Overview

Specimen text for tenders

Item	Quantity	Description	Unit price		Amount	
	... m	Busbar trunking system (see Appendix for diagram) • As type-tested low-voltage switchgear and controlgear assembly (TTA) according to IEC/EN 60439-1 and -2 • Rated current, corresponds to thermal rated current at max. +40 °C and +35 °C on a 24 h average for indoor installation • Rated insulation voltage U_i = 690 V AC, 800 V DC; overvoltage category/pollution degree III/3 • Operational voltage ... V, ... Hz • Rated peak withstand current of busbar trunking system, ... kA tested to IEC/EN 60439-1 • Degree of protection IP52, increase to IP54 or IP55 with accessories • 5-conductor system: L1, L2, L3, N, PE • Busbars: nickel-plated and tinned aluminum or tinned copper; supported by insulated busbar supports • Tested for sprinkler systems (with additional parts) • Halogen free system • Functional endurance E30, E90 (with additional parts) • Trunking units steel-enclosed, galvanized and with paint finish; light gray RAL 7035 • Busbar connection via clamp terminal with built-in expansion compensation • Tap-off points: on both sides at 0.5 m intervals; offset by 0.25 m to one another and every 1 m; offset by 0.5 m to one another • Supplied ready for connection with all assembly parts • Made by Siemens • Type BD2-... Comprising:				

Engineering information

Key to type references for BD2 for various conductor versions

BD2 . - . - ... - ... - ...

(Details of length)

(Type length)

Current [A]

Aluminum	Copper
160	160
250	250
315	315
400	400
500	500
630	630
800	800
1000	1000
	1250

1: L1, L2, L3, 1/2 N, 1/2 PE; 6 tap-off points (only BD2A system)

2: L1, L2, L3, 1/1 N, 1/2 PE; 12 tap-off points

3: L1, L2, L3, 1/1 N, 1/1 PE; 12 tap-off points

(N-conductor with 150 or 200 percent cross-section on request)

A: Aluminum

C: Copper

BD2 . - ... - ... - ...

(Length details with junction unit)

(Type junction unit, feeder unit)

Current [A]

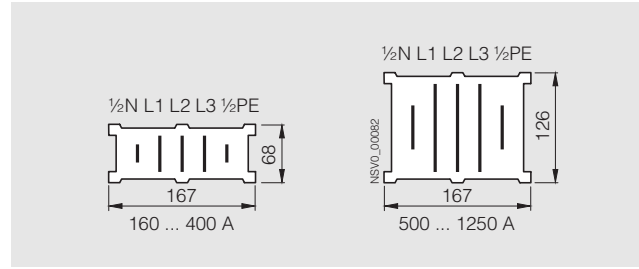
Aluminum	Copper
250[1)]	250[1)]
400	400
1000	1000[1)]
	1250

A: Aluminum

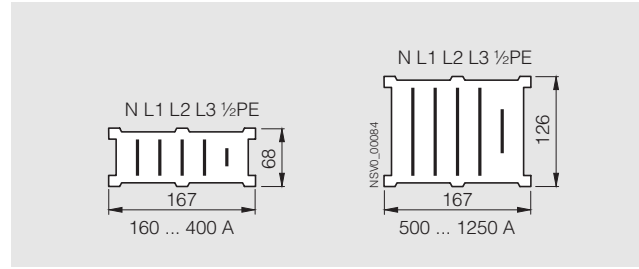
C: Copper

Sizes of the trunking units (cross-sections)

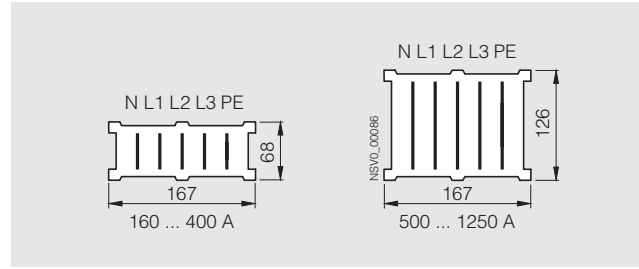
System size 1 System size 2



BD2A-1 trunking units



BD2A-2, BD2C-2 trunking units



BD2A-3, BD2C-3 trunking units,
junction units, BD2A-..., BD2C-... feeder units

Busbars	System size 1	System size 2
System accessories	Junction units	Junction units
	Feeder units	Feeder units
	Coupling units (on request)	Coupling units (on request)
	Accessories	Accessories
Tap-off units	Molded-plastic enclosure up to 25 A	Molded-plastic enclosure up to 25 A
	With circuit-breaker up to 250 A	With circuit-breaker up to 250 A
	With fuse up to 250 A	With fuse up to 250 A
		With circuit-breaker up to 630 A
		With fuse up to 630 A

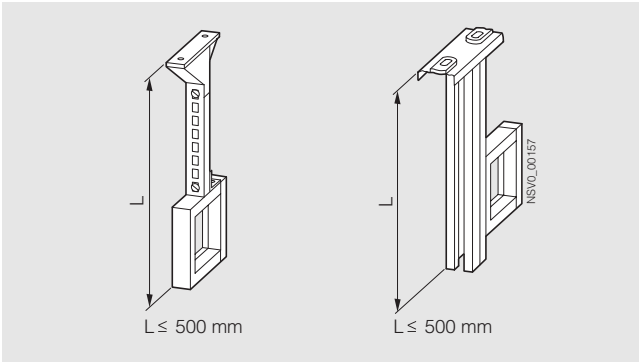
Design

Notes on supporting structures

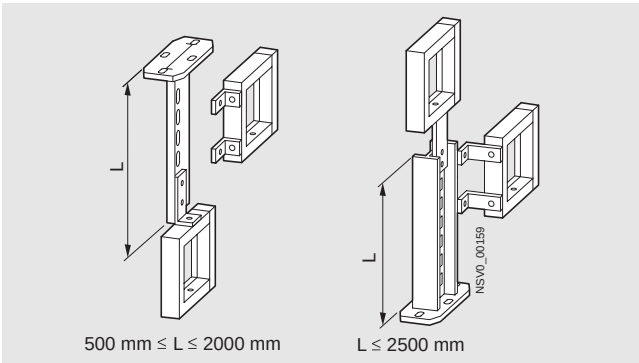
Structures made from standard materials.
Manufacturer: Rieth & Co, Kirchheim-Teck,
Tel. +49 (0) 7021 977-0.

All struts and beams are designed for mounting without a BD2-...-BB fixing bracket.

