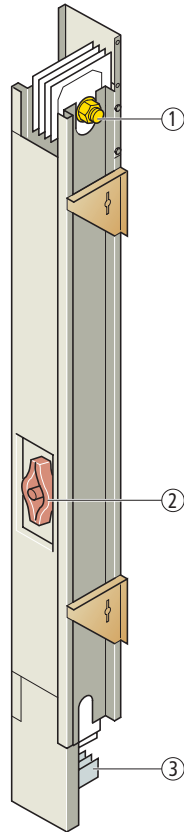
Important planning information:

Busbars in the trunking unit expand due to heat losses at the rated load. In order to compensate for this linear expansion, linear expansion compensation must be installed at defined intervals with horizontal installation.

With vertical installation, each trunking unit is equipped with an expansion compensation unit.

When planning trunking units with expansion compensation be sure to keep the following in mind:

- The max. permissible length of a straight run between two junction units may not exceed 10 m in length.
- The maximum permissible length of a straight run between a junction unit and end flange is 25 m. If longer busbar runs are planned, the respective expansion compensation units must be incorporated.



Tap-off unit with expansion compensation

- ① bolts
- ② Expansion compensation
- ③ hook

Tap-off points

Tap-off points are only possible on straight trunking units (both standard lengths and optional lengths possible):

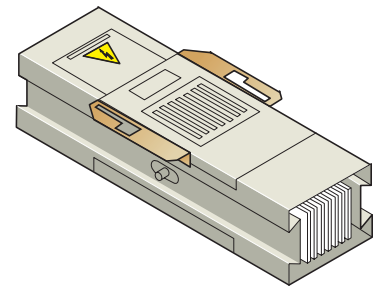
- tap-off point on TOP: ...-AD
- tap-off point BOTTOM: ...-ADU
- tap-off points on TOP and BOTTOM: ...-ADO+U

With a trunking unit with a tap-off point at the TOP and BOTTOM, only one tap-off unit can be used at a time. The required distance between tap-off points is 1 m.

The required type should be determined during engineering, based on the mounting position of the busbar.

In the case of optional trunking units with tap-off point, a minimum clearance of 0.6 m is required between the end of the busbar and a tap-off point.

A coding bracket is located on both sides of a tap-off point. This guarantees non-interchangeability and correct phasing sequence installation of the tap-off units.

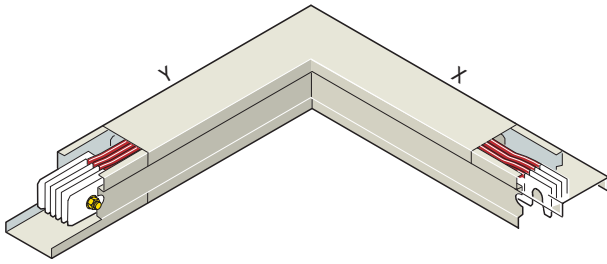


Trunking unit with tap-off point

Busbar trunking system LDA/LDC

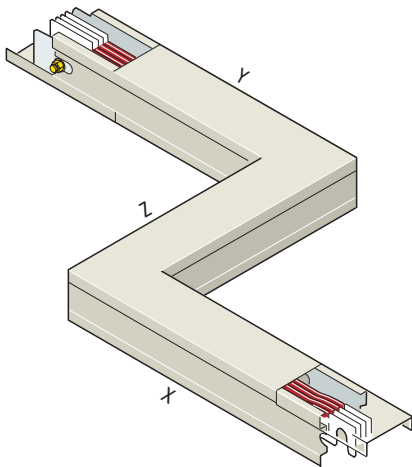
System components

Junction units



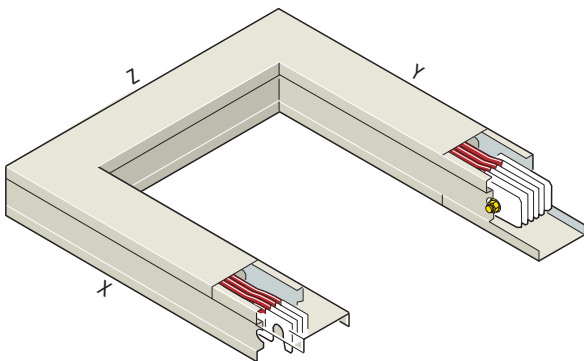
Elbow trunking units for **horizontal** installation:

Elbow LD.....-L...
 $X = 0.5 - 1.24 \text{ m}$
 $Y = 0.5 - 1.24 \text{ m}$



Z unit LD.....-Z.-Z*
 $X/Y = 0.5 \text{ m}$

	System	Trunking unit
$Z = 0.36 - 0.99 \text{ m}$	LD.1 - LD.3	$180 \times 180 \text{ mm}$
$Z = 0.48 - 0.99 \text{ m}$	LD.4 - LD.8	$240 \times 180 \text{ mm}$



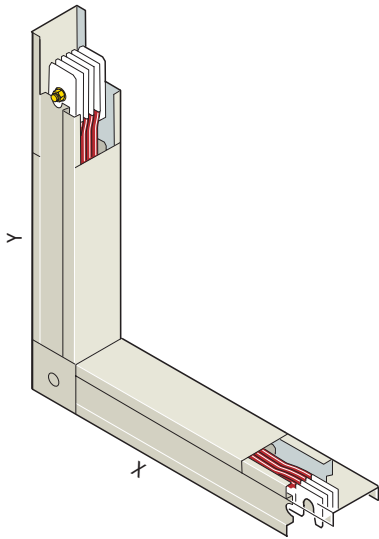
U unit LD.....-U.-Z*
 $X/Y = 0.5 \text{ m}$

	System	Trunking unit
$Z = 0.46 - 0.99 \text{ m}$	LD.1 - LD.3	$180 \times 180 \text{ mm}$
$Z = 0.58 - 0.99 \text{ m}$	LD.4 - LD.8	$240 \times 180 \text{ mm}$

* = Optional length in m

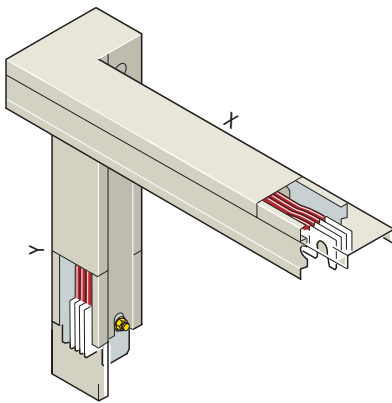
Busbar trunking system LDA/LDC

System components

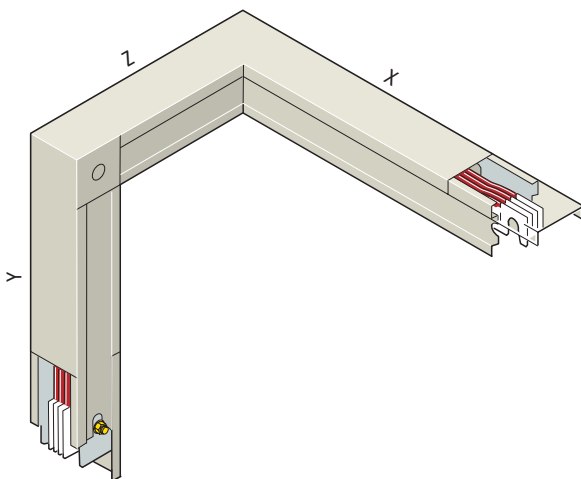


Elbow trunking units for **horizontal and vertical** installation:

Elbow LD.....-L.
 $X = 0.5 - 1.24 \text{ m}$
 $Y = 0.5 - 1.24 \text{ m}$



Offset elbow LD.....-L.
 $X = 0.5 - 1.24 \text{ m}$
 $Y = 0.5 - 1.24 \text{ m}$



Offset knee LD.....-L...-Z*
 $X/Y = 0.5$

	System	Trunking unit
$Z = 0.36 - 1.3 \text{ m}$	LD.1 - LD.3	$180 \times 180 \text{ mm}$
$Z = 0.42 - 1.3 \text{ m}$	LD.4 - LD.8	$240 \times 180 \text{ mm}$

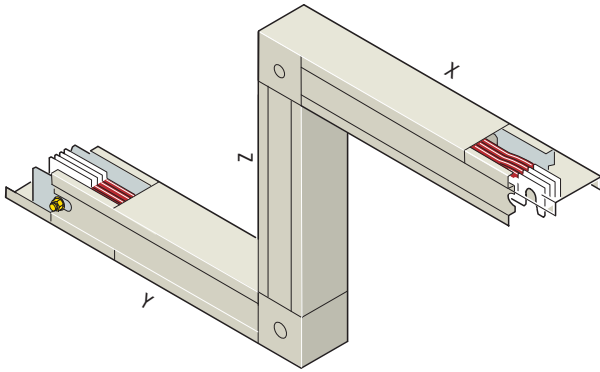
* = Optional length in m

Busbar trunking system LDA/LDC

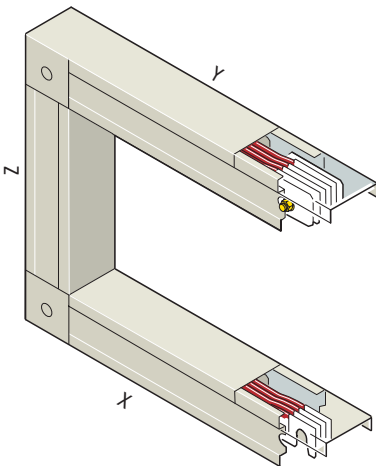
System components

Elbow trunking units for
horizontal and vertical installation:

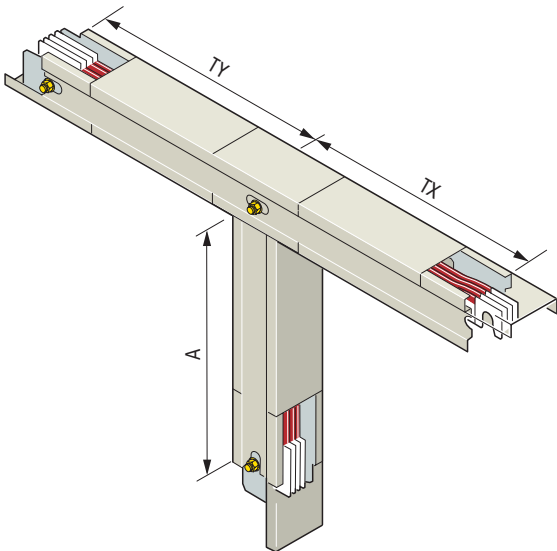
Z unit LD.....-Z.-Z*
X = 0.5 – 1.24 m
Y = 0.5 – 1.24 m
Z = 0.36 – 0.99 m



