



# BUSBAR TRUNKING SYSTEMS

25A-6300A

THE SMARTEST WAY OF POWER DISTRIBUTION

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**AB-E SERIES / 25A-63A**  
LIGHTING AND POWER  
BUSBAR TRUNKING SYSTEMS

SF 06-23

AB-E

**SP-H SERIES / 100A-160A**  
LOW POWER BUSBAR  
TRUNKING SYSTEMS

SF 26-37

SP-H

**MP-H SERIES / 160A-600A**  
MEDIUM POWER BUSBAR  
TRUNKING SYSTEMS

SF 40-63

MP-H

**HP-K SERIES / 400A-6300A**  
HIGH POWER BUSBAR  
TRUNKING SYSTEMS

SF 66-122

HP-K

**QUALITY  
STANDARDS**

SF 124-125

Quality





**AB-E  
SERIES  
25A-63A**



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## GENERAL PROPERTIES

AB-E DTM Busbar systems are used in places that need lighting and power between 25-63A.

### Technical Information

The casing of the busbar trunking system is shaped from Galvanized Sheet in the profile machine and interlocked and its mechanical durability is increased.

The conductors are PVC insulated. Standard number of conductors are 4; L1, L2, L3, N+Pe (as housing). Optionally, 5-conductor Neutral conductor cross section is equal to phase conductors; All designs and tests have been carried out in accordance with IEC61439-1/6' standard. Any busbar application can be mounted through the covered cable duct. Values such as smoke and light intensity can be controlled with the help of a PLC and Router.

It is produced in accordance with ISO 9000 Standards and with a certified quality assurance system.

### Advantages

#### Connectors

Allows optimum utilization of space requirements and both horizontal and vertical mounting for the adaptable lighting system.

Easy and fast assembly is done easily and quickly in three steps.

1. Suspenders placed for hanging busbar.
2. To attach two busbars, one busbar is attached to the pin of the spring holder.
3. No expert tool wrenches or craftsmanship required for assembly.

### Busbar Advantages

#### Convenient

It is easily designed, power distribution and clean network structure, easy engineering and installation.

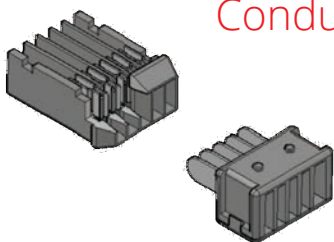
#### Fast

Quick assembly using very few tools Busbar systems noticeably reduce assembly time.

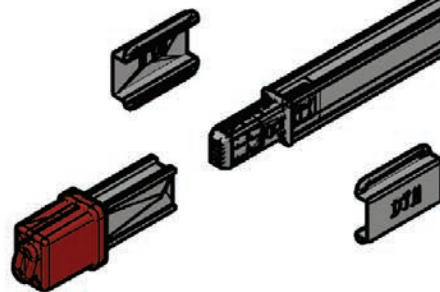
#### Flexible

It can be easily extended and modified in assemblies.

### Conductor Option



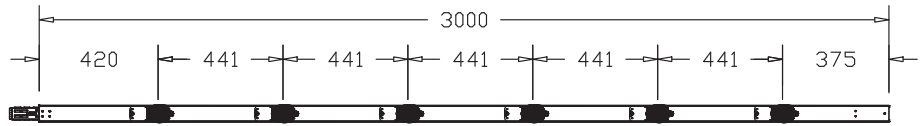
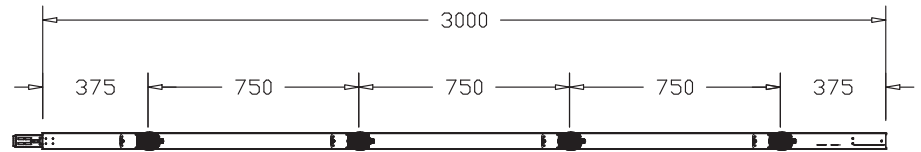
In addition to the phase and neutral conductors designed with full cross-section, an earth conductor option is also offered if needed.



### Safety

The grounding conductors of the tap off plugs and tap off boxes contact the busbar body first for safety and are disconnected last when being removed.

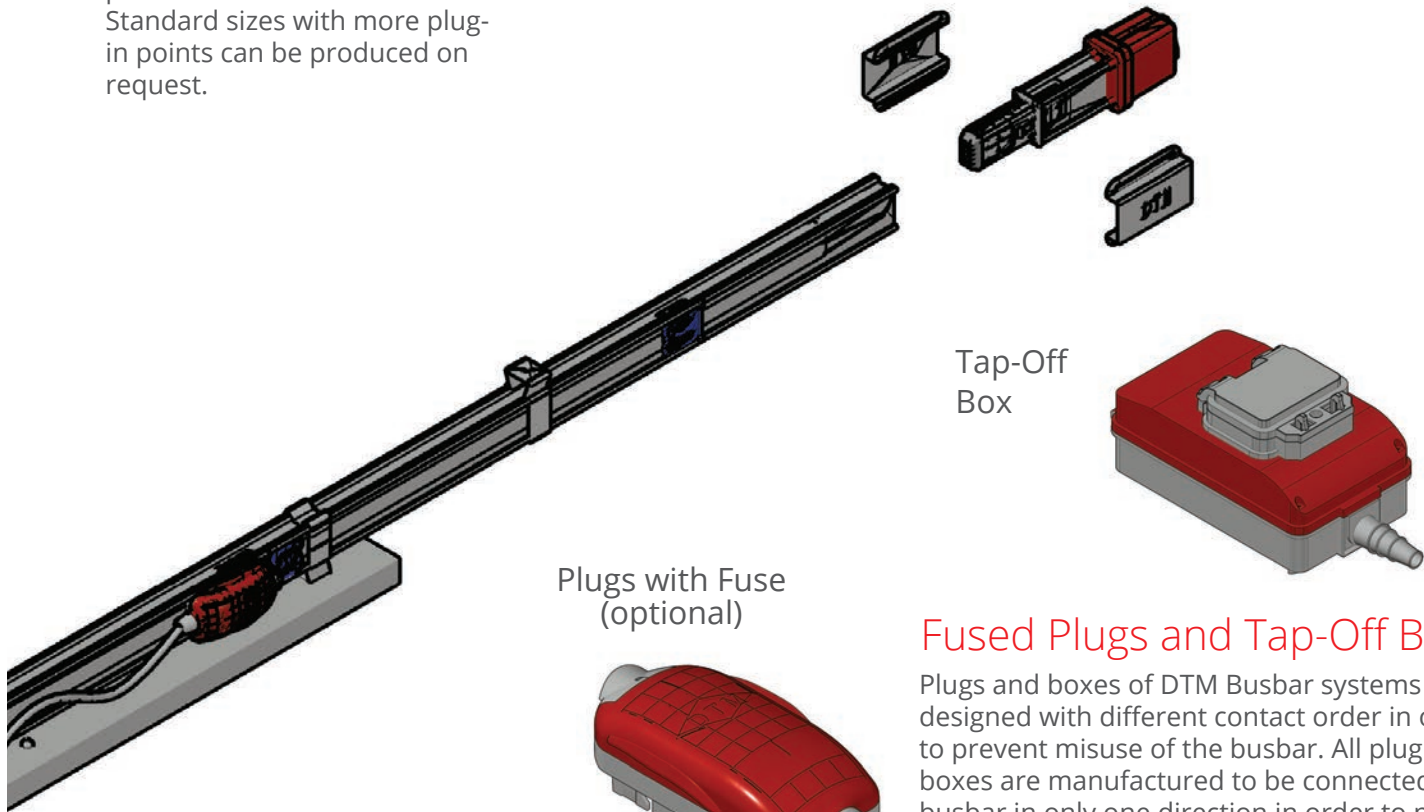
AB-E



AB-E

### Plug-In Points

Plug-in Points 3 plug-in points are provided as standard. Standard sizes with more plug-in points can be produced on request.