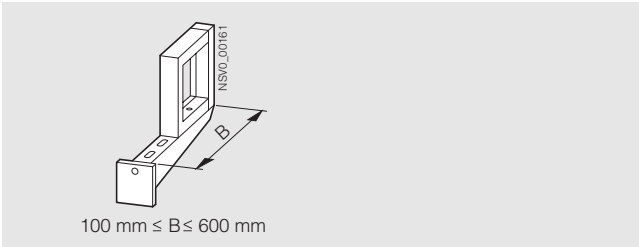
Examples for mounting edgewise runs



C strut with accessories (left) and double-C strut (right)
Length L in 100 mm increments

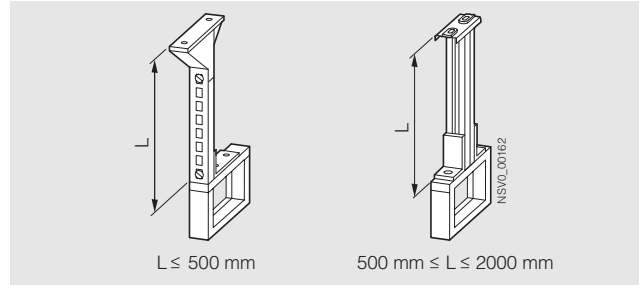


Z strut (left) and H strut (right)
Length L in 100 mm increments.
Trunking units can be secured at the side and at the center of the strut

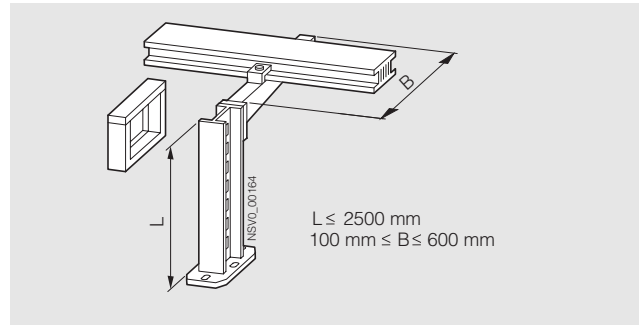


Wall beam
Width B in 50 mm increments

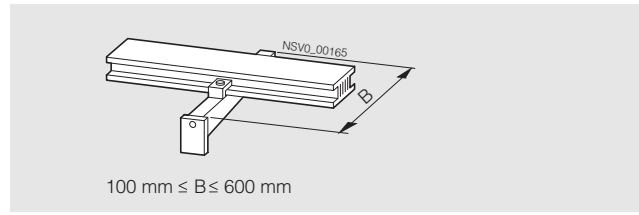
Examples for mounting flat runs



C strut with accessories (left) and double-C strut (right)
Length L in 100 mm increments

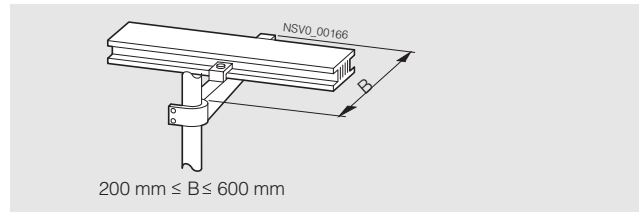


H strut with beam (without BD2-...-BB fixing bracket)
Length L in 100 mm increments,
width B in 50 mm increments.



Wall beam (without BD2-...-BB fixing bracket)
Width B in 50 mm increments.

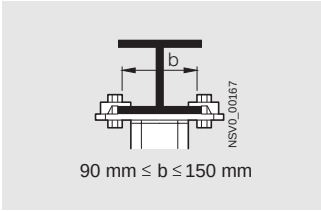
Example for securing busbar runs between floors



Tubular beam
Width B in 50 mm increments.
For securing runs without BD2-...-BB bracket

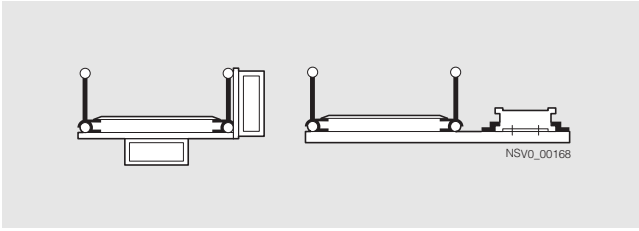
Engineering information

Suspension support on flange mount with terminal



For Z and H struts only

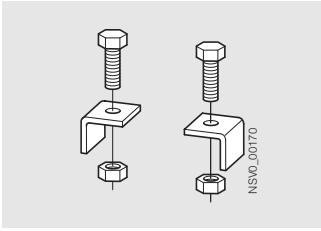
Securing trunk units on the cable trays



Can be fitted to standard cable trays using
BD2-...-BB fixing bracket or angle clamp. Sundries required

Clamp bracket

For securing trunking units to the illustrated supporting structures.



Clamp bracket

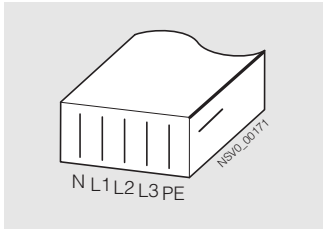
Basic engineering information

To simplify the engineering of BD2 systems, engineering symbols have been introduced. On the engineering drawings, these symbols clearly indicate the component mounting position, the phase sequence, the open busbar end, the end with the terminal, the position of the flange cover and the side from which the terminal can be accessed.

The following conventions apply to all components of the busbar run (feeder units, straight trunking units, branch units and junction units):

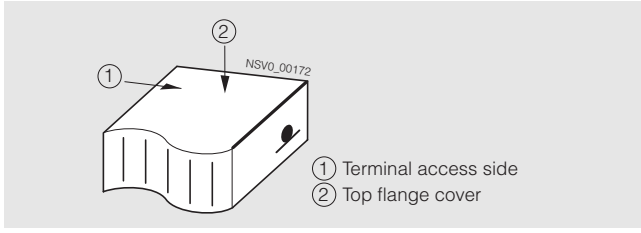
Open busbar end

The PE side is marked with a bold black line.

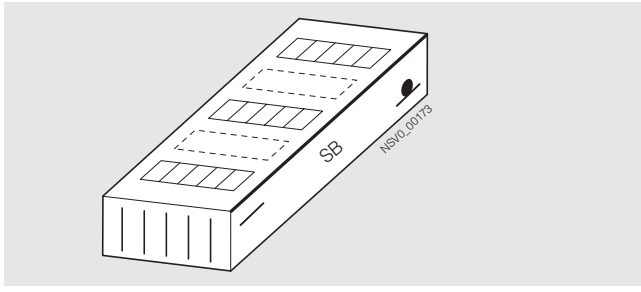


Phase sequence, PE on the right

Terminal end of the trunking unit



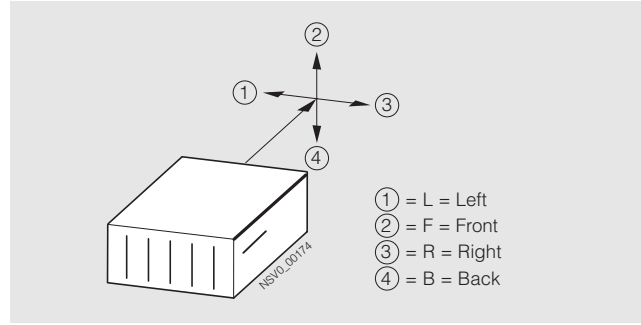
Example:



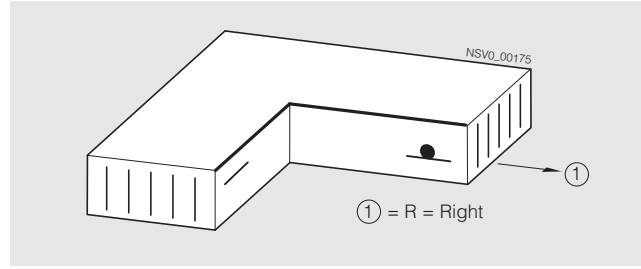
Straight trunking unit with tap-off points on both sides;
Type: BD2.-...-SB-.

The engineering symbols are used on the selection data pages.