U unit LD.....-U.-Z*
X/Y = 0.5 m, Z up to 0.99 m
Z = 0.5 – 0.99 m



T unit LD.....-T.
TX = 0.58 m and TY = 0.62 m; A = 0.5 m



* = Optional length in m

Busbar trunking system LDA/LDC

System components

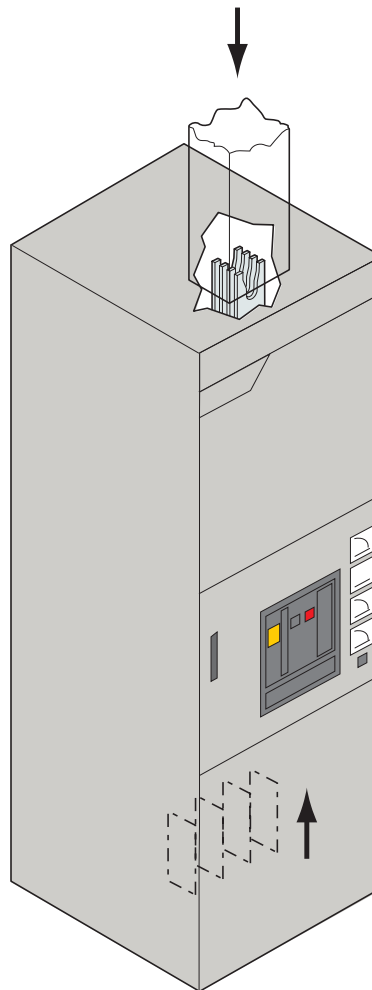
Connection to Siemens power distribution systems

Connection to the Siemens power distribution system SIVACON as a type-tested low-voltage switchgear and controlgear assembly (TTA) to IEC/EN 60439-1 and -2

The busbar trunking system can be connected to the top as well as the bottom of the power distribution system.

Rated current

For rated currents up to 5000 A type-tested modules will be offered.



Connector unit for connection to non-Siemens power distribution systems

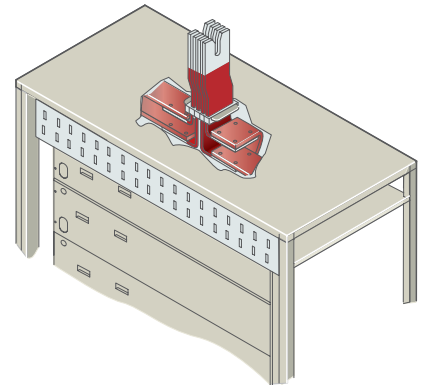
If the busbar system is to be connected to a non-Siemens distribution system, it is possible to make this connection using the **LD. - FA1** connection unit for connection to non-Siemens systems. The connection unit is integrated into the distribution board and provides the interface for the copper conductors to the distribution system.

Rated currents

- See the Technical Data for information on maximum rated currents.
- The maximum temperature for the insulated busbars is 135 °C.
- The terminal capacity for the copper connections can be found in the Technical Data.

Installing the connection unit

The connections to the connection unit in the distributor must be made according to the specifications or details provided by the manufacturer of the distribution board. The manufacturer must ensure that the necessary short-circuit rating is provided and that the permissible limit temperature of the connection unit to non-Siemens distribution boards is not exceeded.



Type key

LDA			LDC		
Rated current I_e A	LDA system	No.	Rated current I_e A	LDC system	No.
1100	1	2	2000	2	2
1250	2				
1600	3	3	2600	3	3
2000	4	5			
2500	5				
3000	6	7	3400	6	6
3700	7			4400	7
4000	8	8	5000	8	8

Conductor material	
Al	A
Cu	C

Version

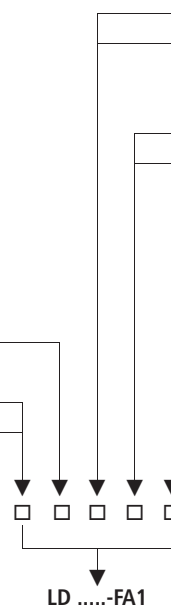
4	4 poles
6	5 poles

N/PEN

1	1/2 L
2	L

Degree of protection

0	IP00
---	------

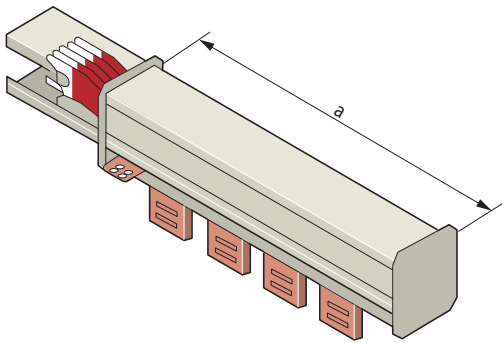


Busbar trunking system LDA/LDC

System components

Connection units for transformers and distribution boards

Four different transformer connection units **LD.....-AS** are available for connection of varying transformers to busbar trunking systems in all rated current ranges.



Connection unit LD.....-AS...

Connection unit LD.....-AS1(-T)
with selectable phase clearance:
150 – 180 mm, $a = 725$ m
Available phase sequences:
L1, L2, L3, PEN
PEN, L3, L2, L1

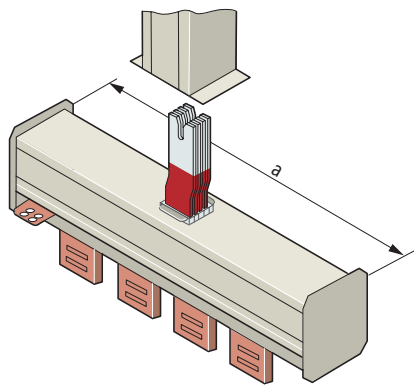
Connection unit LD.....-AS2(-T)
with selectable phase clearance:
190 – 380 mm, $a = 1085$ m
Available phase sequences:
L1, L2, L3, PEN
PEN, L3, L2, L1

Connection unit LD.....-AS3(-T)
with selectable phase clearance:
450 – 750 mm, $a = 1430$ m
Available phase sequences:
Lx, PEN, L2, Lx
Lx, L2, PEN, Lx
Lx = L1 or L3

Connection unit LD.....-AS4(-T)
with selectable phase clearance:
450 – 750 mm, $a = 1930$ m
Available phase sequences:
L1, L2, L3, PEN
PEN, L3, L2, L1

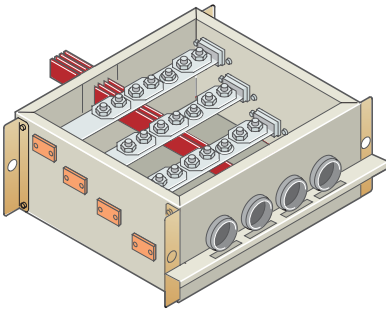
We recommend that the clearance between the connection lug of the connector unit and the transformer does not exceed max. 200 mm.

The universal connector unit can also be used for connecting distribution boards.



Connection unit LD.....-AS.T

Incoming cable connection



The **LDA(C)...-KE** incoming cable connection is used when the busbar system has to be supplied via cables.

The incoming cable connection unit is designed for the following rated currents:

- **1100 – 2600 A** (with IP34)
- **900 – 2100 A** (with IP54).

Enclosure sizes

Three system-dependent enclosure sizes are available:

- Size 1: LDA1...-KE to LDA2...-KE
- Size 2: LDA3...-KE and LDA4...-KE
LDC2...-KE
- Size 3: LDA5...-KE.

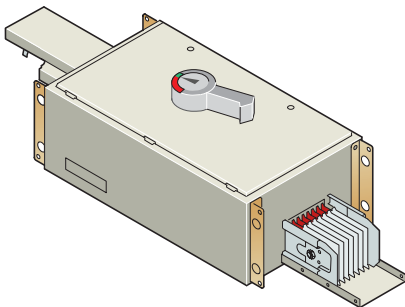
The maximum dimensions are: 920 mm × 639 mm × 490 mm
(W × H × D).

The degree of protection can be **IP34** or **IP54**.

Both **multicore** and **single-core cables** can be used. Cross-sections of up to 300 mm² (terminal bolts) can be connected directly to the connection bar of the cable connection unit.

The standard version includes metal flange plates and cable grommets. An undrilled aluminium plate is provided ex-works for single-core cables.

Coupling units



Coupling units are used for disconnecting and connecting parts or areas of a power supply system. To adjust the busbar system to the actual load, the cross-section of the busbar can be reduced and protected against short-circuits and overloads with a coupling unit.

Depending on the task at hand, coupling units can be equipped with fuse switch-disconnectors or circuit-breakers. Coupling units with arc fault protection are also optionally available.

Rated currents

Depending on the application, rated currents of **1100 – 3000 A** are available for the system.

Description

Coupling units can be controlled both manually and by remote operator.

An integrated auxiliary contact (NHI) and trip indicating auxiliary contact (RHI) are provided as signalling modules, enabling the operator to indicate ON, OFF or TRIPPED.

Dimensions

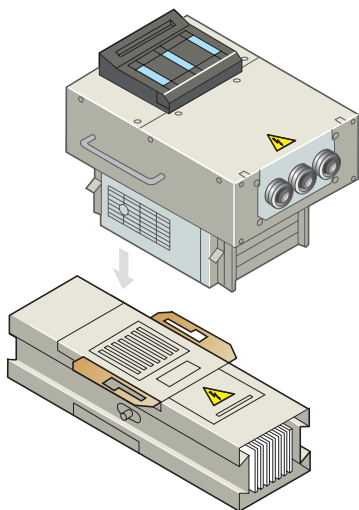
The mounting dimensions in the busbar run is 1600 mm.

The maximum dimensions are: 1320 mm × 450 mm × 750 mm
(W × H × D).

Busbar trunking system LDA/LDC

System components

Tap-off units



Tap-offs for different current ratings are required, depending on the application and type and size of loads. These tap-offs are implemented in the form of tap-off units with fuse switch-disconnectors or with circuit-breakers.

Features of Siemens tap-off units:

- plug-in tap-off units can be fitted/removed easily
- are designed with a steel enclosure

Two versions of tap-off units are available:

- with fuse switch-disconnectors
- with circuit-breakers

Early make PE or PEN

The current tap-off in the tap-off unit is in the form of an early-make or late-break PE/PEN conductor contact.

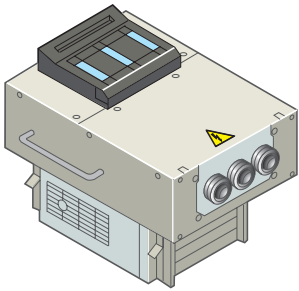
With a 4-pole system, this is made possible by a longer PEN busbar on the contact system. With a 5-pole system, the PE contact is established via wiper contacts on the coding brackets.