Tap-Off Box

Plugs with Fuse (optional)

### Fused Plugs and Tap-Off Boxes

Plugs and boxes of DTM Busbar systems are designed with different contact order in order to prevent misuse of the busbar. All plug and boxes are manufactured to be connected to the busbar in only one direction in order to prevent incorrect phase use.

Plugs (no fuse)

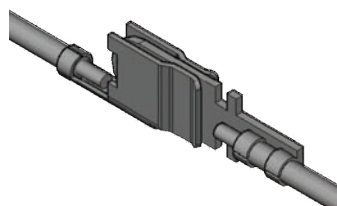


### Colored Caps for Phase Selection

The covers of DTM AB-E plug-in plugs are designed in different colors so that you can easily see which phase the luminaire is being fed.

### Silver Plated Contacts

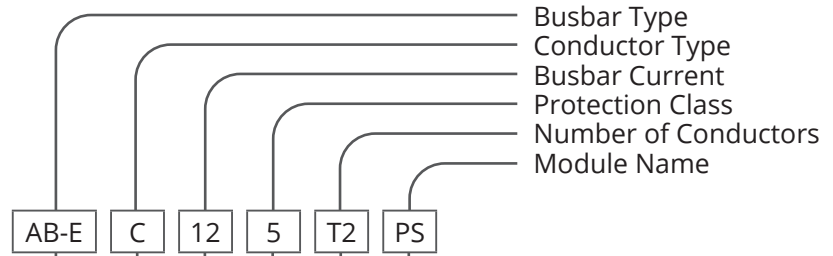
Contact resistances are minimized by coating conductor surfaces by silver.





**ORDER CODE SYSTEM**

**AB-E**



- Busbar Type
- Conductor Type
- Busbar Current
- Protection Class
- Number of Conductors
- Module Name

**BUSBAR NAME**

ALUMINUM	(A)
COPPER	(C)

AB-E CU	
CURRENT	BUSBAR CODE
25A	12
32A	13
40A	14
63A	16

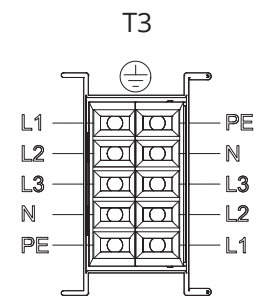
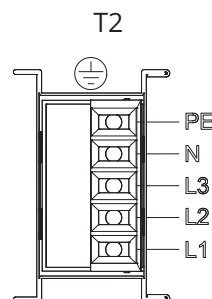
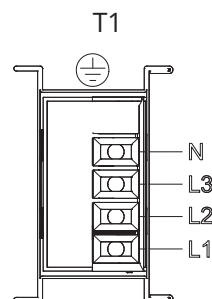
IP 55	5
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**Module Name**

Plug-In Busbar	PS
Elbow Modules	DM
Plug-In Mediate Length	PX
Tap-Off Plug	F
Start Feed Box	BM
End Feed Box	SM
Center Feed Box	OM
Termination Module	S
Suspension Set	A
Tap-Off Plug MCB Fused	SF
Joint Covers	E
U Suspension Element	UA
C Suspension Element	CA
L Suspension Element	LA
Wall Suspension Element	DA
Ceiling Suspension Element	TA

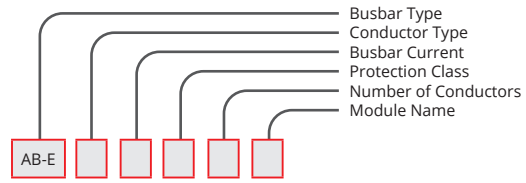
**Number of Conductors**

Number of Conductors	CODE	L1	L2	L3	N	1/2 GRND	CLEAN GRND	1/2 CLEAN GRND	GRND (BODY)
3P+N+PE (4P)	T1	✓	✓	✓	✓				✓
3P+N+PE+FE1 (5P)	T2	✓	✓	✓	✓	✓			✓
3P+N+PE+FE1 (5P) x2	T3	✓	✓	✓	✓	✓	✓		✓



TECHNICAL DETAILS		AB-E 25	AB-E 32	AB-E 40	AB-E 63
Active Number of Conductors	n° Cu	2	4	5	5
Busbar Sizes	A x B (mm)	39x57.5	39x57.5	39x57.5	39x57.5
Rated Current	In (A)	25	32	40	63
Busbar Cross Section (3P+N)	S (mm <sup>2</sup> )	3.09	3.09	6.11	12.5
Nominal Operating Voltage	Ue (V)	400	400	400	400
Nominal Insulation Voltage	Ui (V)	1000	1000	1000	1000
Nominal Frequency	50 Hz f (Hz)	50/60	50/60	50/60	50/60
Rated short-circuit current	I <sub>cw</sub> (kA) <sub>rms</sub>	2.2	2.5	3.4	4
Peak Current	I <sub>pk</sub> (kA)	3.12	3.15	5	5.88
Max. Thermal Limit	I <sup>2</sup> (A <sup>2</sup> sx10°)	0.61	0.75	0.99	1.19
Phase Resistance	R <sub>20</sub> (mΩ/m)	4.14	3.695	0.640	1.095
Phase Reactance	X (mΩ/m)	4.6	3.695	0.893	1.284
Phase Impedance	Z (mΩ/m)	8.52	3.695	5.09	1.851
Protective Busbar Resistance	R <sub>PE</sub> (mΩ/m)	1.02	1.02	1.02	0.72
Protective Bus Reactance	X <sub>PE</sub> (mΩ/m)	1.08	1.08	1.08	0.075
Fault Condition Resistance	R <sub>0</sub> (mΩ/m)	7.36	6.55	4.61	3.15
Fault Condition Reactance	X <sub>0</sub> (mΩ/m)	4.6	6.55	1.83	1.15
Fault Condition Impedance	Z <sub>0</sub> (mΩ/m)	8.52	7.11	5.52	2.6
Dispersed load voltage drop	$\Delta V_{3F} = \sqrt{3}/2 (R \cos\phi + 2X \sin\phi)$	5.66	4.85	2.42	1.29
Linear Busbar Weight	p (kg/m)	1.3	1.4	2.42	2.4
Combustion Load	(kWh/m)	0.79	0.79	0.79	0.81
Protection Class	IP	55	55	55	55
Joule effect loss at Rated Current	P (W/m)	6.9	10.03	13.05	19.9
Ambient temperature min. / max	t (°C)	-5/+50	-5/+50	-5/+50	-5/+50

Standard Sizes

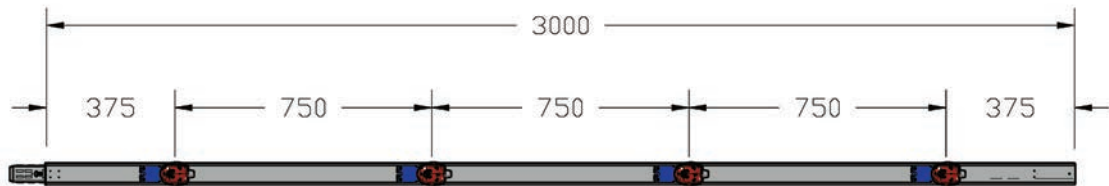


Plug-In Busbar Standard	PS
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SAMPLE ORDER