Determining the orientation of L-units



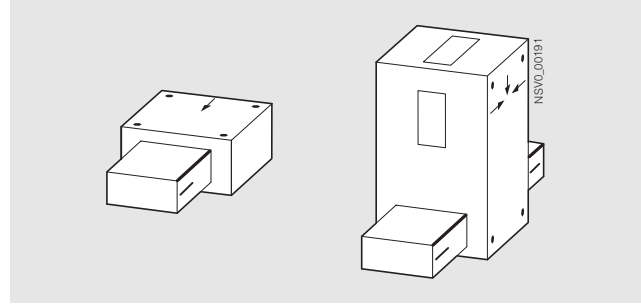
Example:



Elbow, right, Type: BD2.-...-LR

Determining the orientation of feeder units

On feeder units, the position of the cabling box relative to the trunking box is not critical for type selection, since the busbar connection flange can be turned on site to provide the required phase sequence.



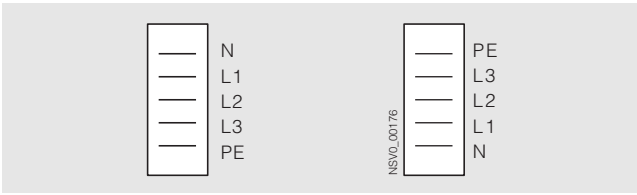
End feeder unit (left) and center feeder unit (right)

Engineering information

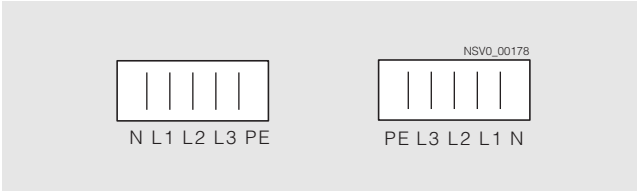
Route planning: Horizontal installation

Mounting positions

With the BD2 system, the mounting position can be chosen as required, allowing a horizontal busbar run to be laid out in two ways:



Horizontal, edgewise

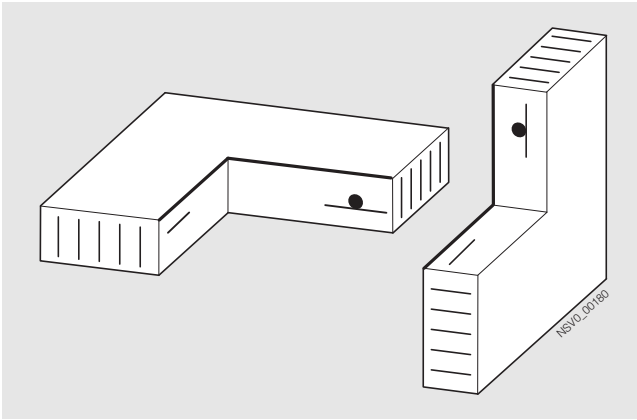


Horizontal, flat

As can be seen from the illustration, any phase sequence is possible. A derating factor in horizontal edgewise mounting position (× 0.9) is necessary with power transmission.

This applies for straight trunking units and junction units. The engineering symbol identifying the type shown on the selection page only needs to be turned to the desired mounting position in the engineering drawing.

Example:



Elbow, right, Type: BD2.-...-LR-, flat and edgewise mounting

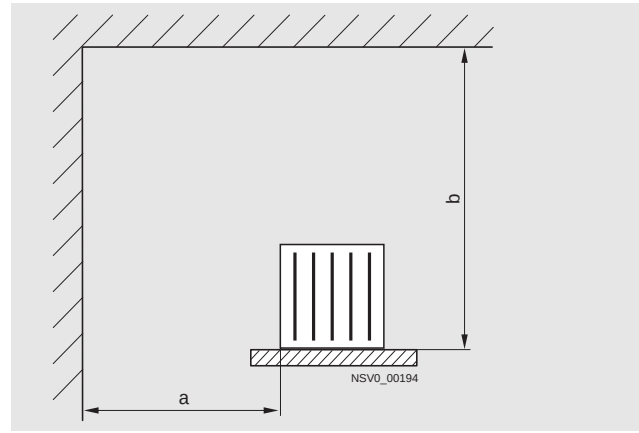
Horizontal edgewise mounting has the advantage of a larger suspension span and the need for fewer accessories (flanges) to achieve the increased degree of protection IP54 (see page 5/11).

Space requirement

To ensure easier mounting of the trunking units and tap-off units, minimum clearances from the building's elements must be observed when planning the route.

Busbar trunking system without tap-off units:

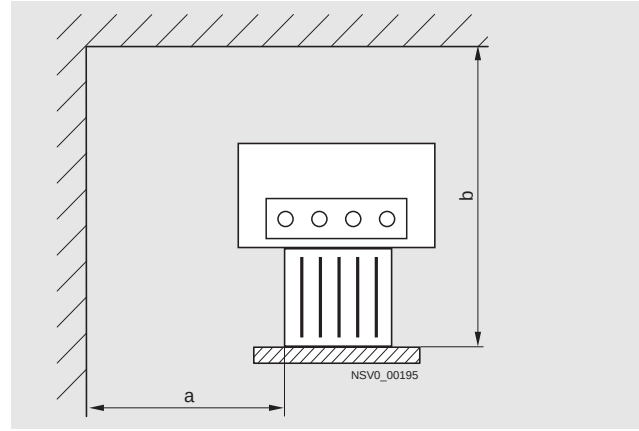
Minimum dimensions for busbar trunking system without tap-off units, including system-conform fixing brackets mounted horizontally on rack or wall beam:



Busbar system	Dimension a mm	Dimension b mm
BD2A(C)-.-160(-400)	100	160
BD2A(C)-.-500(-1250)	100	280

Busbar trunking system with tap-off units:

Busbar trunking system with tap-off units, including system-conform fixing brackets mounted horizontally on rack or wall beam. The minimum dimension a applies for the front cable entry.



Busbar system	Dimension a mm	Dimension b mm
BD2A(C)-.-160(-400)	300	620
BD2A(C)-.-500(-1250)	300	680

For a configuring example for horizontal installation see page 5/84.

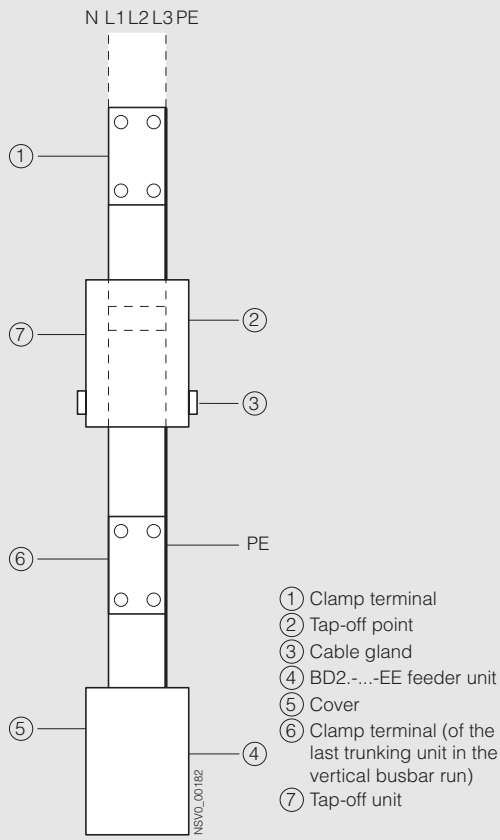
Route planning: Vertical installation

Mounting positions

When engineering vertical busbar runs (see page 5/86) the height of the storey measured from the center of one ceiling to the center of the next determines the choice of busbar lengths. If no fire barriers are required, standard lengths with protective sleeves can be used. In this case a distance of at least 0.185 m must be maintained between the end of the trunking unit enclosure and the upper edge of the protective sleeve.