Anti-rotation feature and non interchangeability

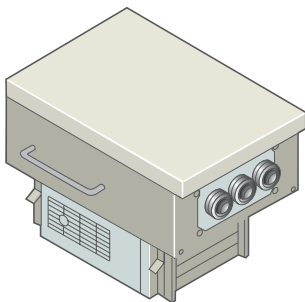
The coding bracket on the tap-off unit and on the tap-off point of the trunking unit (lock-and-key-principle) have the following functions:

- the non-interchangeability and correct arrangement of the 4-pole or 5-pole tap-off units to the respective LD systems
- They prevent the tap-off units from being installed facing the wrong way.

Tap-off units with LV HRC fuse switch-disconnectors



IP30 protection



IP54 protection

Rated currents

Tap-off units from 125 A to 630 A are available for selection. In the 125-A version it is possible to fit 1 × NH 00 or 2 × NH 00.

Thanks to the compact design of the tap-off units, only one enclosure size is required for all rated current ranges.

Degree of protection

The standard degree of protection is IP30. However, IP54 protection is also possible.

Cabling box/cable entry

Due to a bolt terminal, cables with cross-sections of up to $2 \times 240 \text{ mm}^2$ can be used. In the standard version, the cables are introduced from the front. When a cabling box is added, the cable can be introduced from the side. The cables are then clamped by the integrated cable clamp (customer clamping bracket). The split flange plate enables a simple insertion of the cable.

Opening of the tap-off unit

The cover of the coupling area can only be opened after the fuse switch-disconnector handle, and in turn, the fuse cartridge have been removed. When the cover is opened, the coupling area is no longer live. The part of the contact device in the front of the tap-off unit is "finger-proof".

Type key

LD system	No.
LDA1... to LDA3... LDC2... to LDC3...	1
LDA4.1. to LDA8.1. LDC6.1. to LDC8.1.	2
LDA4.2. to LDA8.2. LDC6.2. to LDC8.2.	3

Version	
4	4 poles
5	5 poles

	Rated current I_e [A]			
	$U_e = 400 \text{ V}$		$U_e = 690 \text{ V}$	
	IP30	IP54	IP30	IP54
31ST125	1 × 125	1 × 125	1 × 100	1 × 100
32ST125	2 × 125	2 × 100	2 × 100	2 × 100
3ST250	1 × 250	1 × 200	1 × 200	1 × 200
3ST400	1 × 400	1 × 315	1 × 315	1 × 315
3ST630	1 × 630	1 × 500	1 × 500 (630) ¹⁾	1 × 500

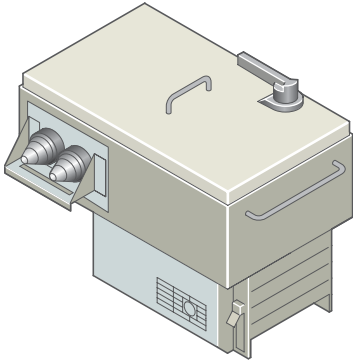
LD-K- □ AK □ / □ □ □ □ □

¹⁾ When using fuse links manufactured by Jean Müller, please refer to the Technical data.

Busbar trunking system LDA/LDC

System components

Tap-off unit with low-voltage switch-disconnector



IP54 protection

Rated currents

Two tap-off units for 400 A and 630 A are available.

Degree of protection

The standard degree of protection is IP54. In this version, the tap-off unit is supplied complete with a door.

Cabling box/cable entry

Due to a bolt terminal, cables with cross-sections of up to $2 \times 4 \times 240 \text{ mm}^2$. The cable entry can be fitted on both sides. An Aluminium plate equipped with metrical cable glands is included with a single-core cable entry.

Arc fault protection

The tap-off units are protected against an arc-fault. Proof of the arc-fault test to IEC 439-1 pp 2, EN 60439-1 pp 2, VDE 0660 part 500 pp 2 has been provided and will be confirmed by an accompanying test report.

Type key

LD system	No.
LDA1... to LDA3... LDC2... to LDC3...	1
LDA4.1. to LDA8.1. LDC6.1. to LDC8.1.	2
LDA4.2. to LDA8.2. LDC6.2. to LDC8.2.	3

Version	
4	4 poles
5	5 poles

Rated current I_e [A]	Rated current I_e [A]	
	$U_e = 400 \text{ V}$	$U_e = 690 \text{ V}$
400	355	355
630	on request	on request

LD-K- □ AK □/FS-□□□-KSY

Tap-off units with circuit-breakers

Tap-off units equipped with circuit-breakers permit selection of switching capacity, number of active poles, type of control and the possibility of messages:

- The offer covers rated currents from 80 A to 1250 A.
- 3-pole or 4-pole versions are available.
- The switching capacity can be selected as normal, medium and high (see technical data).

Circuit-breakers with manual actuation

This version of the tap-off unit includes a circuit-breaker which can be externally manually actuated using a handle.

Degree of protection
The tap-off unit offers IP54 protection.

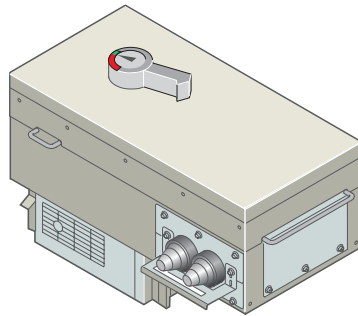
Messages

In this variant a standard auxiliary contact (NHI) and a trip-indicating auxiliary contact (RHI) are installed.

The contact area and copper contacts to the circuit-breaker are enclosed for maximum "finger safety". The cover can only be opened when the switch is deactivated. This ensures that the connected load is not live when the cover is open.

The outgoing cables of the loads are connected to the circuit-breaker or optionally to terminals (i.e. in this case the outgoing cables are prepared for later connection to a circuit-breaker). The PE or PEN conductor is connected to a bolt terminal depending on the cross-section. Single-core and multicore cables can be introduced from the side or the front. The split flange plate enables a simple insertion of the cable.

Circuit-breaker with remote operator



This version comes with both a circuit-breaker and remote control unit. Terminals with the messages ON, OFF and TRIPPED are also available for the user.

The user can also choose between an under-voltage trip and shunt trip, depending on the application. The actuating voltage of the motor drive can also be adjusted. The connectors of the remote control system can either be connected directly or to the terminals.

The feeder area and copper contacts to the circuit-breaker are enclosed for maximum "finger safety". The outgoing cables on the loads are connected in the same manner as the manual actuation variant.

Tap-off unit for up to 800 A

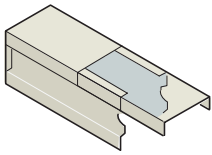
I_e A	U_e V	Version, setting range	Type
80	400	circuit-breaker, 63 to 80 A	LD-K-AK/L80
125	400	circuit-breaker, 80 to 125 A	LD-K-AK/L125
160	400	circuit-breaker, 125 to 160 A	LD-K-AK/L160
250	400	circuit-breaker, 160 to 250 A	LD-K-AK/L250
400	400	circuit-breaker, 250 to 400 A	LD-K-AK/L400
570	400	circuit-breaker, 400 to 630 A	LD-K-AK/L630
800	400	circuit-breaker, 630 to 800 A	LD-K-AK/L800

Higher rated currents (up to 1250 A) available on request.

Busbar trunking system LDA/LDC

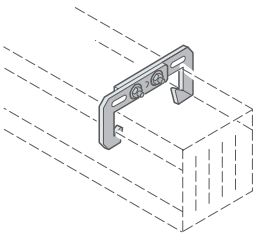
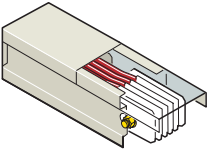
System components

Accessories



End flange

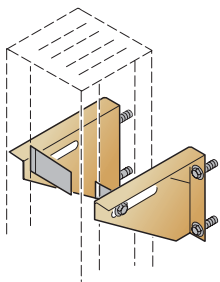
Depending on the version of trunking unit, and end flange with hook or bolts has to be positioned at the end of the busbar run.



Fixing bracket

The LD-B1/B2 suspension bracket is used for securing a busbar trunking system in a horizontal mounting position:

- B1 for the enclosure dimension
180 mm × 180 mm
- B2 for the enclosure dimension
240 mm × 180 mm



Mounting bracket

If the LD system is installed vertically, the LD-BV mounting bracket is used (fixing intervals see dimensions).

Trunking units

LDA/LDC-Systems

Standards and regulations		IEC/EN 60 439-1 and -2, DIN VDE 0660 Part 500 and Part 502
Climatic proofing		Damp heat, constant to IEC 60 068-2-78 Damp heat, cyclic to IEC 60 068-2-30
Ambient temperature min./max./mean level over 24 hours	°C	-5/+40/+35
Degree of protection		IP31 ventilated (horizontal busbar flat) IP34 ventilated (horizontal busbar edgewise) IP54 closed
Standard mounting position		Busbars edgewise in the system
Torque for single-bolt clamp terminal	Nm	80
Busbar surface treatment		Insulated, tin-on-nickel plated: LDA; tin plated: LDC
Material, trunking units, tap-off units		Powder spray paint finished steel enclosure
Colour, trunking units, tap-off units		RAL 7035 (light grey)
Dimensions		See Dimensions Section
Weight		See Weights Section
Rated insulation voltage	V~	1000
to DIN VDE 0110	V~	1200
Overvoltage category/pollution degree		III/3 to EN 60 947, IV/3 for power transmission to EN 60 947
Rated operational voltage	V~	1000 for overvoltage category III/3, 690 for overvoltage category IV/3
Rated frequency	Hz	16 ² / ₃ ... 60

Busbar trunking system LDA/LDC

Technical data

LDA.4.. (4-pole, Aluminium)