32 A COPPER  
Plug-in IP 55 5 Conductors

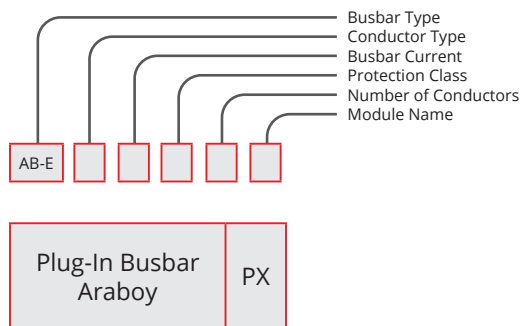
**AB-EC135T2PS**



AB-E



## Special Lengths

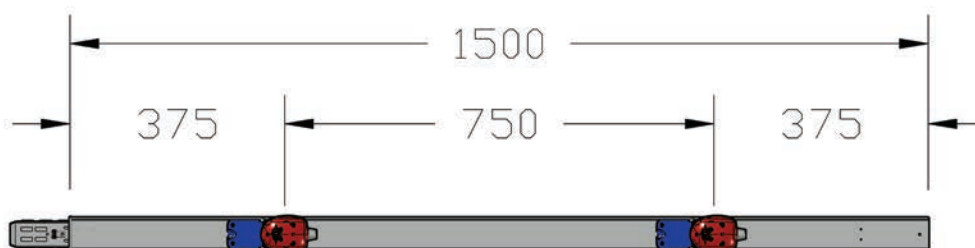


### SAMPLE ORDER

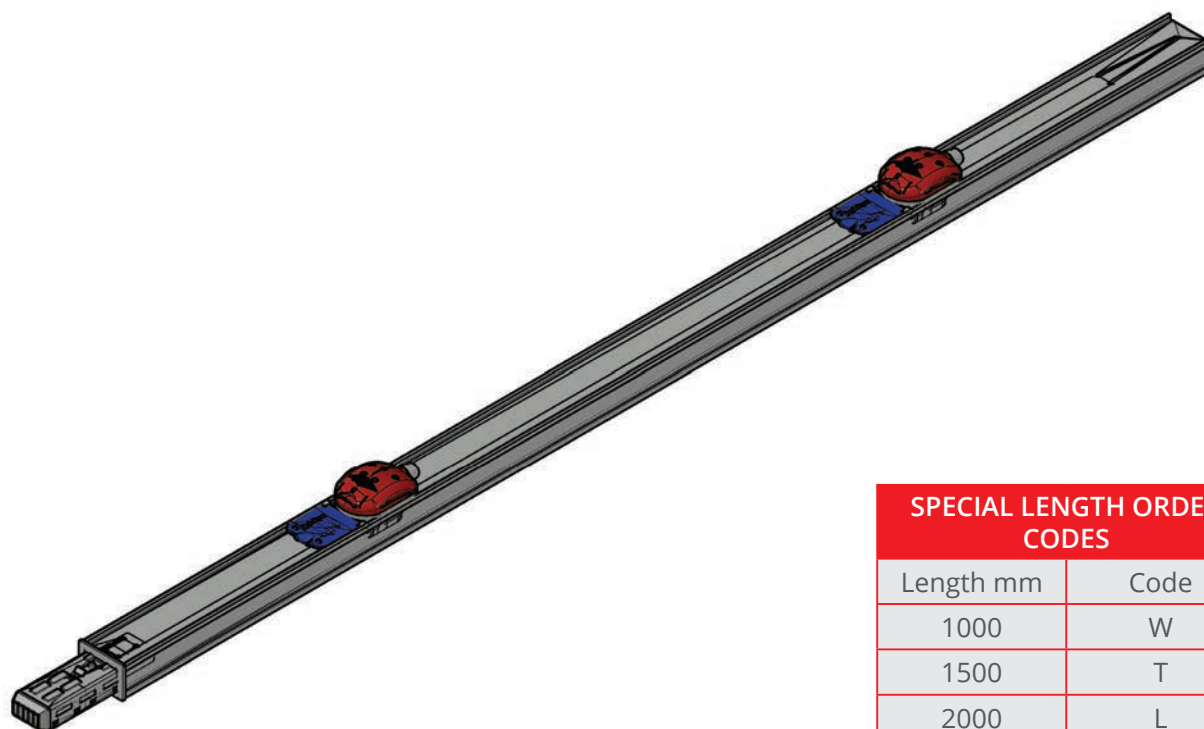
25 A COPPER  
Plug-in Special Length IP 55 5 Conductors

**AB-EC125T2PX**

AB-E

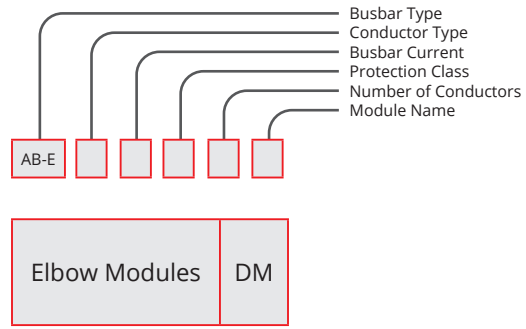


Special Lengths are produced as 1 m, 1.5 m and 2 m as standard.



SPECIAL LENGTH ORDER CODES	
Length mm	Code
1000	W
1500	T
2000	L

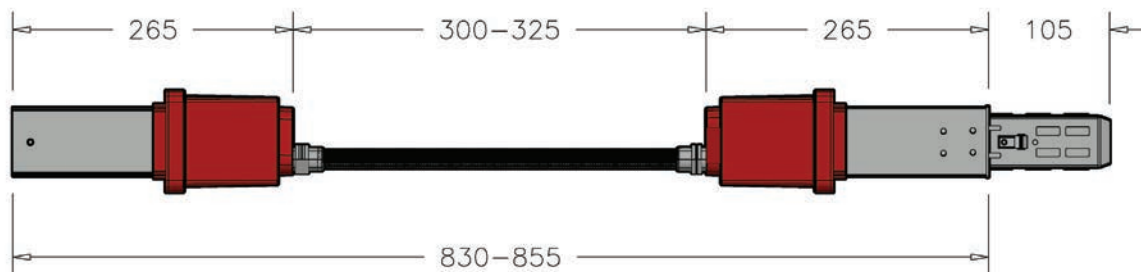
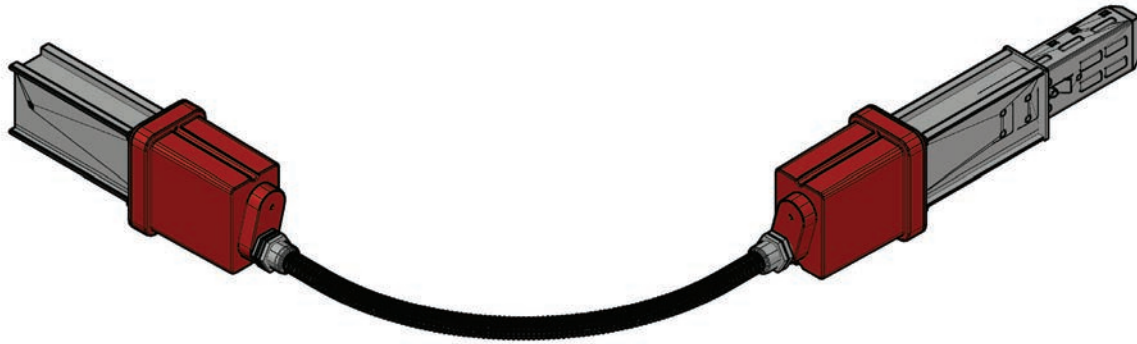
Elbow  
Modules



SAMPLE ORDER

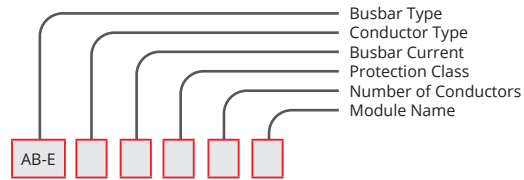
32 A COPPER  
Horizontal Elbow IP 55 5 Conductors