For vertically mounted systems, only one mounting position is possible. The PE bar must always be on the right-hand side, and the trunking unit end with the clamp terminal must point towards the top. This ensures that

- the flange cover can be push-fitted to the terminal from the front and the screws can be tightened,
- the tap-off units are not mounted upside-down, i.e. they can only be fitted in the correct position.



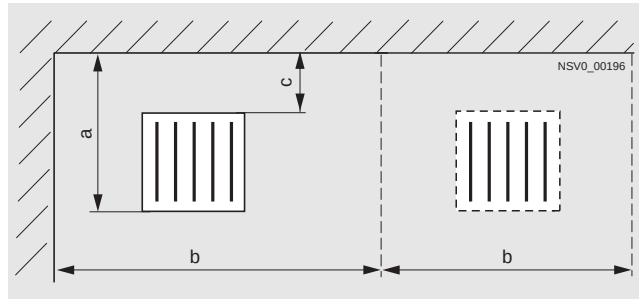
No derating is required for vertical busbar runs.

For more information about vertical installation see page 5/86.

Space requirement

To ensure easier mounting of the trunking units and tap-off units, minimum clearances from the building's elements must be observed when planning the route.

Busbar trunking system without tap-off units:



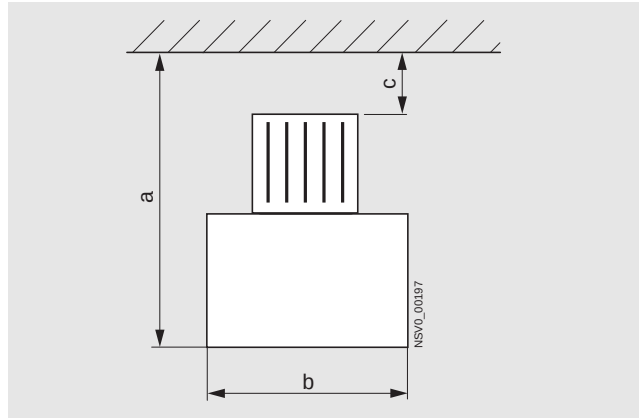
Busbar system	Dimension a	Dimension b[1]	Dimension c[2]
(incl. fixing bracket)	mm	mm	mm
BD2A(C)-.-160(-400)	130	640	30
BD2A(C)-.-500(-1250)	170	640	30

1) Space required due to fixing bracket.

2) Distance from wall due to fixing bracket.

Busbar trunking system with tap-off units:

A busbar system with connected tap-off unit is illustrated. Cable entry is from the bottom.



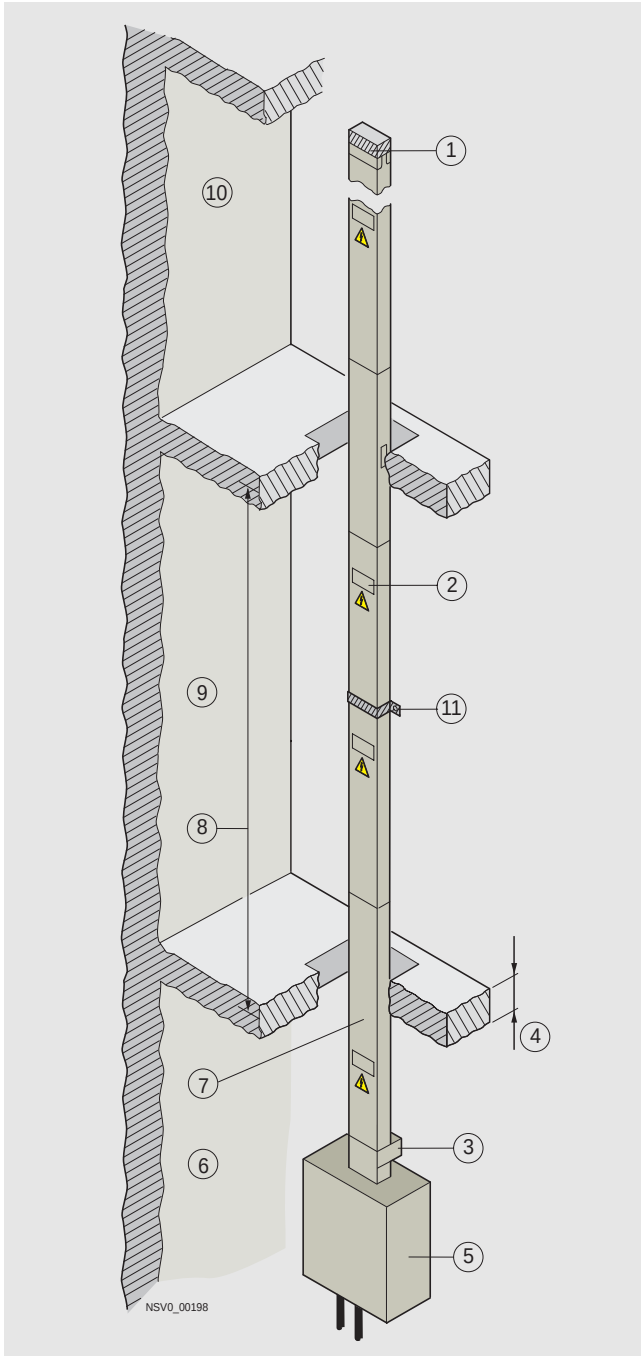
Busbar system	Dimension a	Dimension b	Dimension c[1]
(incl. fixing bracket)	mm	mm	mm
BD2A(C)-.-160(-400)	660	640	30
BD2A(C)-.-500(-1250)	700	640	30

1) Distance from wall due to fixing bracket.

Engineering information

Fire barrier

The fire barrier must always be seated centrally in the fire ceiling. Both standard trunking units and trunking units with optional lengths can be equipped with fire protection through compartmentalization.



① End flange, termination
② Tap-off point
③ Retaining element for vertical fixing
④ Ceiling thickness
⑤ End feeder unit
⑥ 1st storey
⑦ Center of fire barrier
⑧ Storey height from center of one ceiling to the center of the next
⑨ 2nd storey
⑩ 3rd storey
⑪ Fixing with BD2-BB and spacer bracket

Tap-off units

For the tap-off units in the vertical run, the mounting position is stipulated. The tap-off cable must be connected from the bottom. This is the case when the PE conductor is on the right-hand side looking from the front.

Vertical fixing

Vertical fixing brackets in the stipulated maximum intervals (see Table) must be used. The vertical brackets are fitted at the flange of the clamp terminal. Fixtures in between are realized with the spacer bracket combined with the BD2-BB fixing bracket.

The distance from the wall can be varied:
- 30 mm minimum,
- 82 mm minimum.