System-dependent data				LDA142.	LDA242.	LDA342.	LDA441.	LDA442.	LDA541.	LDA542.
				PEN = L	PEN = L	PEN = L	PEN = ½ L	PEN = L	PEN = ½ L	PEN = L
Rated current I_e¹⁾										
Horizontal/edgewise ²⁾	IP34	I_e	A	1100	1250	1600	2000	2000	2500	2500
	IP54	I_e	A	900	1000	1200	1500	1500	1800	1800
Vertical	IP34	I_e	A	950	1100	1250	1700	1700	2100	2100
	IP54	I_e	A	900	1000	1200	1500	1500	1800	1800
Horizontal/flat	IP31/IP54	I_e	A	700	750	1000	1200	1200	1700	1700
Impedance										
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.073	0.047	0.047	0.037	0.037	0.023	0.024
	Reactance	X'_{20}	mΩ/m	0.045	0.043	0.043	0.025	0.030	0.023	0.030
	Impedance	Z'_{20}	mΩ/m	0.086	0.064	0.064	0.044	0.047	0.033	0.038
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.086	0.054	0.057	0.043	0.044	0.027	0.028
	Reactance	X'	mΩ/m	0.046	0.043	0.043	0.025	0.029	0.023	0.029
	Impedance	Z'	mΩ/m	0.098	0.069	0.072	0.049	0.053	0.036	0.041
of the conductors for 4-pole systems during a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.143	0.106	0.106	0.106	0.081	0.075	0.055
	Reactance	X'_F	mΩ/m	0.166	0.178	0.178	0.103	0.116	0.109	0.115
	Impedance	Z'_F	mΩ/m	0.219	0.207	0.207	0.147	0.142	0.132	0.128
Zero impedance										
for 4-pole systems to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.284	0.217	0.217	0.242	0.173	0.180	0.120
		X'_0	mΩ/m	0.232	0.200	0.200	0.154	0.174	0.154	0.154
		Z'_0	mΩ/m	0.366	0.295	0.295	0.286	0.246	0.237	0.195
Short-circuit rating										
Rated impulse withstand current	rms value (t = 0.1 s)	I_{CW}	kA	55	70	80	110	110	125	125
	rms value (t = 1 s)	I_{CW}	kA	40	55	58	80	80	110	110
Rated peak short-circuit withstand current	Peak value	I_{pk}	kA	121	154	176	242	242	275	275
Conductor material				Aluminium						
Number of busbars				4	4	4	7	8	7	8
Conductor cross-section	L1, L2, L3	A	mm ²	406	706	706	812	812	1412	1412
	PEN	A	mm ²	406	706	706	406	812	706	1412
Fire load										
Tap-off unit without tap-off point			kWh/m	4.16	4.16	4.16	6.73	6.73	6.73	6.73
Per tap-off point			kWh	7.80	7.80	7.80	10.80	10.80	10.80	10.80
Fixing interval, max.										
For normal mechanical loading			m	6	6	6	5	5	5	5

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

LDA.4.. (4-pole, Aluminium)

System-dependent data				LDA641.	LDA642.	LDA741.	LDA742.	LDA841.	LDA842.
				PEN = ½ L	PEN = L	PEN = ½ L	PEN = L	PEN = ½ L	PEN = L
Rated current $I_e^{1)}$									
Horizontal/edgewise ²⁾	IP34	I_e	A	3000	3000	3700	3700	4000	4000
	IP54	I_e	A	2000	2000	2400	2400	2700	2700
Vertical	IP34	I_e	A	2300	2300	2800	2800	3400	3400
	IP54	I_e	A	2000	2000	2400	2400	2700	2700
Horizontal/flat	IP31/IP54	I_e	A	1800	1800	2200	2200	2350	2350
Impedance									
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.023	0.024	0.017	0.016	0.015	0.013
	Reactance	X'_{20}	mΩ/m	0.023	0.029	0.019	0.022	0.017	0.019
	Impedance	Z'_{20}	mΩ/m	0.033	0.037	0.026	0.027	0.023	0.023
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.030	0.029	0.021	0.020	0.018	0.016
	Reactance	X'	mΩ/m	0.024	0.029	0.019	0.022	0.017	0.019
	Impedance	Z'	mΩ/m	0.038	0.041	0.029	0.030	0.025	0.025
of the conductors for 4-pole systems at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.075	0.056	0.055	0.041	0.049	0.038
	Reactance	X'_F	mΩ/m	0.109	0.119	0.083	0.093	0.086	0.080
	Impedance	Z'_F	mΩ/m	0.132	0.131	0.099	0.101	0.099	0.088
Zero impedance									
for 4-pole systems to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.180	0.120	0.126	0.090	0.110	0.075
		X'_0	mΩ/m	0.154	0.153	0.097	0.119	0.086	0.087
		Z'_0	mΩ/m	0.237	0.194	0.159	0.149	0.140	0.115
Short-circuit rating									
Rated impulse withstand current	rms value (t = 0.1 s)	I_{cw}	kA	130	130	130	130	130	130
	rms value (t = 1 s)	I_{cw}	kA	116	116	116	116	116	116
Rated peak short-circuit withstand current	Peak value	I_{pk}	kA	286	286	286	286	286	286
Conductor material				Aluminium					
Number of busbars				7	8	7	8	7	8
Conductor cross-section	L1, L2, L3	A	mm ²	1412	1412	2044	2044	2464	2464
	PEN	A	mm ²	706	1412	1022	2044	1232	2464
Fire load									
Tap-off unit without tap-off point			kWh/m	6.73	6.73	7.99	7.99	8.83	8.83
Per tap-off point			kWh	10.80	10.80	10.80	10.80	10.80	10.80
Fixing interval, max.									
For normal mechanical loading			m	5	5	5	5	5	5

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

Busbar trunking system LDA/LDC

Technical data

LDA.6.. (5-pole, Aluminium)

System-dependent data				LDA162.	LDA262.	LDA362.	LDA461.	LDA462.	LDA561.	LDA562.
				N = L	N = L	N = L	N = ½ L	N = L	N = ½ L	N = L
Rated current $I_e^{1)}$										
Horizontal/edgewise ²⁾	IP34	I_e	A	1100	1250	1600	2000	2000	2500	2500
	IP54	I_e	A	900	1000	1200	1500	1500	1800	1800
Vertical	IP34	I_e	A	950	1100	1250	1700	1700	2100	2100
	IP54	I_e	A	900	1000	1200	1500	1500	1800	1800
Horizontal/flat	IP31/IP54	I_e	A	700	750	1000	1200	1200	1700	1700
Impedance										
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.075	0.048	0.048	0.036	0.036	0.023	0.025
	Reactance	X'_{20}	mΩ/m	0.043	0.043	0.043	0.025	0.029	0.024	0.031
	Impedance	Z'_{20}	mΩ/m	0.086	0.064	0.064	0.044	0.046	0.033	0.040
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.088	0.054	0.059	0.042	0.043	0.028	0.029
	Reactance	X'	mΩ/m	0.045	0.043	0.042	0.025	0.030	0.024	0.031
	Impedance	Z'	mΩ/m	0.099	0.069	0.072	0.049	0.052	0.037	0.042
of the conductors for 5-pole systems (PE) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.150	0.108	0.108	0.129	0.119	0.092	0.084
	Reactance	X'_F	mΩ/m	0.204	0.201	0.201	0.142	0.138	0.134	0.131
	Impedance	Z'_F	mΩ/m	0.253	0.228	0.228	0.192	0.182	0.163	0.156
of the conductors for 5-pole systems (N) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.156	0.108	0.108	0.112	0.083	0.076	0.056
	Reactance	X'_F	mΩ/m	0.173	0.173	0.173	0.108	0.113	0.106	0.114
	Impedance	Z'_F	mΩ/m	0.233	0.204	0.204	0.155	0.140	0.130	0.127
Zero impedance										
for 5-pole systems (PE) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.315	0.240	0.240	0.301	0.292	0.217	0.213
		X'_0	mΩ/m	0.401	0.393	0.393	0.267	0.291	0.202	0.265
		Z'_0	mΩ/m	0.510	0.460	0.460	0.402	0.412	0.297	0.340
for 5-pole systems (N) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.339	0.231	0.231	0.267	0.179	0.181	0.121
		X'_0	mΩ/m	0.245	0.219	0.219	0.144	0.165	0.128	0.167
		Z'_0	mΩ/m	0.418	0.319	0.319	0.303	0.243	0.221	0.206

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

LDA.6.. (5-pole, Aluminium)

System-dependent data				LDA162.	LDA262.	LDA362.	LDA461.	LDA462.	LDA561.	LDA562.
				N = L	N = L	N = L	N = ½ L	N = L	N = ½ L	N = L
Short-circuit rating										
Rated impulse withstand current	rms value (t = 0.1 s)	I_{cw}	kA	55	70	80	110	110	125	125
	rms value (t = 1 s)	I_{cw}	kA	40	55	58	80	80	110	110
Rated peak short-circuit withstand current	Peak value	I_{pk}	kA	121	154	176	242	242	275	275
Rated impulse withstand current of 5th conductor	rms value (t = 0.1 s)	I_{cw}	kA	33	42	48	66	66	75	75
	rms value (t = 1 s)	I_{cw}	kA	24	33	35	48	48	66	66
Conductor material				Aluminium						
Number of busbars				5	5	5	8	9	8	9
Conductor cross-section	L1, L2, L3	A	mm ²	406	706	706	812	812	1412	1412
	N	A	mm ²	406	706	706	406	812	706	1412
	PE	A	mm ²	406	706	706	406	406	706	706
Fire load										
Tap-off unit without tap-off point			kWh/m	4.16	4.16	4.16	6.73	6.73	6.73	6.73
Per tap-off point			kWh	7.80	7.80	7.80	10.80	10.80	10.80	10.80
Fixing interval, max.										
For normal mechanical loading			m	6	6	6	5	5	5	5

Busbar trunking system LDA/LDC

Technical data

LDA.6.. (5-pole, Aluminium)

System-dependent data				LDA661.	LDA662.	LDA761.	LDA762.	LDA861.	LDA862.
				N = ½ L	N = L	N = ½ L	N = L	N = ½ L	N = L
Rated current $I_e^{1)}$									
Horizontal/edgewise ²⁾	IP34	I_e	A	3000	3000	3700	3700	4000	4000
	IP54	I_e	A	2000	2000	2400	2400	2700	2700
Vertical	IP34	I_e	A	2300	2300	2800	2800	3400	3400
	IP54	I_e	A	2000	2000	2400	2400	2700	2700
Horizontal/flat	IP31/IP54	I_e	A	1800	1800	2200	2200	2350	2350
Impedance									
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.023	0.023	0.017	0.018	0.014	0.015
	Reactance	X'_{20}	mΩ/m	0.024	0.029	0.019	0.025	0.022	0.021
	Impedance	Z'_{20}	mΩ/m	0.033	0.037	0.026	0.030	0.026	0.026
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.029	0.030	0.020	0.021	0.017	0.018
	Reactance	X'	mΩ/m	0.024	0.031	0.020	0.025	0.021	0.021
	Impedance	Z'	mΩ/m	0.037	0.043	0.028	0.033	0.027	0.027
of the conductors for 5-pole systems (PE) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.092	0.084	0.068	0.065	0.055	0.056
	Reactance	X'_F	mΩ/m	0.134	0.133	0.110	0.114	0.102	0.105
	Impedance	Z'_F	mΩ/m	0.163	0.157	0.129	0.131	0.116	0.119
of the conductors for 5-pole systems (N) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.076	0.057	0.053	0.042	0.049	0.037
	Reactance	X'_F	mΩ/m	0.106	0.113	0.080	0.091	0.084	0.086
	Impedance	Z'_F	mΩ/m	0.130	0.127	0.096	0.100	0.097	0.094
Zero impedance									
for 5-pole systems (PE) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.217	0.212	0.163	0.166	0.145	0.146
		X'_0	mΩ/m	0.202	0.263	0.175	0.220	0.196	0.196
		Z'_0	mΩ/m	0.297	0.338	0.240	0.275	0.243	0.244
for 5-pole systems (N) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.181	0.122	0.130	0.089	0.115	0.079
		X'_0	mΩ/m	0.128	0.155	0.102	0.093	0.095	0.100
		Z'_0	mΩ/m	0.221	0.198	0.165	0.129	0.149	0.127