**AB-EC135T2DM**



AB-E

Feed Modules/Units



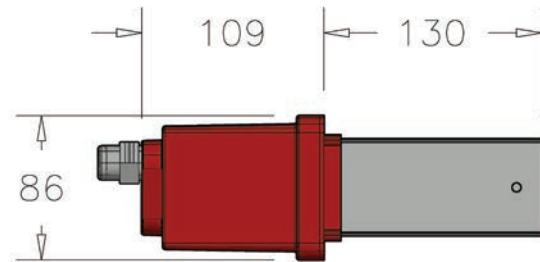
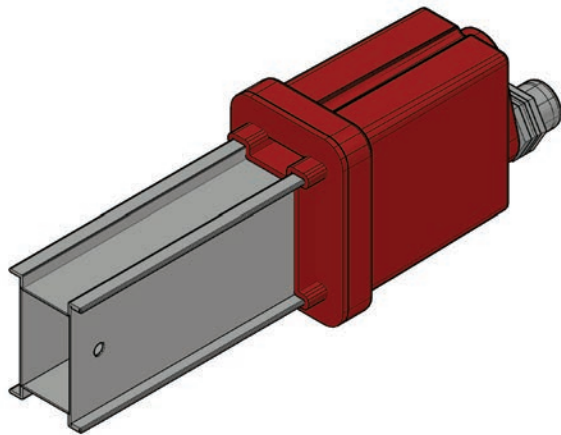
End Feed Module	SM
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SAMPLE ORDER

40 A COPPER  
End Feed Box IP 55 5 Conductors

**AB-EC145T2SM**

AB-E

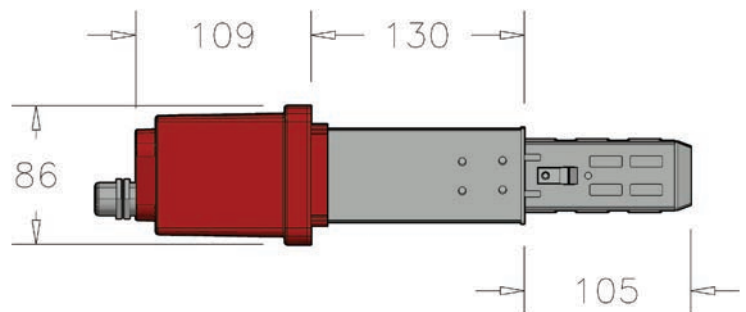
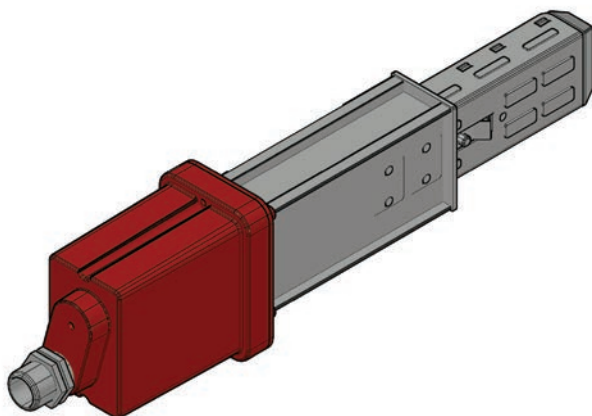


End Feed Box	BM
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SAMPLE ORDER

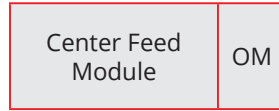
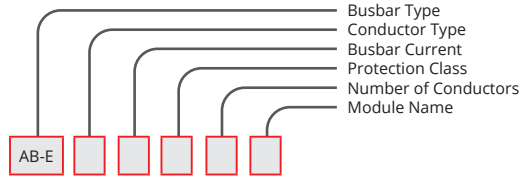
25 A COPPER  
Feed Box IP 55 5 Conductors

**AB-EC125T2BM**





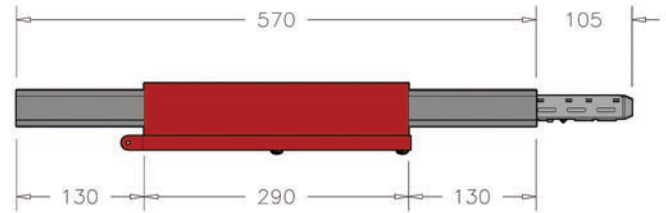
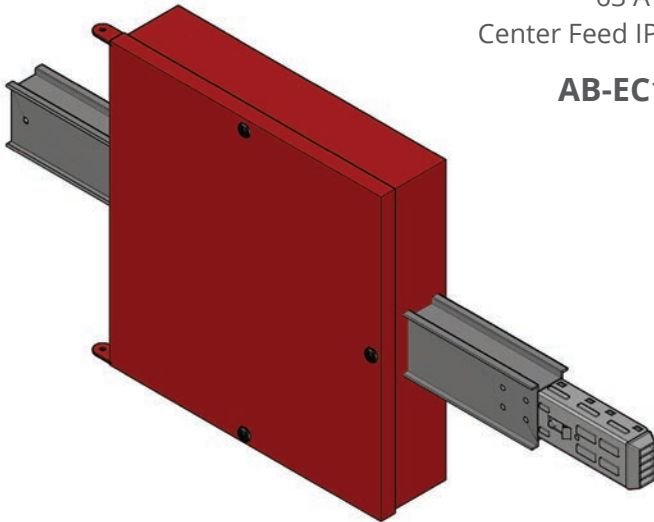
Center Feed Modules/Units



SAMPLE ORDER

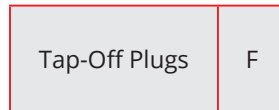
63 A COPPER  
Center Feed IP 55 5 Conductors

**AB-EC165T20M**



AB-E

Standard Plug



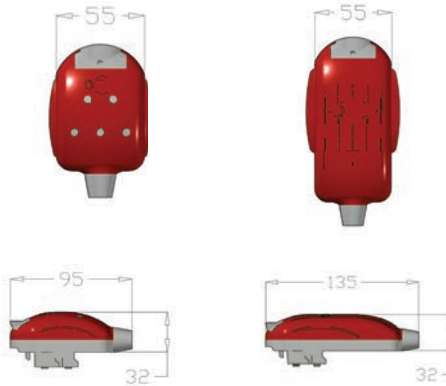
SAMPLE ORDER:

25 A COPPER  
Tap-Off plug IP 55 5 Conductors

**AB-EC255T212F**



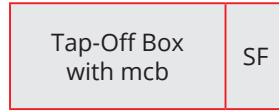
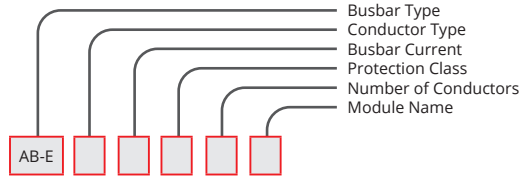
Fused Plug



**TAP-OFF PLUGS**

AMR.	PHASE	CODE
10	L1,N,PE	1
	L2,N,PE	2
	L3,N,PE	3
	L1,L2,L3,N,PE	4
16	L1,N,PE	5
	L2,N,PE	6
	L3,N,PE	7
	L1,L2,L3,N,PE	8
25	L1,N,PE	9
	L2,N,PE	10
	L3,N,PE	11
	L1,L2,L3,N,PE	12
32	L1,N,PE	13
	L2,N,PE	14
	L3,N,PE	15
	L1,L2,L3,N,PE	16