Maximum length or height of vertical BD2-... busbar runs, supported by one vertical retaining element:

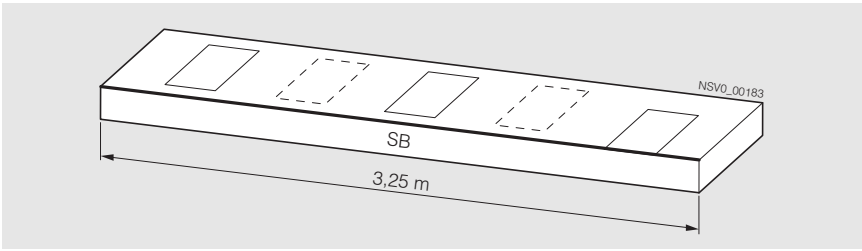
Rated operating current	**Max. length or height**	
	BD2A	BD2C
A	m	m
160	11.3	10.0
250	10.9	9.9
315	8.2	7.7
400	7.9	7.2
500	5.8	5.2
630	5.8	5.2
800	5.8	4.8
1000	5.3	4.1
1250	–	3.25

Defining the engineering reference dimensions

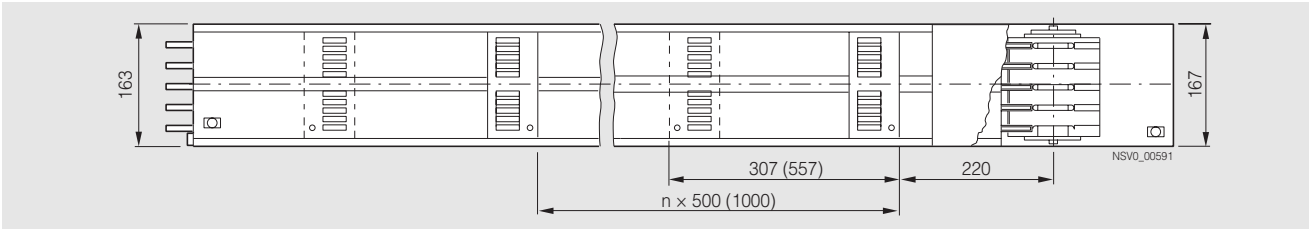
Straight trunking units, standard lengths, type BD2.-.-...-SB-.

Standard lengths from center of terminal to center of terminal

Example: Standard length with tap-off points on both sides, type BD2.-...-SB-3



Dimensions in the engineering drawings BD2.-2, BD2.-3, tap-off point distance = 0.5 m,
(BD2.-1: tap-off point distance = 1 m)

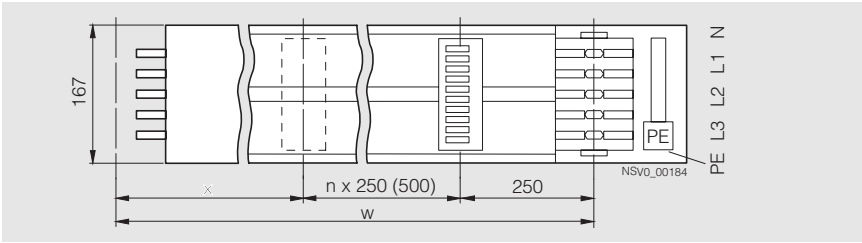


Dimension drawing

Straight trunking units, optional lengths, type BD2.-.-...-WB-.

Example: BD2.-2, BD2.-3, tap-off point distance = 0.5 m,
(BD2.-1: tap-off point distance = 1 m)

The open busbar end is used as the reference edge. The grid spacing between the tap-off points is shown in the diagram.

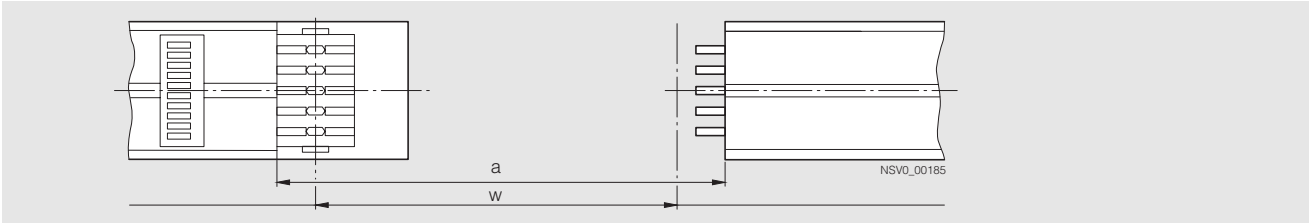


Length m	Tap-offs on both sides Number
0.5 ... 1.24	–
1.25 ... 2.25	2 ... 8
2.26 ... 3.25	4 ... 12

On optional lengths, it may not be possible to fit tap-off units to all tap-off points

Distance x is the distance between the center of the terminal at the open end and the next tap-off point on the trunking unit.
For the standard length x = 250 mm. For optional lengths, 260 mm ≤ x ≤ 490 mm (depending on the optional length w).

Measuring and determining the optional lengths on site



On site, the dimension a between the enclosure edges of the two trunking units to be connected is measured.
The optional length is then determined as follows:

w[m] = a[m] – 0.14 m

Junction units

X dimension (side with open busbar end): from center of terminal to outside edge of enclosure,
Y dimension (side with clamp terminal): from center of terminal to outside edge of enclosure,
Z dimension: from outside edge of enclosure to outside edge of enclosure.

For dimensioning data see page 5/102.

Engineering information

Max. length/height of vertical BD2 busbar runs, supported by one BD2-BWV or BD2-BDV retaining element

BD2A-.-...										
Rated current	A	160	250	315	400	500	630	800	1000	1250
Max. supported length or height at max. weight (see below)	m	11.3	10.9	8.2	7.9	5.8	5.8	5.8	5.3	–
Max. weight per 3.25 m trunking unit fitted with tap-off units	kg	50	53	71	74	106	106	108	108	–

BD2C-.-...										
Rated current	A	160	250	315	400	500	630	800	1000	1250
Max. supported length or height at max. weight (see below)	m	10.0	9.9	7.7	7.2	5.2	5.2	4.8	4.1	3.25
Max. weight per 3.25 m trunking unit fitted with tap-off units	kg	50	53	71	74	106	106	108	108	108

Notes

For taller BD2 trunking runs, additional mountings must be used.

The maximum load applied to the BD2-BWV and BD2-BDV vertical retaining elements must not exceed 175 kg. They must be fitted in the area of the terminal.

Function

Overload and short-circuit protection

Busbar trunking systems need to be protected against short-circuits and overloads. Fuses and circuit-breakers are available for use as protective devices. With the selection of this protection equipment the level of the expected short-circuit currents, selectivity requirements or operating and signaling functions are also factors for consideration.

If circuit-breakers are used, the thermally delayed overload release is set to the rated current value for the busbar trunking system. This means that the busbar trunking system can be 100% loaded.

When you decide on your short-circuit protection via fuses and circuit-breakers you must not exceed the specified short-circuit ratings of the busbar trunking systems.

It depends on the level of expected short-circuit current, whether a current limiting protective device is required and what short-circuit breaking capacity the protective device must have.

A tabular overview follows of the circuit-breakers which can provide short-circuit and overload protection (400 V and 50 Hz) for the corresponding trunking system.