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

LDA.6.. (5-pole, Aluminium)

System-dependent data				LDA661.	LDA662.	LDA761.	LDA762.	LDA861.	LDA862.
				N = ½ L	N = L	N = ½ L	N = L	N = ½ L	N = L
Short-circuit rating									
Rated impulse withstand current	rms value (t = 0.1 s)	I_{CW}	kA	130	130	130	130	130	130
	rms value (t = 1 s)	I_{CW}	kA	116	116	116	116	116	116
Rated peak withstand current	Peak value	I_k	kA	286	286	286	286	286	286
Rated impulse withstand current of 5th conductor	rms value (t = 0.1 s)	I_{CW}	kA	78	78	78	78	78	78
	rms value (t = 1 s)	I_{CW}	kA	70	70	70	70	70	70
Conductor material				Aluminium					
Number of busbars				8	9	8	9	8	9
Conductor cross-section	L1, L2, L3	A	mm ²	1412	1412	2044	2044	2464	2464
	N	A	mm ²	706	1412	1022	2044	1232	2464
	PE	A	mm ²	706	706	1022	1022	1232	1232
Fire load									
Tap-off unit without tap-off point			kWh/m	6.73	6.73	7.99	7.99	8.83	8.83
Per tap-off point			kWh	10.80	10.80	10.80	10.80	10.80	10.80
Fixing interval, max.									
For normal mechanical loading			m	5	5	5	5	5	5

Busbar trunking system LDA/LDC

Technical data

LDC.4.. (4-pole, Copper)

System-dependent data				LDC242.	LDC342.	LDC641.	LDC642.
				PEN = L	PEN = L	PEN = 1/2 L	PEN = L
Rated current $I_e^{1)}$							
Horizontal/edgewise ²⁾	IP34	I_e	A	2000	2600	3400	3400
	IP54	I_e	A	1600	2000	2600	2600
Vertical	IP34	I_e	A	1650	2100	2700	2700
	IP54	I_e	A	1600	2000	2600	2600
Horizontal/flat	IP31/IP54	I_e	A	1200	1550	2000	2000
Impedance							
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.030	0.026	0.015	0.015
	Reactance	X'_{20}	mΩ/m	0.042	0.035	0.026	0.026
	Impedance	Z'_{20}	mΩ/m	0.052	0.043	0.030	0.030
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.037	0.028	0.017	0.018
	Reactance	X'	mΩ/m	0.042	0.036	0.026	0.027
	Impedance	Z'	mΩ/m	0.056	0.046	0.031	0.032
of the conductors at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.075	0.056	0.048	0.037
	Reactance	X'_F	mΩ/m	0.170	0.163	0.107	0.107
	Impedance	Z'_F	mΩ/m	0.186	0.173	0.117	0.113
Zero impedance							
to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.144	0.114	0.116	0.079
		X'_0	mΩ/m	0.199	0.225	0.124	0.130
		Z'_0	mΩ/m	0.246	0.252	0.169	0.152
Short-circuit rating							
Rated impulse withstand current	rms value (t = 0.1 s)	I_{cw}	kA	80	80	130	130
	rms value (t = 1 s)	I_{cw}	kA	58	58	116	116
Rated peak withstand current	Peak value	I_{pk}	kA	176	176	286	286
Conductor material				Copper			
Number of busbars				4	4	7	8
Conductor cross-section	L1, L2, L3	A	mm ²	706	1022	1412	1412
	PEN	A	mm ²	706	1022	706	1412
Fire load							
Tap-off unit without tap-off point			kWh/m	4.16	4.88	6.73	6.73
Per tap-off point			kWh	7.80	7.80	10.80	10.80
Fixing interval, max.							
For normal mechanical loading			m	5	4	4	4

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

LDC.4.. (4-pole, Copper)

System-dependent data				LDC741.	LDC742.	LDC841.	LDC842.
				PEN = ½ L	PEN = L	PEN = ½ L	PEN = L
Rated current $I_e^{1)}$							
Horizontal/edgewise ²⁾	IP34	I_e	A	4400	4400	5000	5000
	IP54	I_e	A	3200	3200	3600	3600
Vertical	IP34	I_e	A	3500	3500	4250	4250
	IP54	I_e	A	3200	3200	3600	3600
Horizontal/flat	IP31/IP54	I_e	A	2600	2600	3000	3000
Impedance							
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.012	0.012	0.008	0.009
	Reactance	X'_{20}	mΩ/m	0.023	0.021	0.021	0.018
	Impedance	Z'_{20}	mΩ/m	0.026	0.024	0.022	0.020
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.012	0.013	0.011	0.011
	Reactance	X'	mΩ/m	0.023	0.022	0.020	0.018
	Impedance	Z'	mΩ/m	0.026	0.025	0.023	0.021
of the conductors at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.036	0.027	0.031	0.026
	Reactance	X'_F	mΩ/m	0.090	0.086	0.073	0.080
	Impedance	Z'_F	mΩ/m	0.097	0.090	0.079	0.085
Zero impedance							
to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.083	0.056	0.070	0.050
		X'_0	mΩ/m	0.072	0.093	0.088	0.106
		Z'_0	mΩ/m	0.109	0.109	0.113	0.118
Short-circuit rating							
Rated impulse withstand current	rms value (t = 0.1 s)	I_{CW}	kA	130	130	130	130
	rms value (t = 1 s)	I_{CW}	kA	116	116	116	116
Rated peak short-circuit withstand current	Peak value	I_{pk}	kA	286	286	286	286
Conductor material				Copper			
Number of busbars				7	8	7	8
Conductor cross-section	L1, L2, L3	A	mm ²	2044	2044	2464	2464
	PEN	A	mm ²	1022	2044	1232	2464
Fire load							
Tap-off unit without tap-off point			kWh/m	7.99	7.99	8.83	8.83
Per tap-off point			kWh	10.80	10.80	10.80	10.80
Fixing interval, max.							
For normal mechanical loading			m	3	3	2	2

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

Busbar trunking system LDA/LDC

Technical data

LDC.6.. (5-pole, Copper)

System-dependent data				LDC262.	LDC362.	LDC661.	LDC662.
				N = L	N = L	N = ½ L	N = L
Rated current I_e¹⁾							
Horizontal/edgewise ²⁾	IP34	I_e	A	2000	2600	3400	3400
	IP54	I_e	A	1600	2000	2600	2600
Vertical	IP34	I_e	A	1650	2100	2700	2700
	IP54	I_e	A	1600	2000	2600	2600
Horizontal/flat	IP31/IP54	I_e	A	1200	1550	2000	2000
Impedance							
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.036	0.029	0.015	0.017
	Reactance	X'_{20}	mΩ/m	0.043	0.037	0.027	0.027
	Impedance	Z'_{20}	mΩ/m	0.056	0.047	0.031	0.032
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.037	0.031	0.017	0.018
	Reactance	X'	mΩ/m	0.043	0.038	0.028	0.028
	Impedance	Z'	mΩ/m	0.057	0.049	0.033	0.034
of the conductors for 5-pole systems (PE) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.081	0.060	0.062	0.058
	Reactance	X'_F	mΩ/m	0.204	0.186	0.139	0.124
	Impedance	Z'_F	mΩ/m	0.220	0.195	0.153	0.137
of the conductors for 5-pole systems (PE) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.078	0.059	0.048	0.037
	Reactance	X'_F	mΩ/m	0.193	0.149	0.110	0.105
	Impedance	Z'_F	mΩ/m	0.208	0.160	0.120	0.112
Zero impedance							
for 5-pole systems (PE) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.179	0.134	0.149	0.149
		X'_0	mΩ/m	0.387	0.357	0.238	0.248
		Z'_0	mΩ/m	0.426	0.381	0.281	0.289
for 5-pole systems Systems (N) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.150	0.110	0.119	0.080
		X'_0	mΩ/m	0.189	0.180	0.145	0.135
		Z'_0	mΩ/m	0.241	0.211	0.187	0.157

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

LDC.6.. (5-pole, Copper)

System-dependent data				LDC262.	LDC362.	LDC661.	LDC662.
				N = L	N = L	N = ½ L	N = L
Short-circuit rating							
Rated impulse withstand current	rms value (t = 0.1 s)	I_{CW}	kA	80	80	130	130
	rms value (t = 1 s)	I_{CW}	kA	58	58	116	116
Rated peak short-circuit withstand current	Peak value	I_{pk}	kA	176	176	286	286
Rated impulse withstand current of 5th conductor	rms value (t = 0.1 s)	I_{CW}	kA	48	48	78	78
	rms value (t = 1 s)	I_{CW}	kA	35	35	70	70
Conductor material				Copper			
Number of busbars				5	5	8	9
Conductor cross-section	L1, L2, L3	A	mm ²	706	1022	1412	1412
	N	A	mm ²	706	1022	706	1412
	PE	A	mm ²	706	1022	706	706
Fire load							
Tap-off unit without tap-off point			kWh/m	4.16	4.88	6.73	6.73
Per tap-off point			kWh	7.80	7.80	10.80	10.80
Fixing interval, max.							
For normal mechanical loading			m	5	4	4	4

Busbar trunking system LDA/LDC

Technical data

LDC.6.. (5-pole, Copper)