## Tap-Off Box with mcb



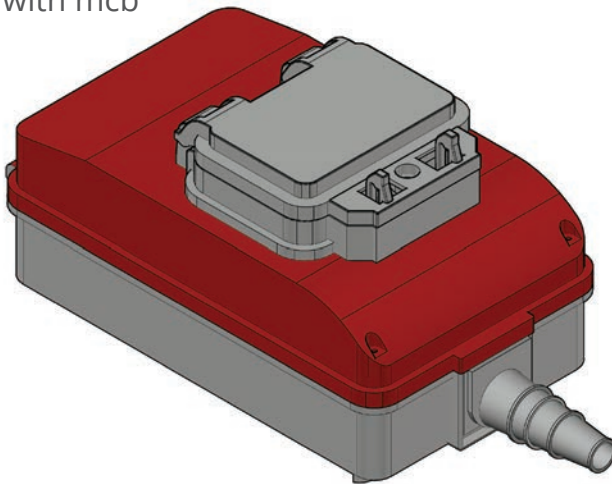
### SAMPLE ORDER

32 A COPPER  
Tap-Off Box IP 55 5 Conductors

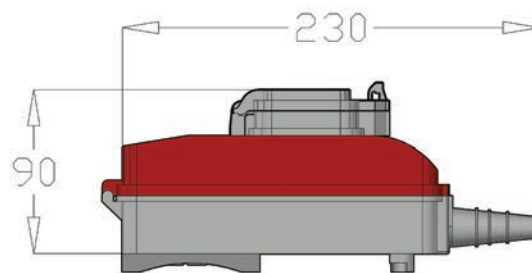
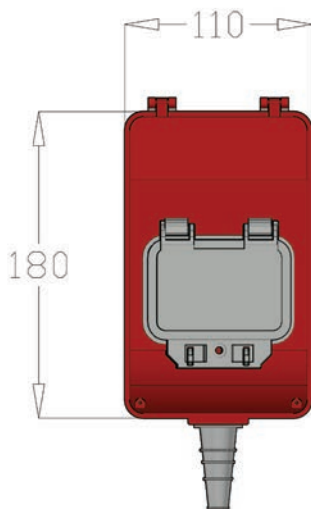
**AB-EC325T232SF**

AB-E

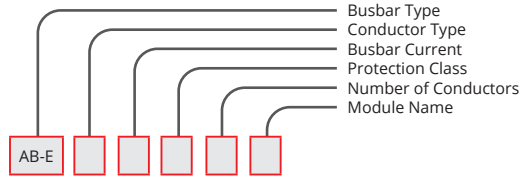
Tap-Off Box with mcb



TAP-OFF PLUG		
AMR.	PHASE	CODE
10	L1,N,PE	17
	L2,N,PE	18
	L3,N,PE	19
	L1,L2,L3,N,PE	20
16	L1,N,PE	21
	L2,N,PE	22
	L3,N,PE	23
	L1,L2,L3,N,PE	24
25	L1,N,PE	25
	L2,N,PE	26
	L3,N,PE	27
	L1,L2,L3,N,PE	28
32	L1,N,PE	29
	L2,N,PE	30
	L3,N,PE	31
	L1,L2,L3,N,PE	32



Joint Covers

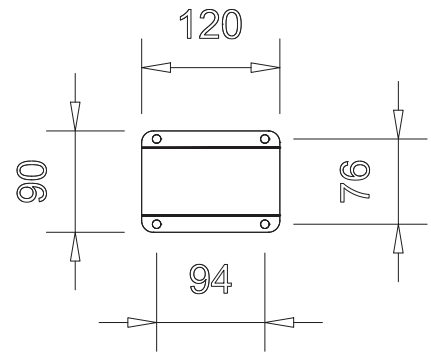
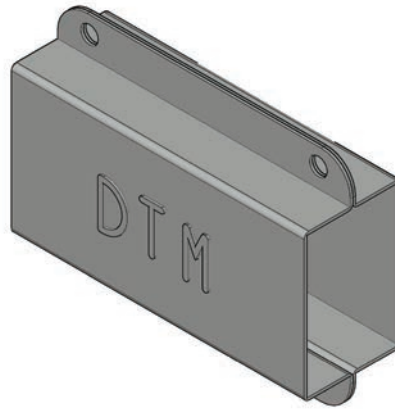
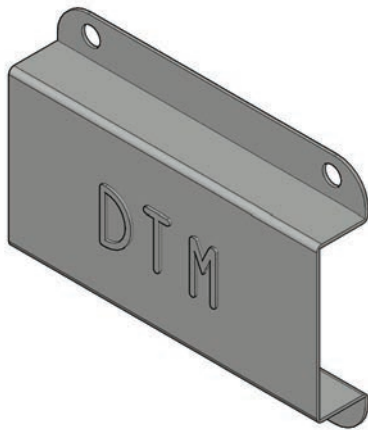
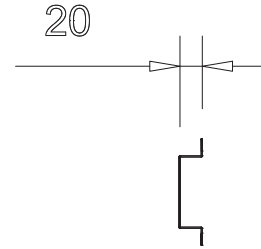


Joint Covers	S
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SAMPLE ORDER

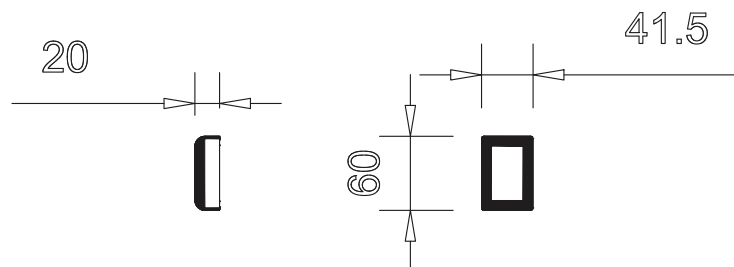
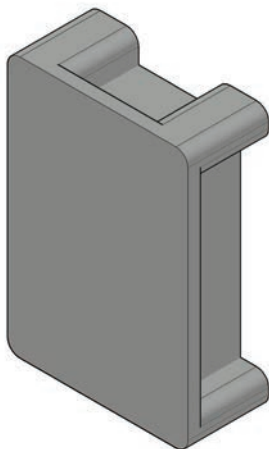
32 A COPPER  
Termination IP 55 5 Conductors

**AB-EC135T2S**



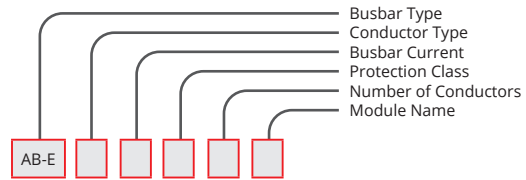
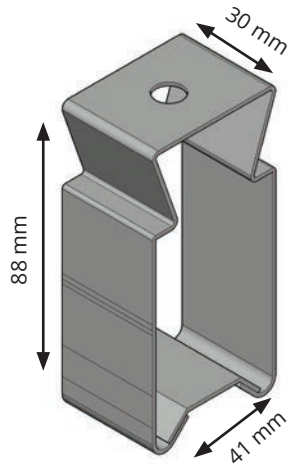
End Covers	E
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**AB-EC5T2E**