The following applies: $I''_k \leq I_{cc} \leq I_{cu}$

where

I''_k = the expected short-circuit current at the site of installation

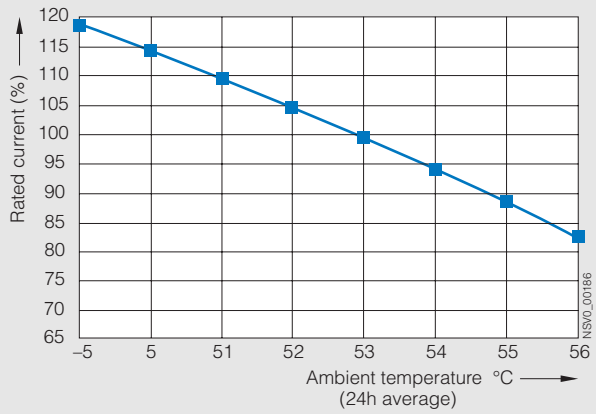
I_{cc} = rated short-circuit current of the busbar run

I_{cu} = rated short-circuit breaking capacity of the circuit-breaker

Type	Rated current	Circuit-breaker with normal switching capacity	Rated short-circuit current		Circuit-breaker with medium switching capacity	Rated short-circuit current		Circuit-breaker with high switching capacity	Rated short-circuit current:	
	I_e A		I_{cu} kA	I_{cc} kA		I_{cu} kA	I_{cc} kA		I_{cu} kA	I_{cc} kA
BD2A(C)-160	160	3VL27 16-1...	40	20	3VL27 16-2...	70	20	3VL27 16-3...	100	20
BD2A(C)-250	250	3VL37 25-1...	40	40	3VL37 25-2...	70	50	3VL37 25-3...	100	50
BD2A(C)-315	315	3VL47 31-1...	40	35	3VL47 31-2...	70	35	3VL47 31-3...	100	35
BD2A(C)-400	400	3VL47 40-1...	45	45	3VL47 40-2...	70	45	3VL47 40-3...	100	45
BD2A(C)-500	500	3VL57 50-1...	45	45	3VL57 50-2...	70	70	3VL57 50-3...	100	80
BD2A(C)-630	630	3VL57 63-1DC36	45	45	3VL57 63-2DC36	70	70	3VL57 63-3DC36	100	100
BD2A(C)-800	800	3VL57 80-1AE36	50	50	3VL57 80-2AE36	70	70	3VL57 80-3AE36	100	100
BD2A(C)-1000	1000	3VL77 10-1AE36	50	50	3VL77 10-2AE36	70	60	3VL77 10-3AE36	100	60
BD2C-1250	1250	3VL77 12-1AE36	50	50	3VL77 12-2AE36	70	60	3VL77 12-3AE36	100	60

The values for the conditional rated short-circuit current I_{cc} apply to the busbar trunking systems without consideration of any tap-off units.

Temperature characteristic of BD2 systems

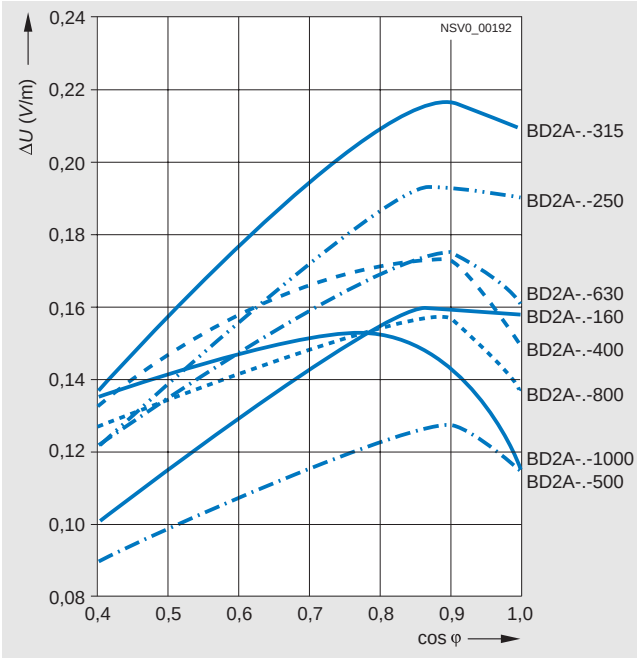


Voltage drop

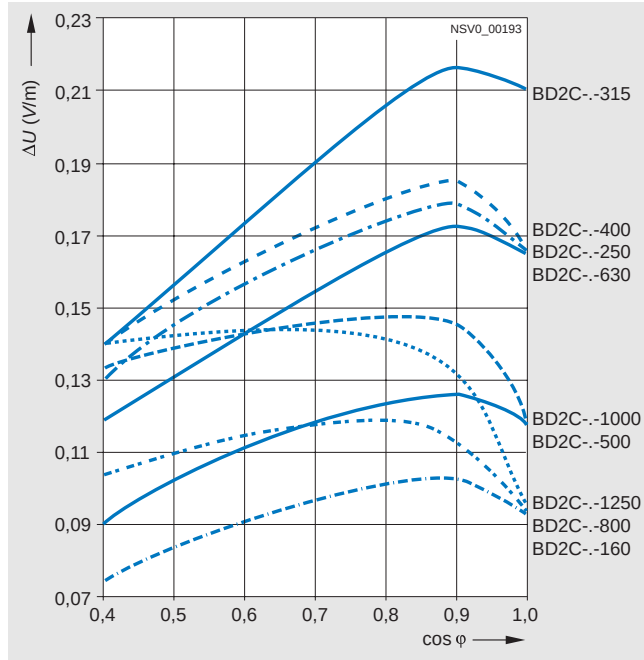
Voltage drop at rated current

The following diagrams show the voltage drop of the BD2A/BD2C systems

- Taking into account the heat resistors (according to IEC/EN 60439-2)
- With a load distribution factor a = 1
- Under loading with the rated current. (With a different load distribution factor the curve value must be multiplied by the corresponding distribution factor.)



Voltage drop BD2A



Voltage drop BD2C

Calculation of the voltage drop

With long runs you may need to calculate the voltage drop.

$$\Delta U = a \times \sqrt{3} \times I \times l \times (R \times \cos\varphi + X \times \sin\varphi) \times 10^{-3} \quad (V)$$

ΔU	=	Voltage drop	(V)
I	=	Load current	(A)
l	=	Length	(m)
a	=	Load distribution factor	
R	=	Ohmic resistance R_1	(mΩ/m)
X	=	Inductive resistor X_1	(mΩ/m)
cos φ	=	Power factor	

Factor "a" used in the equation for calculating the voltage drop is dependent on the load distribution.

Load distribution

Load distribution		Factor *a*
A → B	Supply at A, one tap-off at B	1
A → B C D E	Supply at A, tap-offs at B, C, D, E	0.5
B A C	Supply at A, tap-offs at B, C	0.25
B D A E C	Supply at A, tap-offs at B, C, D, E	0.125
A → ← B, C D E F	Supply at A, tap-off at C, D, E, F	0.25

Engineering information

Engineering

Configuring example: horizontal mounting position

Required details

The following details are required for configuring BD2 busbar trunking systems (horizontal installation):

- Installation flat or edgewise, horizontal or vertical, quantity, type and approximate ratings of prospective loads, p.f.
- Utilization and rated diversity factor = derating factor α
- Feeding transformers (short-circuit current)
- Nature of the installation site (dimensions, construction of the building, transport paths, cellar, etc.)
- Routing of supply lines from other power sources
- Coordination of lighting system with the BD busbar run
- Crane operation in installation area

Given:

1. Σ of the actual load 600 kW, cos φ = 0.8; U_e = 400 V
2. Floor plan and machine layout
3. Derating factor α = 0.6
4. Incoming supply cables 2 × 185 mm^2 from distribution board
5. Transformer: 1 × 500 kVA
6. Steel frame shed construction
7. Suspension height 3 m
8. Installed power on machine lines: 200, 182, 118, 100 kW
9. No crane operation
10. Edgewise mounting