System-dependent data				LDC761.	LDC762.	LDC861.	LDC862.
				N = ½ L	N = L	N = ½ L	N = L
Rated current I_e¹⁾							
Horizontal/edgewise ²⁾	IP34	I_e	A	4400	4400	5000	5000
	IP54	I_e	A	3200	3200	3600	3600
Vertical	IP34	I_e	A	3500	3500	4250	4250
	IP54	I_e	A	3200	3200	3600	3600
Horizontal/flat	IP31/IP54	I_e	A	2600	2600	3000	3000
Impedance							
of the conductors at 50 Hz and +20 °C busbar temperature	Resistance	R'_{20}	mΩ/m	0.011	0.014	0.012	0.012
	Reactance	X'_{20}	mΩ/m	0.023	0.021	0.018	0.020
	Impedance	Z'_{20}	mΩ/m	0.025	0.025	0.022	0.023
of the conductor at 50 Hz and at operational temperature of the busbars	Resistance	R'	mΩ/m	0.013	0.015	0.013	0.013
	Reactance	X'	mΩ/m	0.024	0.022	0.020	0.020
	Impedance	Z'	mΩ/m	0.027	0.027	0.024	0.024
of the conductors for 5-pole systems (PE) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.048	0.050	0.045	0.048
	Reactance	X'_F	mΩ/m	0.118	0.133	0.123	0.119
	Impedance	Z'_F	mΩ/m	0.127	0.142	0.131	0.128
of the conductors for 5-pole systems (N) at a fault to EN 60439-2	Resistance	R'_F	mΩ/m	0.038	0.027	0.031	0.025
	Reactance	X'_F	mΩ/m	0.092	0.089	0.082	0.079
	Impedance	Z'_F	mΩ/m	0.100	0.093	0.088	0.083
Zero impedance							
for 5-pole systems (PE) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.116	0.100	0.103	0.103
		X'_0	mΩ/m	0.186	0.216	0.188	0.184
		Z'_0	mΩ/m	0.219	0.238	0.214	0.211
for 5-pole systems (N) to DIN VDE 0102, IEC 909		R'_0	mΩ/m	0.087	0.058	0.072	0.050
		X'_0	mΩ/m	0.105	0.112	0.093	0.091
		Z'_0	mΩ/m	0.137	0.126	0.118	0.104

¹⁾ depending on the degree of protection and laying method

²⁾ including height adjustments ≤ 1.3 m

LDC.6.. (5-pole, Copper)

System-dependent data				LDC761.	LDC762.	LDC861.	LDC862.
				N = ½ L	N = L	N = ½ L	N = L
Short-circuit rating							
Rated impulse withstand current	rms value (t = 0.1 s)	I_{CW}	kA	130	130	130	130
	rms value (t = 1 s)	I_{CW}	kA	116	116	116	116
Rated peak short-circuit withstand current	Peak value	I_{pk}	kA	286	286	286	286
Rated impulse withstand current of 5th conductor	rms value (t = 0.1 s)	I_{CW}	kA	78	78	78	78
	rms value (t = 1 s)	I_{CW}	kA	70	70	70	70
Conductor material				Copper			
Number of busbars				8	9	8	9
Conductor cross-section	L1, L2, L3	A	mm ²	2044	2044	2464	2464
	N	A	mm ²	1022	2044	1232	2464
	PE	A	mm ²	1022	1022	1232	1232
Fire load							
Tap-off unit without tap-off point			kWh/m	7.99	7.99	8.83	8.83
Per tap-off point			kWh	10.80	10.80	10.80	10.80
Fixing interval, max.							
For normal mechanical loading			m	3	3	2	2

Busbar trunking system LDA/LDC

Technical data

Feeder units

Adapters for connection to non-Siemens distribution boards, required cable cross-section

	Required cable cross-section	LDA/LDC system for connection
LDA2420-FA1	Cu 80 × 10	LDA142. and LDA242.
LDA2620-FA1	Cu 80 × 10	LDA162. and LDA262.
LDA3420-FA1	Cu 100 × 10	LDA342.
LDA3620-FA1	Cu 100 × 10	LDA362.
LDA5410-FA1	Cu 200 × 10	LDA441. and LDA541.
LDA5610-FA1	Cu 200 × 10	LDA461. and LDA561.
LDA7410-FA1	Cu 2 × 120 × 10	LDA641. and LDA741.
LDA7610-FA1	Cu 2 × 120 × 10	LDA661. and LDA761.
LDA8410-FA1	Cu 2 × 200 × 10	LDA841.
LDA8610-FA1	Cu 2 × 200 × 10	LDA861.
LDA5420-FA1	Cu 200 × 10	LDA442. and LDA542.
LDA5620-FA1	Cu 200 × 10	LDA462. and LDA562.
LDA7420-FA1	Cu 2 × 120 × 10	LDA642. and LDA742.
LDA7620-FA1	Cu 2 × 120 × 10	LDA662. and LDA762.
LDA8420-FA1	Cu 2 × 200 × 10	LDA842.
LDA8620-FA1	Cu 2 × 200 × 10	LDA862.
LDC2420-FA1	Cu 160 × 10	LDC241.
LDC2620-FA1	Cu 160 × 10	LDC262.
LDC3420-FA1	Cu 2 × 100 × 10	LDC342.
LDC3620-FA1	Cu 2 × 100 × 10	LDC362.
LDC6410-FA1	Cu 2 × 160 × 10	LDC641.
LDC6420-FA1	Cu 2 × 160 × 10	LDC642.
LDC6610-FA1	Cu 2 × 160 × 10	LDC661.
LDC6620-FA1	Cu 2 × 160 × 10	LDC662.
LDC7410-FA1	Cu 2 × 200 × 10	LDC741.
LDC7420-FA1	Cu 2 × 200 × 10	LDC742.
LDC7610-FA1	Cu 2 × 200 × 10	LDC761.
LDC7620-FA1	Cu 2 × 200 × 10	LDC762.
LDC8410-FA1	Cu 3 × 200 × 10	LDC841.
LDC8420-FA1	Cu 3 × 200 × 10	LDC842.
LDC8610-FA1	Cu 3 × 200 × 10	LDC861.
LDC8620-FA1	Cu 3 × 200 × 10	LDC862.

Tap-off units

Tap-off units with LV HRC fuse switch-disconnectors

Standards and regulations		IEC/EN 60439-1 and -2, DIN VDE 0660 part 500 and 502				
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 damp heat, cyclic to IEC 60068-2-30				
Ambient temperature min./max./24 hour average	°C	-5/40/35				
Degree of protection		IP30 standard, IP54 with retrofit kit				
Cable entry						
Multicore cable With cabling box for lateral introduction of the cable		3 cable grommets (KT 4) for cable diameter from 14 to 68 mm 3 cable grommets (KT 4) for cable diameters from 14 to 68 mm				
Single-core cable		Aluminium plate, undrilled for cable glands 10 × PG 29				
Terminal capacity (copper)		NH00 (125 A)	NH1 (250 A)	NH2 (400 A)	NH3 (630 A)	
Bolt connection		M8	M10	M10	M10	
L1, L2, L3	mm ²	min. 1 × 10	min. 1 × 25	min. 1 × 25	min. 1 × 25	
	mm ²	max. 1 × 95	max. 1 × 150	max. 1 × 240	max. 2 × 240	
N/PEN/PE	mm ²	min. 1 × 10	min. 1 × 25	min. 1 × 25	min. 1 × 25	
	mm ²	max. 1 × 95	max. 1 × 150	max. 1 × 240	max. 2 × 240	
Colour, tap-off units		RAL 7035, light grey				
Dimensions		see Dimensions section				
Weights		see Weights section				
Material, tap-off units		Galvanized steel with paint finish				
Rated insulation voltage U_i	V~	690				
	V-	800				
Overvoltage category/pollution degree		III/3				
Rated frequency	Hz	50				
Rated operational voltage U_e		V~	400	400	690	690
Rated current I_e with degree of protection			IP30	IP54	IP30	IP54
	NH00	A	125	125	100	100
	2 × NH00	A	2 × 125	2 × 100	2 × 100	2 × 100
	NH1	A	250	200	200	200
	NH2	A	400	315	315	315
	NH3	A	630	500	500 (630) ¹⁾	500
Switching capacity of the fitted fuse switch-disconnector to IEC/EN 60947-3		AC-22 B		AC-22 B		
Short-circuit rating for protection by fuses I_p ²⁾		kA	120			

¹⁾ 630A when using Jean-Müller fuse cartridges, order type M3 gL 630/69, Article-No. N306900

²⁾ Information applies to Jean Müller fuse links, utilization category gL.

Busbar trunking system LDA/LDC

Technical data

Tap-off unit with low-voltage switch-disconnector

Standards and regulations	IEC/EN 60439-1 and -2, DIN VDE 0660 part 500 and 502		
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 damp heat, cyclic to IEC 60068-2-30		
Ambient temperature min./max./24 hour average	°C	-5/40/35	
Degree of protection	IP54 with door		
Cable entry			
Multicore cable	2 cable grommet (size KT4) for cable diameters from 14 to 68 mm (use reduction cable glands for smaller cable diameters)		
Single-core cable	Aluminium plate, fitted with cable glands		
Number and size of cable glands	4-pole system	5-pole system	Cable diameter mm
	5 × M50	5 × M50	18 – 35
Terminal capacity (copper)			
(Terminal bolt with cable lugs)	LD-K-.AK./FS-400-KSY	LD-K-.AK./FS-630-KSY	
L1, L2, L3	mm ²	1 × 120 to 1 × 300	on request
N/PEN/PE	mm ²	1 × 120 to 1 × 300	on request
Colour, tap-off units	RAL 7035, light grey		
Dimensions	see page 4/43		
Weights	see page 4/40		
Material, tap-off units	Galvanized steel with paint finish		
Rated insulation voltage U_i	V~	690	
In accordance with VDE 0110	V-	800	
Overvoltage category/pollution degree	III/3		
Rated frequency	Hz	50	
Rated operational voltage U_e	V~	400	690
Rated current I_e	NH2 A	355	355
	NH3 A	on request	on request
Utilization category	AC-22 B AC-23 B		AC-22 B
of the fitted switch-disconnector to IEC/EN 60947-3			
Short-circuit rating	kA	110	
for protection by fuses $I_{ct}^{(1)}$			

¹⁾ Fuses: IEC 269-1-2, NF EN 60269-1, NFC 63211, NFC 63210, VDE 0636-1, DIN 43620

Tap-off units with circuit-breakers

Standards and regulations	IEC/EN 60439-1 and -2, DIN VDE 0660 part 500 and 502					
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 damp heat, cyclic to IEC 60068-2-30					
Ambient temperature	°C	-5/40/35 (min./max./24 hour average)				
Degree of protection	IP54 Standard					
Cable entry						
Multicore cable (lateral cable introduction)	2 cable grommets (KT3) for size 1 / 2 cable grommets (KT4) for sizes 2 and 3					
Single-core cable (lateral cable introduction)	Aluminium plate, undrilled for cable glands 10 × PG 29					
Terminal capacity (copper)		Size 1	Size 1	Size 2	Size 2	Size 3
Rated current I_e	A	80 – 125	160 – 250	400	570	800 ¹⁾
Terminal bolt (for single and multicore cables)		M8	M8	M12	M12	M12
L1, L2, L3; N/PEN/PE	min. mm ²	1 × 4(5) × 16	(1)2 × (4) × (5)25	2 × (4) × 70	2 × (4) × 70	2 × (4) × 70
	max. mm ²	1 × 4(5) × 35	2 × (4) × 70 or 1 × (4) × 150	2 × (4) × 120 or 1 × (4) × 240	2 × (4) × 120 or 1 × (4) × 240	2 × (4) × 120 or 2 × (4) × 240
Colour/tap-off unit material	RAL 7035, light grey / sheet steel, galvanized with paint finish					
Dimensions L × W × H						
Tap-off units for up to 160 A	mm	600 × 424 × 320				
Tap-off units for up to 630 A	mm	900 × 424 × 417				
Tap-off units for up to 800 A	mm	1200 × 424 × 421				
Rated insulation voltage U_i	V~	400				
Overvoltage category/pollution degree	III/3					
Rated frequency	Hz	50				
Rated operational voltage U_e	V~	400				
Rated current I_e						
LD-K-AK/L80	A	80				
LD-K-AK/L125	A	125				
LD-K-AK/L160	A	160				
LD-K-AK/L250	A	250				
LD-K-AK/L400	A	400				
LD-K-AK/L630	A	570				
LD-K-AK/L800	A	800				
Rated conditional short-circuit current I_{cc}	kA	Depends on the switching capacity of the fitted circuit-breaker up to 100 kA: Normal switching capacity: 35 kA Medium switching capacity: 65 kA High switching capacity: 100 kA				

¹⁾ When the tap-off unit is suspension mounted (tap-off point at bottom), a derating of the rated current to $I_e = 720$ A must be considered.