AB-E

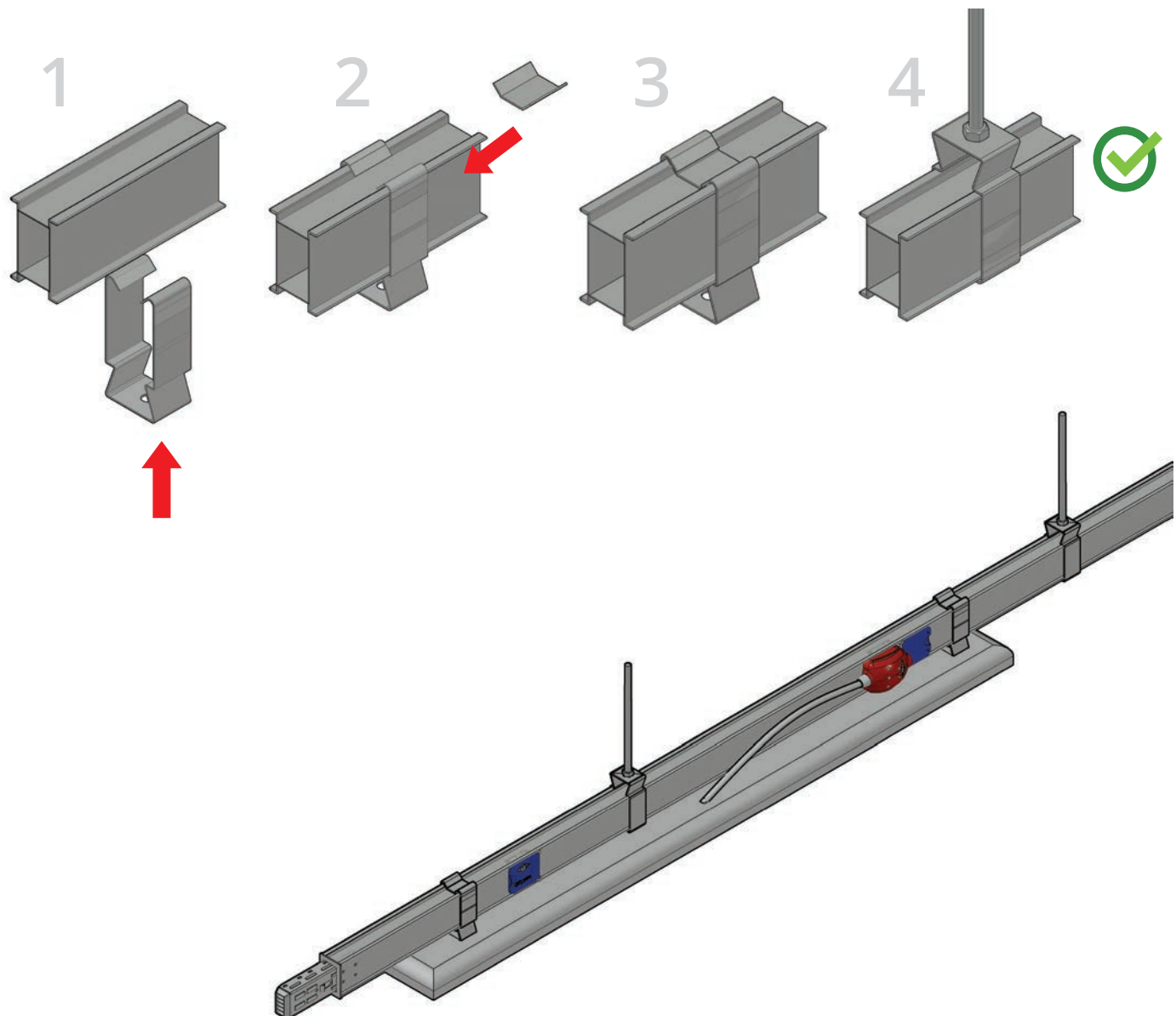
Busbar and Luminaire Hanger



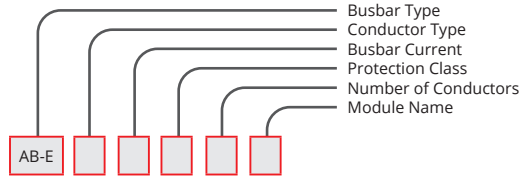
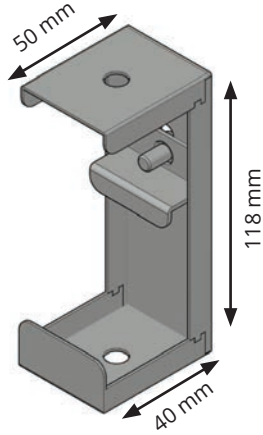
Suspension Element (U)	UA
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AB-EUA

AB-E



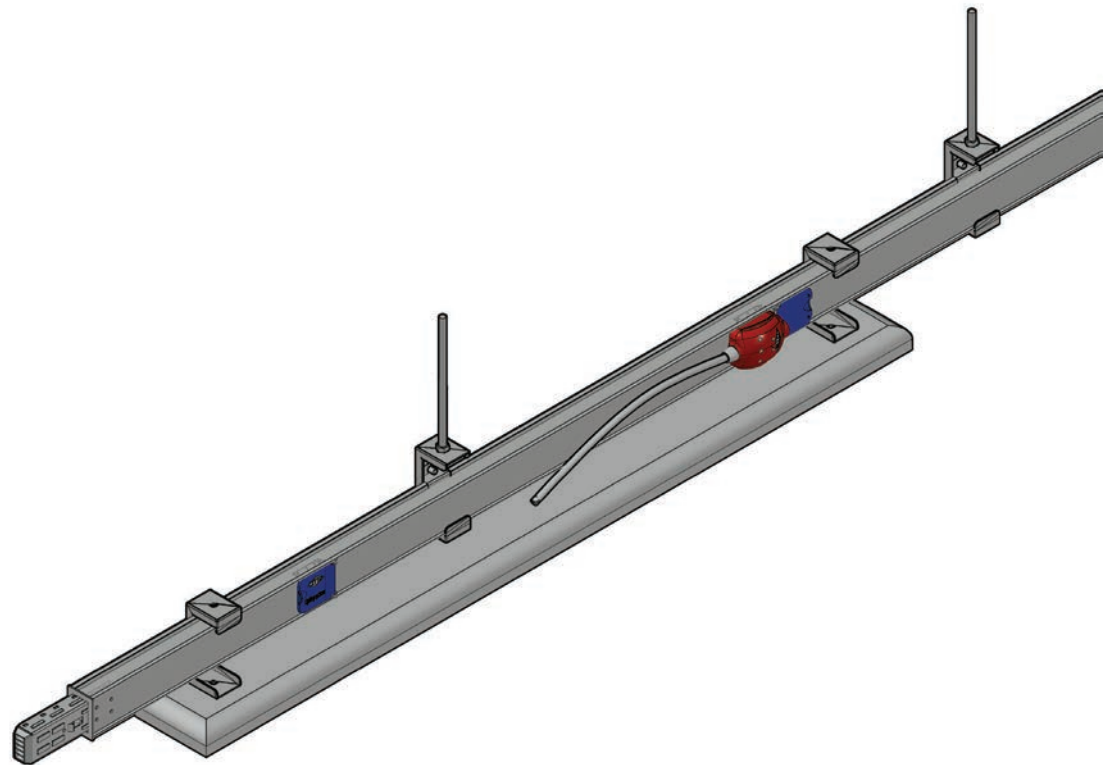
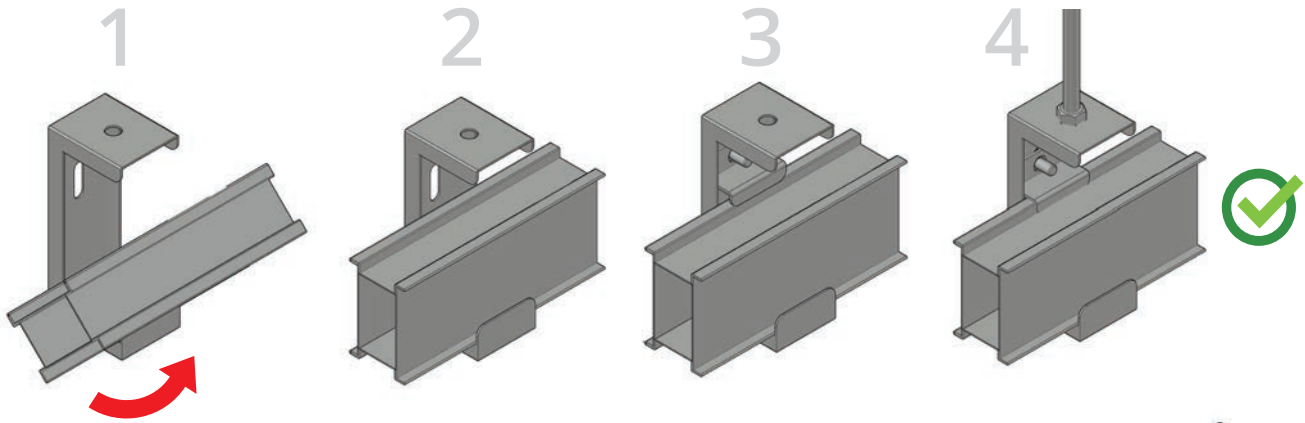
Busbar and Luminaire Hanger