Operational current

The operational current is calculated using the following formula:

$$I_B = \frac{P_{inst} \times \alpha \times b}{\sqrt{3} \times U_e \times \cos\varphi} \times 10^3$$

with:

I_B	=	Operational current	(A)
P_{inst}	=	Installed power	(kW)
U_e	=	Rated operational voltage	(V)
cos φ	=	Power factor	
α	=	Derating factor	
b	=	Supply factor	
		b = 1 = Single end feed	
		b = ½ = Double end feed, center feed	

If no data are available about the actual currents occurring simultaneously (derating factor), the following values according to IEC/EN 60439-1 apply:

Number of main circuits	Rated diversity factor α
2 and 3	0.9
4 and 5	0.8
6 to 9 inclusive	0.7
10 or more	0.6

Determining the operational current

Main busbar run: $I_B = \frac{600 \times 0.6 \times 1}{\sqrt{3} \times 400 \times 0.8} \times 10^3 = 650$ A

Machine line 200 kW: $I_B = \frac{200 \times 0.6 \times 1}{\sqrt{3} \times 400 \times 0.8} \times 10^3 = 217$ A

Machine line 182 kW: $I_B = \frac{182 \times 0.6 \times 1}{\sqrt{3} \times 400 \times 0.8} \times 10^3 = 197$ A

Machine line 118 kW: $I_B = \frac{118 \times 0.6 \times 1}{\sqrt{3} \times 400 \times 0.8} \times 10^3 = 128$ A

Machine line 100 kW: $I_B = \frac{100 \times 0.6 \times 1}{\sqrt{3} \times 400 \times 0.8} \times 10^3 = 108$ A

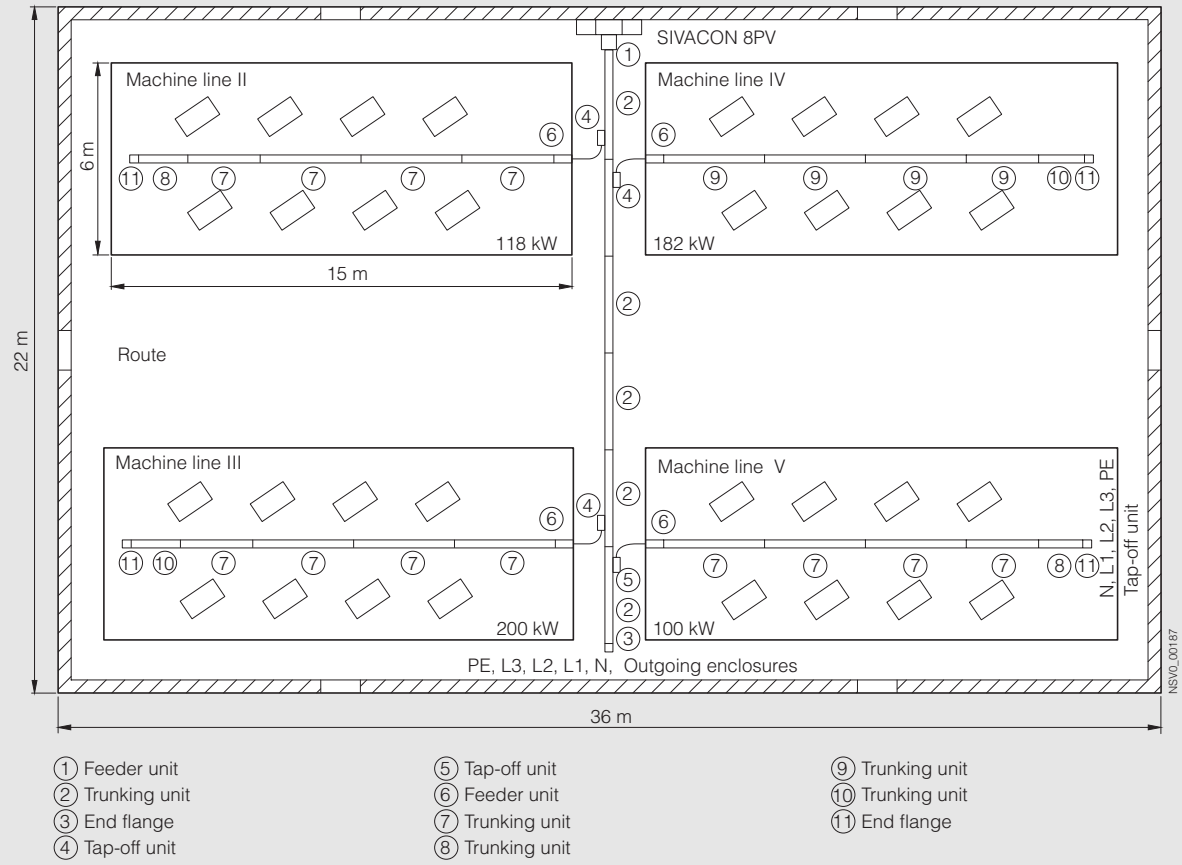
Installation plan

It contains:

- Position of the busbar trunking system in the building,
- position of the PE and the tap-off openings and consequently the installation direction of the tap-off units,
- number of components with item numbers
- and the method and height of suspension.

The information assists the installer later.

If the system is correctly assembled, the entire system will have the same sense of rotation as the three phase motors throughout the entire system. As a result, it will not be necessary to check the direction of rotation of the motors when relocating a machine.



① Feeder unit
② Trunking unit
③ End flange
④ Tap-off unit
⑤ Tap-off unit
⑥ Feeder unit
⑦ Trunking unit
⑧ Trunking unit
⑨ Trunking unit
⑩ Trunking unit
⑪ End flange

Installation plan

Suspension: at a height of 3 m with ceiling mounted supporting structures. BD2 busbar run I, 800 A, supplies BD2 runs II, III, IV and V via tap-off units and end feeder units, connected by short cable lengths.

Parts list

The parts list should contain all the items shown on the installation plan, with type reference, description and quantity.

Tap-off Item No. (installation site)	F W L K	Type	Benennung, Zuordnung Description Dénomination	Anzahl Quant.	Listenpreis List price Prix brut einzeln each unitaire	zusammen total
1		BD2A-1000-EE	Feeder unit	1		
2		BD2A-1-800-SB-3	Trunking units	6		
3		BD2-1250-FE	End flange	1		
4		BD2-AK04/SNH1	Tap-off units	3		
5		BD2-AK3X/GS00	Tap-off units	1		
6		BD2A-400-EE	Feeder unit	4		
7		BD2A-1-160-SB-3	Trunking units	8		
8		BD2A-1-160-SB-1	Trunking units	2		
9		BD2A-1-250-SB-3	Trunking units	8		
1 0		BD2A-1-250-SB-1	Trunking units	2		
1 1		BD2-400-FE	End flange	4		
1 2		BD2-1250-BB	Fixing bracket	5		
1 3		BD2-400-BB	Fixing bracket	14		

Engineering information

Configuring example: vertical mounting position

Required details

- Number and height of storeys
- Ratings and types of load per storey
- Utilization and diversity factor = derating factor α
- Feeding transformers (characteristics, position)
- Special requirements (degree of protection, fire barriers, etc.)