Busbar trunking system LDA/LDC

Weights

Trunking units

Trunking units with aluminium conductors

The stated weights are the weights per meter (kg/m) for trunking units without tap-off points to degree of protection IP34.

An increase in weight of 0.6 kg/m must be allowed for trunking units with IP54 protection.

An increase in weight of 7 kg per tap-off point must be allowed for trunking units with tap-off points.

	LDA1...	LDA2...	LDA3...	LDA4...	LDA5...	LDA6...	LDA 7...	LDA8...
LDA.413	–	–	–	21.7	27.4	27.4	33.7	37.2
LDA.423	16.7	20.0	20.0	22.9	29.4	29.4	36.6	40.6
LDA.613	–	–	–	22.9	29.4	29.4	36.6	40.6
LDA.623	17.9	22.0	22.0	24.1	31.4	31.4	39.5	44.0

Trunking units with copper conductors

The stated weights are the weights per meter (kg/m) for trunking units without tap-off points to degree of protection IP34.

An increase in weight of 0.6 kg/m must be allowed for trunking units with IP54 protection.

An increase in weight of 7 kg per tap-off point must be allowed for trunking units with tap-off points.

	LDC2...	LDC3...	LDC6...	LDC7...	LDC8...
LDC.413	–	–	60.3	82.0	100.2
LDC.423	38.8	51.2	67.0	91.8	112.6
LDC.613	–	–	67.0	91.8	112.6
LDC.623	45.5	61.0	73.7	101.6	125.0

Transformer and distribution board connection units

The specified weights are the weight per unit in kg.

Aluminium			LDA6413	LDA6613	LDA7413	LDA7613	LDA8413	LDA8613
LDA.....AS1			48.2	49.8	54.1	56.0	57.6	59.8
LDA.....AS2			52.9	68.1	61.0	77.0	69.9	81.7
LDA.....AS3			57.6	78.7	67.7	89.1	72.4	94.1
LDA.....AS4			64.3	97.0	77.4	110.5	85.4	118.7

Aluminium	LDA3423	LDA3623	LDA6423	LDA6623	LDA7423	LDA7623	LDA8423	LDA8623
LDA.....AS1	32.4	33.9	50.6	52.1	57.0	59.0	61.3	63.5
LDA.....AS2	35.1	47.4	56.0	71.2	65.0	81.0	70.8	86.6
LDA.....AS3	37.8	55.6	61.3	82.3	73.0	94.4	78.3	99.9
LDA.....AS4	41.6	68.8	69.6	101.7	83.9	117.1	93.1	126.4

Copper			LDC6413	LDC6613	LDC7413	LDC7613	LDC8413	LDC 8613
LDC.....AS1			86.6	91.6	105.9	112.4	117.6	124.9
LDC.....AS2			102.4	121.0	129.0	149.0	144.9	165.8
LDC.....AS3			117.6	142.1	151.1	176.9	171.1	197.8
LDC.....AS4			139.6	175.8	182.9	220.5	209.1	247.5

Copper	LDC3423	LDC3623	LDC6423	LDC6623	LDC7423	LDC7623	LDC8423	LDC8623
LDC.....AS1	65.4	71.8	94.4	99.5	116.6	123.0	130.0	137.2
LDC.....AS2	78.6	95.7	112.5	131.2	142.9	162.9	160.8	181.7
LDC.....AS3	91.2	113.8	129.9	154.4	168.1	194.0	191.1	217.8
LDC.....AS4	103.4	141.5	153.0	191.2	204.6	242.2	234.5	272.9

Busbar trunking system LDA/LDC

Weights

Incoming cable connection

The specified weights are the weight per unit in kg.

	LDA142.	LDA162.	LDA242.	LDA262.	LDA342.	LDA362.
LD.....-KE1(2)	85	92	85	92	107	114

	LDA441.	LDA461.	LDA541.	LDA561.
LD.....-KE1(2)	115	122	135	142

	LDA442.	LDA462.	LDA542.	LDA562.
LD.....-KE1(2)	117	124	137	144

	LDC242.	LDC262.	LDC342.	LDC362.
LD.....-KE1(2)	115	122	127	134

Tap-off units

Tap-off units with LV HRC fuse switch-disconnectors

	Weight kg
LD-K-.AK./ST...	33
+LD-IP54	1.5
+BD2-1000-KR	5

Tap-off unit with circuit-breaker and manual operation

	Weight kg
LD-K-.AK./LSH...-(size 1)	37
LD-K-.AK./LSH...-(size 2)	58
LD-K-.AK./LSH...-(size 3)	93

Tap-off unit with low-voltage switch-disconnector

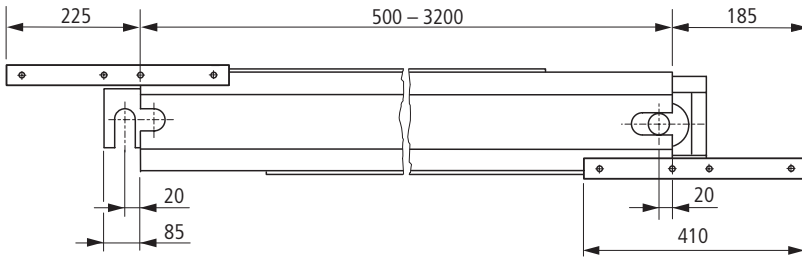
	Weight kg
LD-K-.AK./FS400-KSY	48
LD-K-.AK./FS630-KSY	on request

Tap-off unit with circuit-breaker and motor operator

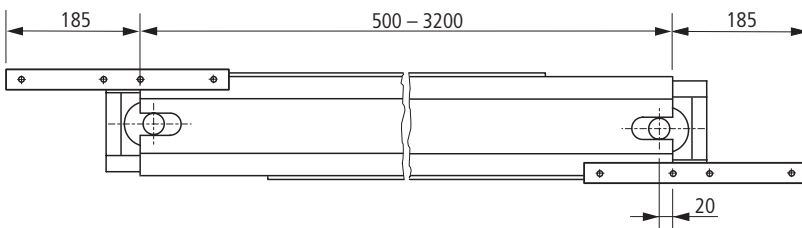
	Weight kg
LD-K-.AK./LSM...-(size 1)	38.3
LD-K-.AK./LSM...-(size 2)	63.5
LD-K-.AK./LSM...-(size 3)	100

4

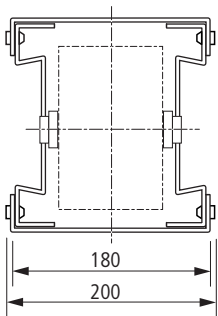
LDA(C)...-...
LDA(C)...-D-...
LDA(C)...-V-...



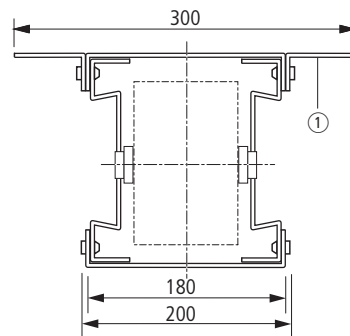
LDA(C)...-J-...



LDA(C)1... to LDA(C)3...

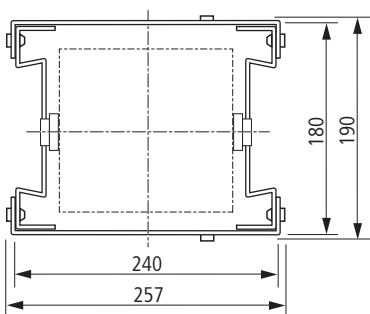


LDA(C)1...-K-... to LDA(C)3...-K-...

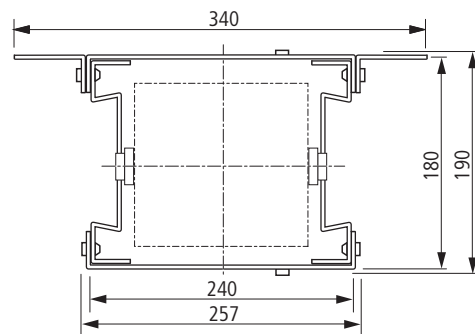


① Coding bracket (only for busbars with tap-off points)

LDA(C)4... to LDA(C)8...



LDA(C)4...-K-... to LDA(C)8...-K-...



Busbar trunking system LDA/LDC

Dimension drawings

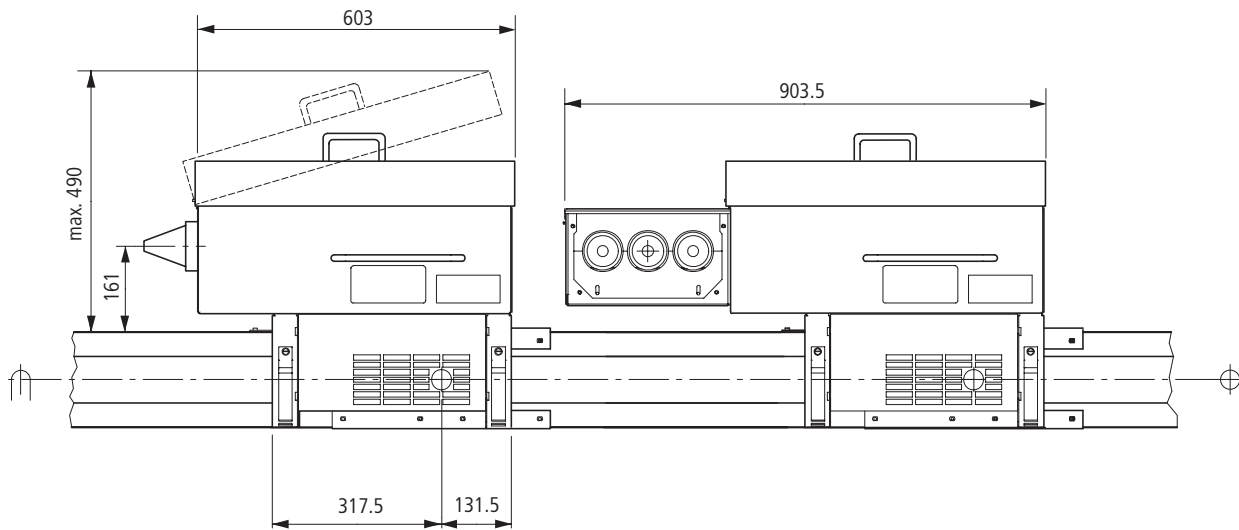
Tap-off units with LV HRC fuse switch-disconnector

LD-K-.AK./ST...