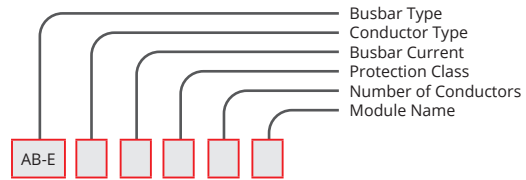
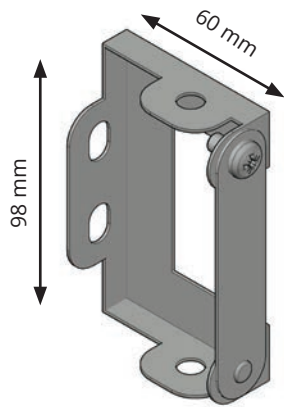
AB-E					
Suspension Element (L)		LA			

AB-ELA

AB-E



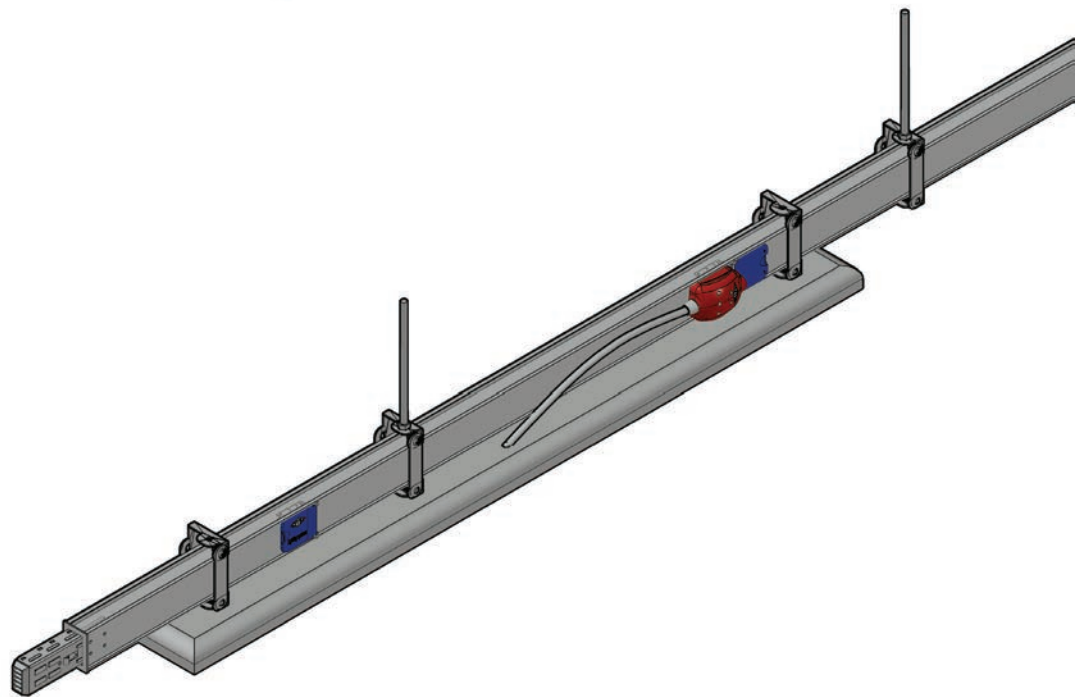
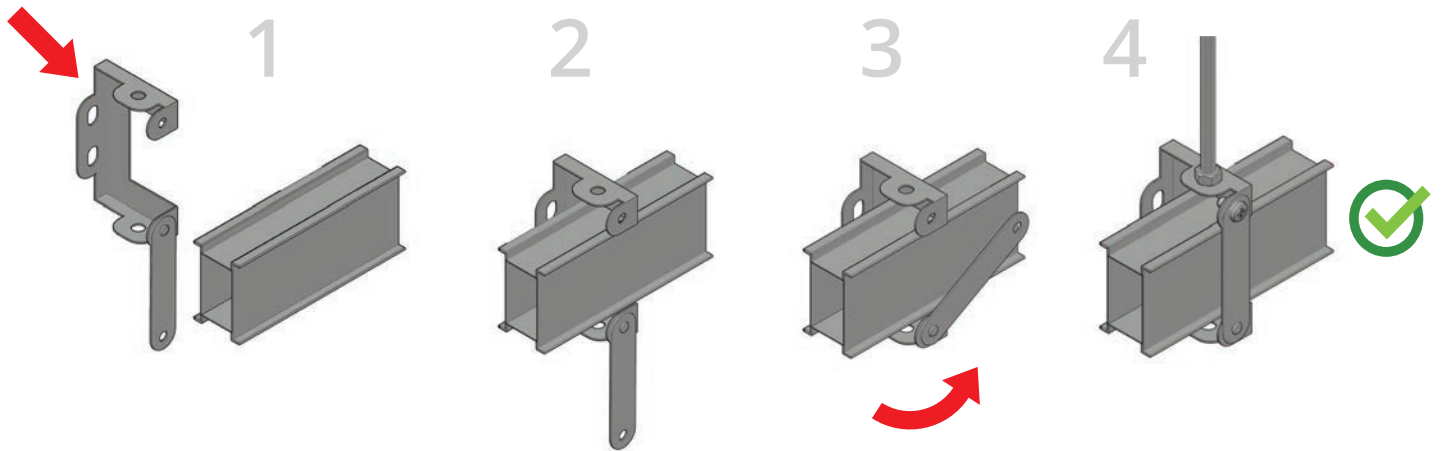
Busbar and  
Luminaire  
Hanger



Suspension Element (C)	CA
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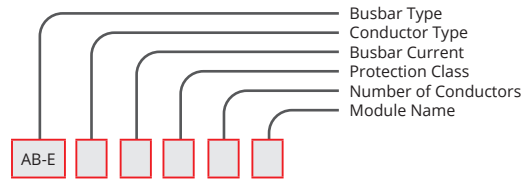
AB-ECA

AB-E



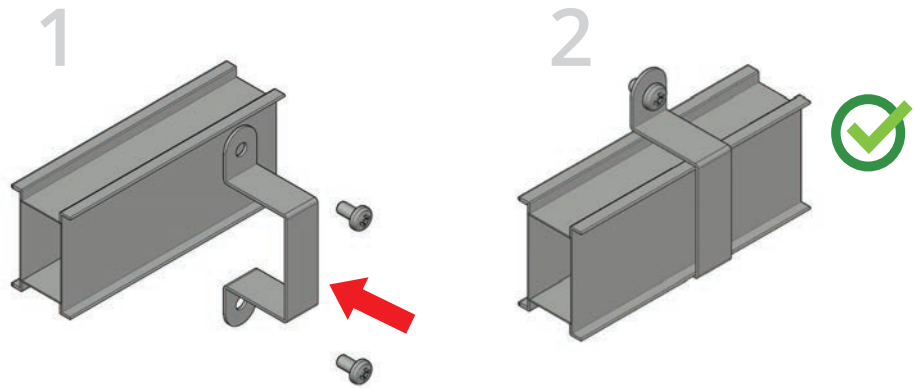
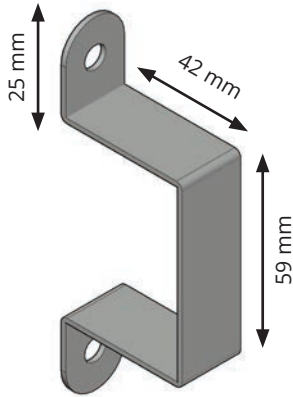