Given:

1. Six storeys with five apartments each
2. 38 kW connected load per apartment
3. U_e = 400 V, p.f. = 0.8
4. Derating factor α = 0.8
5. Derating factor β = 0.45
6. Incoming supply cables 2 × 240 mm^2
7. Protection with circuit-breaker 3VL57 80
8. Details and site plans required for routing the trunking

Operational current

The operational current per storey, which also determines the required rated current of the tap-off units, is calculated using the following formula

$$I_{NB} = \frac{P_{inst} \times \alpha}{\sqrt{3} \times U_e \times \cos \varphi} \times 10^3$$

with:

I_{NB}	=	Operational current per storey	(A)
P_{inst}	=	Sum of installed power per storey	(kW)
U_e	=	Rated operational voltage	(V)
cos φ	=	Power factor	
α	=	Derating factor If α is not specified, the values from Table 1 can be used. If cos φ is not known, this can be set for a block of apartments = 1.	

$$I_{NB} = \frac{5 \times 38 \times 0.8}{\sqrt{3} \times 400 \times 0.8} \times 10^3 = 274 \text{ A}$$

The operational current per busbar run is:

$$I_B = I_{NB} \times \beta$$

with

β	=	Utilization and diversity factor for the total number of loads. Good empirical values for derating factors can be obtained from your local power supply company. They vary from region to region. Average values are indicated in table 2.

Table 1 (according to IEC/EN 60439-1)

Number of main circuits	Rated diversity factor α
2 and 3	0.9
4 and 5	0.8
6 to 9 inclusive	0.7
10 or more	0.6

Table 2: Utilization factor and rated diversity factor

Item	Factor β
Schools, nursery schools	0.6 ... 0.9
Carpenters' and joiners' workshops	0.2 ... 0.7
Restaurants, hotels	0.4 ... 0.7
Butchers	0.5 ... 0.8
Bakeries	0.4 ... 0.8
Laundries	0.5 ... 0.9
Conference halls	0.6 ... 0.8
Small offices	0.5 ... 0.7
Large offices	0.4 ... 0.8
Department stores, supermarkets	0.7 ... 0.9
Metal processing works	0.2 ... 0.3
Car factories	0.2 ... 0.3
Lighting systems for road tunnels	1.0
Building sites	0.2 ... 0.4

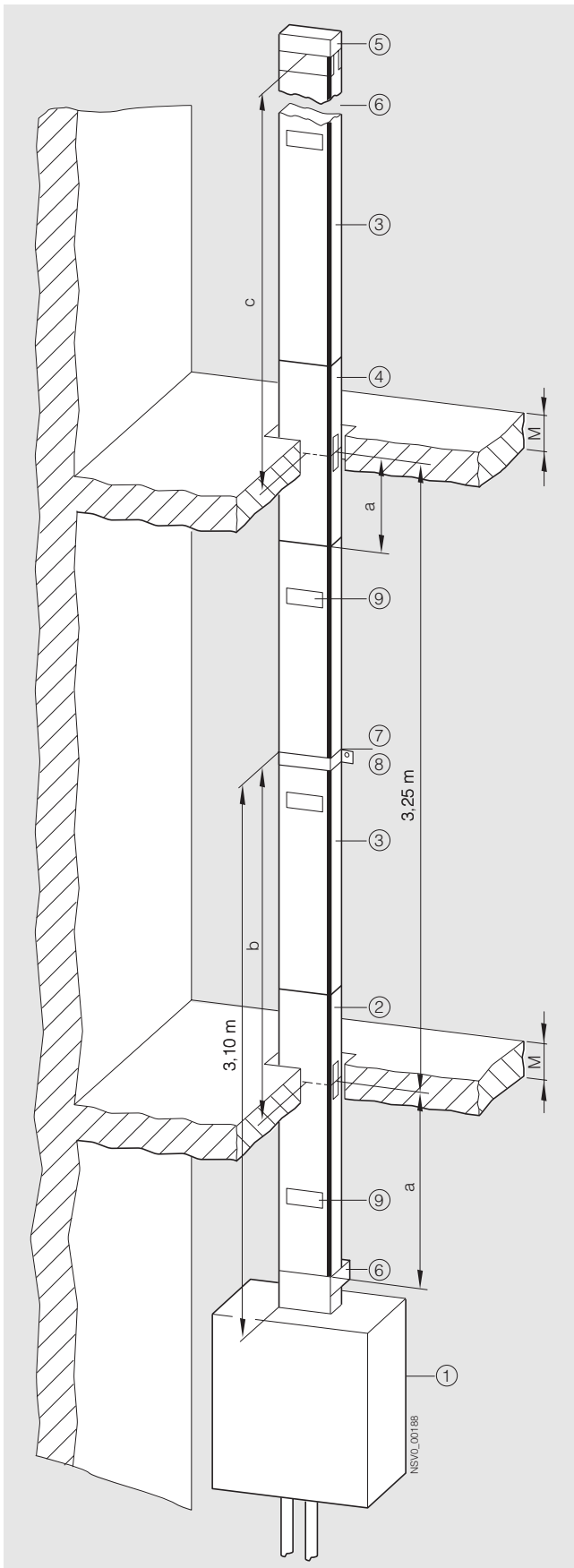
Once the system has been selected, in this case BD2A-1-800, the following documents must be completed to place an order:

- Installation plan
- Parts list
- Order from

Parts list

Tap-off Item No. (installation site)	F W L K	Type	Benennung, Zuordnung Description Dénomination	Anz. Qty. Qté
1		BD2A-1000-EE	End feeder unit	1
2		BD2A-1-800-WB-2W1.50 +BD2-S120-BX1.00-M0.25	Trunking unit with optional length 1.5 m + fire barrier a = 1.0 m, ceiling thickness M = 0.25 m	1
3		BD2A-1-800-SB-2	Trunking unit 2.25 m	5
4		BD2A-1-800-WO-1W1.00 +BD2-S120-BX0.50-M0.25	Trunking unit with optional length 1.0 m + fire barrier a = 0.5 m, ceiling thickness M = 0.25 m	4
5		BD2-1250-FE	End flange	1
6		BD2-BWV	Vertical retaining elements	4
7		BD2-1250-BB	Fixing bracket	5
8		BD2-BD	Spacer bracket	5
9		BD2-AK05/SNH2	Tap-off unit with low-voltage h.b.c. fuse switch-disconnector	6
Alternatively:				
2 ... 4		BD2A-1-800-SB-3 +BD2-S120-BX1.00-M0.25	Trunking unit 3.25 m + fire barrier a = 1.0 m, ceiling thickness M = 0.25 m	5

Installation plan



Explanations for the installation plan

① End feeder unit
② Trunking unit, optional length 1.5 m, with fire barrier
③ Trunking unit, standard length 2.25 m
④ Trunking unit, optional length 1.0 m, with fire barrier
⑤ End flange
⑥ Vertical retaining elements
⑦ Fixing bracket
⑧ Spacer bracket
⑨ Tap-off unit

a Position of fire barrier in m;
center of fire barrier is always at center of fire ceiling
b Dimension for spacer bracket in m
c Dimension for retaining element in m
M Ceiling thickness in m

Fixing elements:

- Second retaining element at approx. 5 m height (always near the terminal)
- Third retaining element at approx. 10 m height
- Fourth retaining element at approx. 15 m height

Note

The fixing points for all fixing brackets, retaining elements and spacer brackets must be specified in the installation plan.