Without cabling box (front side cable introduction)

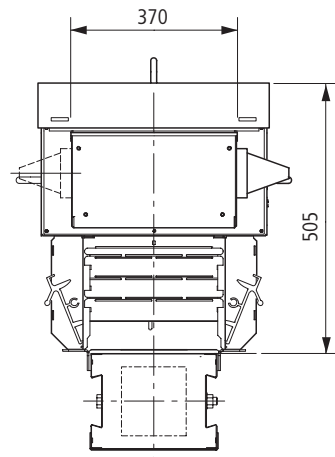
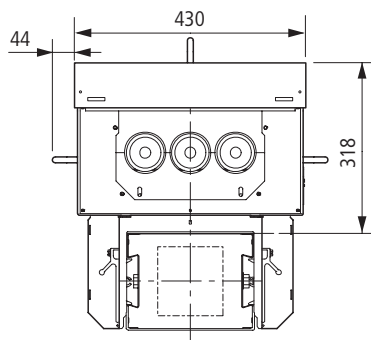
With cabling box (side cable entry)

+BD2-1000-KR



Tap-off unit fitted

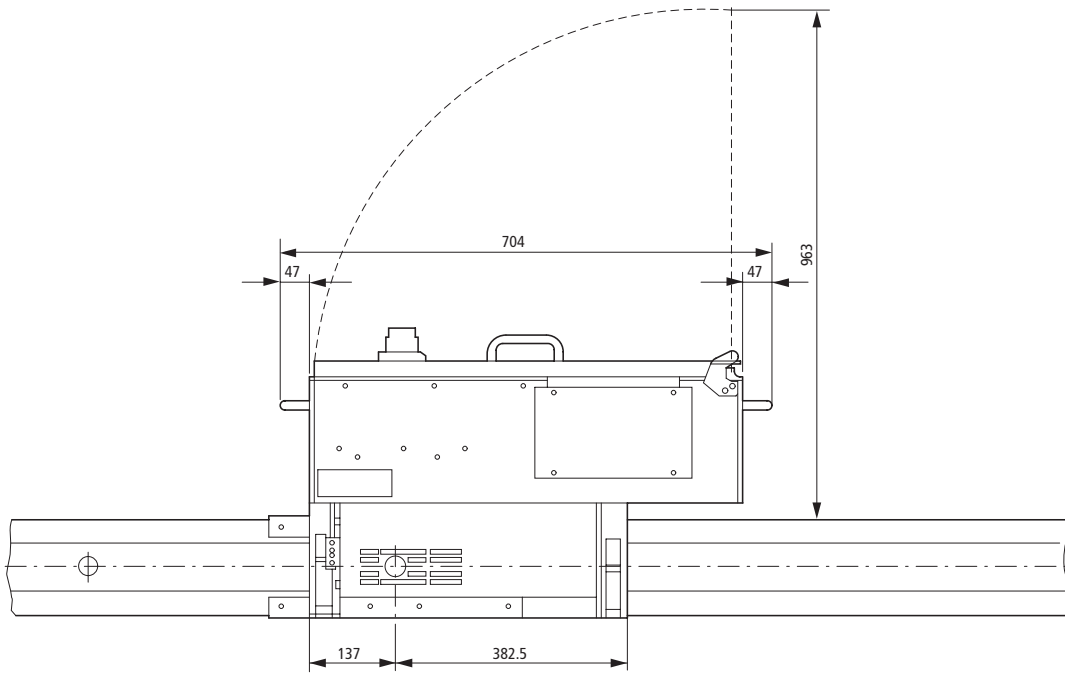
Space requirements for fitting



Busbar trunking system LDA/LDC

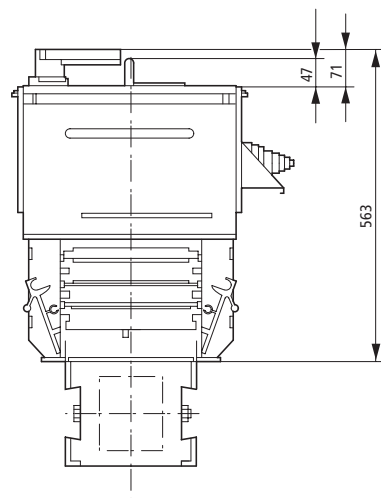
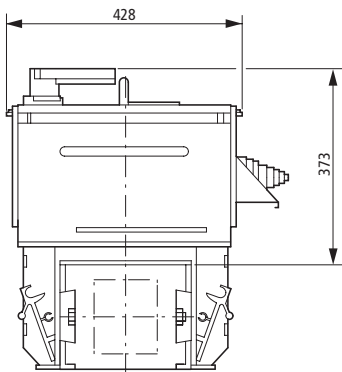
Dimension drawings Tap-off unit with low-voltage switch-disconnector

LD-K-.AK./FS400-KSY



Tap-off unit fitted

Space requirements for fitting



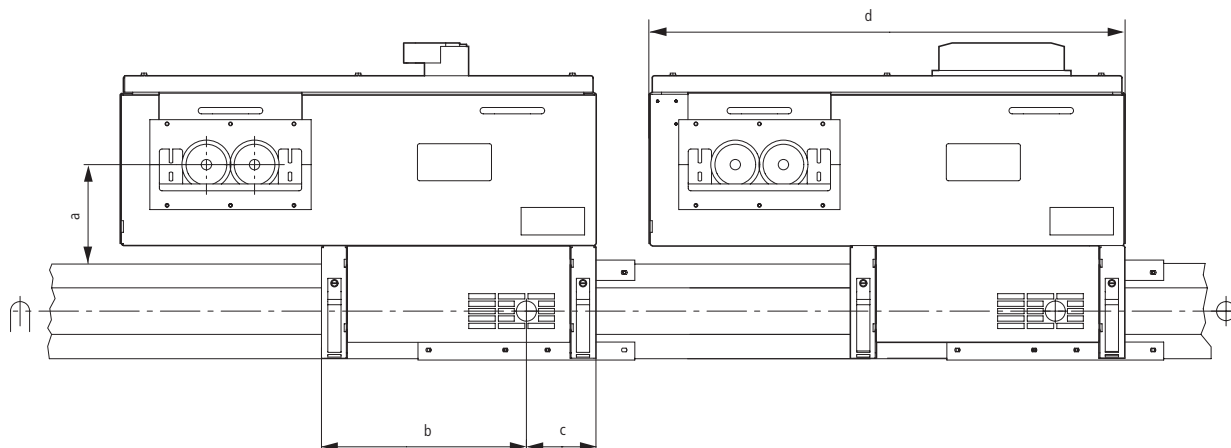
Busbar trunking system LDA/LDC

Dimension drawings

Tap-off units with circuit-breakers

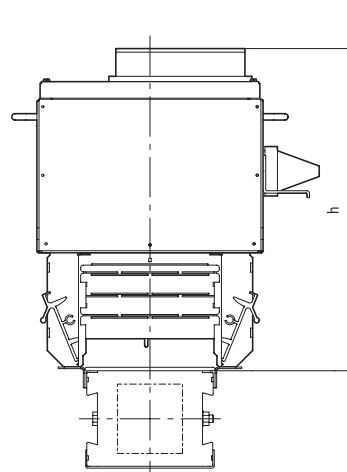
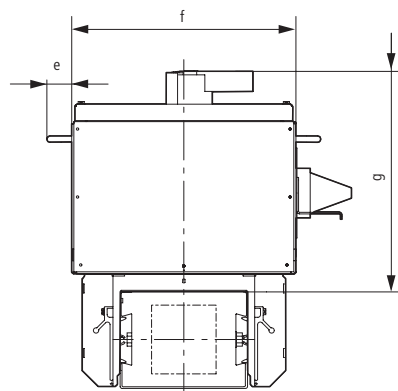
LD-K.AK./LSH-...-

LD-K.AK./LSM-...-



Tap-off unit fitted

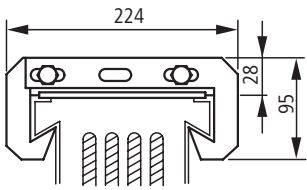
Space requirements for fitting



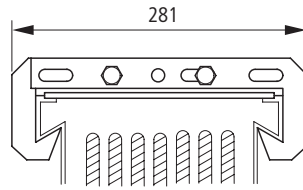
4

	a	b	c	d	e	f	g	h
Size 1	158	317,5	136,5	600	47	424	372	559
Size 2	187	387,5	136,5	900	47	424	417	604
Size 3	189	313	136,5	1200	47	424	421	605,5

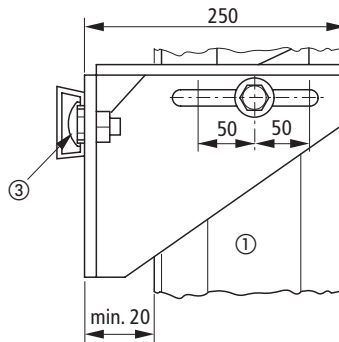
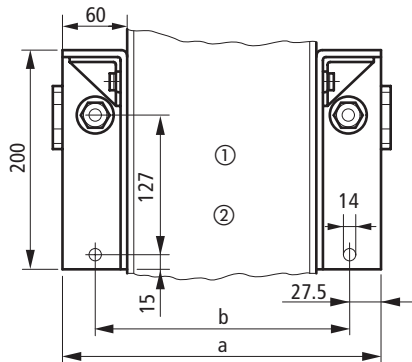
Fixing bracket for horizontal suspension
LD-B1



LD-B2



Fixing bracket for vertical fixing
LD-BV



	a mm	b mm
LDA1 to LDA3	300	245
LDC2 to LDC3	300	245
LDA4 to LDA8	357	302
LDC6 to LDC8	357	302

- ① LD system
- ② Front
- ③ To be supplied by customer

Busbar trunking system LDA/LDC

Notes