Wall  
Suspension  
Element



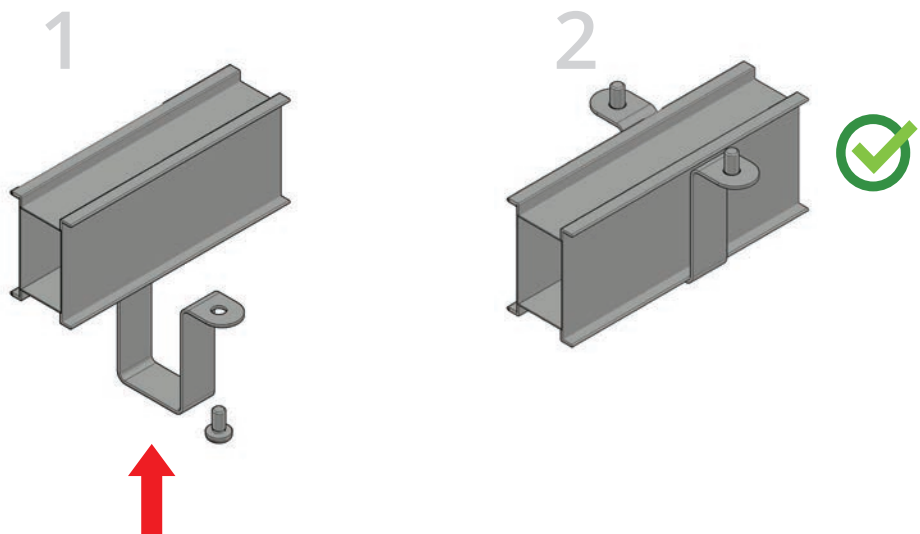
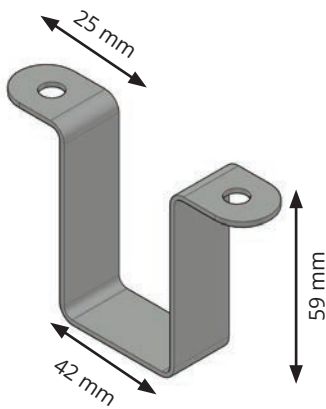
Wall Suspension Element	DA
-------------------------------	----

**AB-EDA**



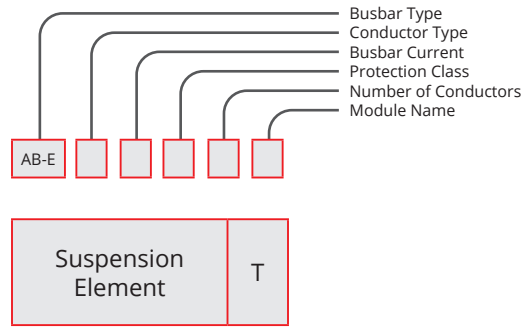
Ceiling Suspension Element	TA
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**AB-ETA**



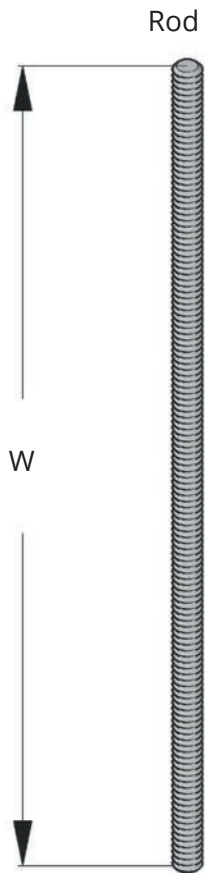
AB-E

## Suspension Elements



AB-ET

AB-E



Extension Element



Pullout Dowel



Steel Nut



Washer



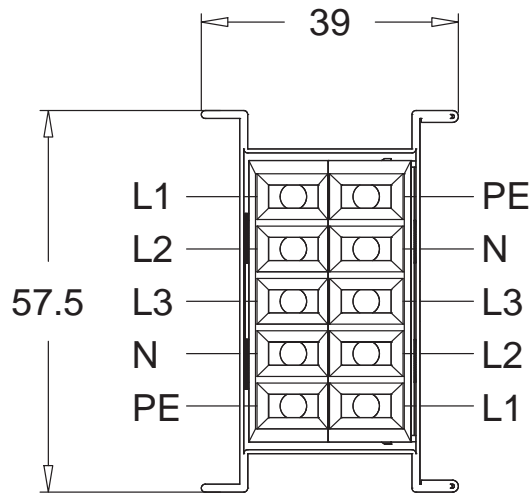
CONNECTION ELEMENTS		
PART	W (mm)	CODE
B-E 8 Tij Hanger (M8)	500	T101
B-E 8 Tij Hanger (M8)	1000	T102
(M8) Extension Element	-	T103
M 8 Pull Dowel	-	T104
M 8 Steel Nut	-	T105

Busbar Technical Information

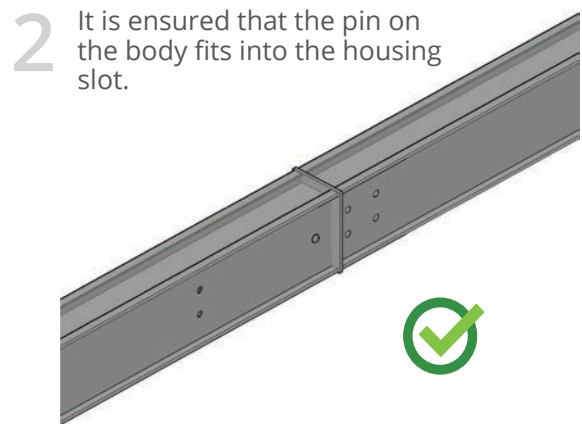
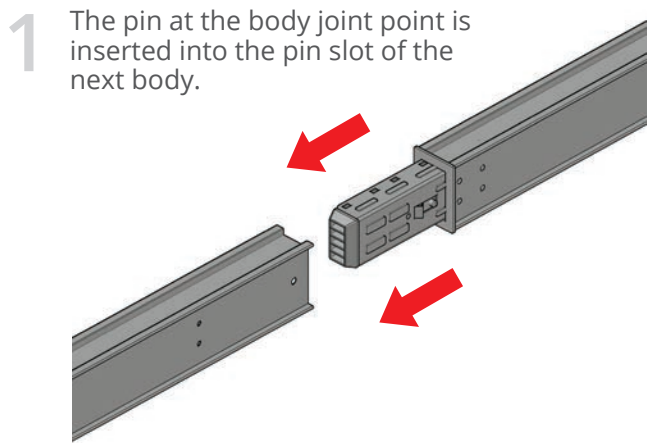
AB-E

COPPER BUSBAR SIZES AND WEIGHT					
AMPER CLASS	BUSBAR mm			FEEDER KG	
				3P+N+PE (4)	3P+N+PE+FE1 (5)
25A	39	X	57.5	1.15	1.18
32A	39		57.5	1.19	1.3
40A	39		57.5	1.40	1.5
63A	39		57.5	1.48	1.55

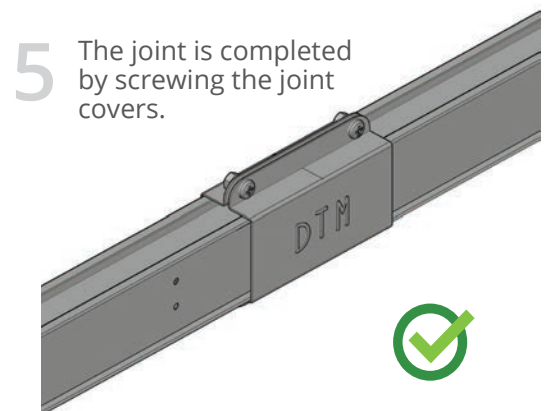
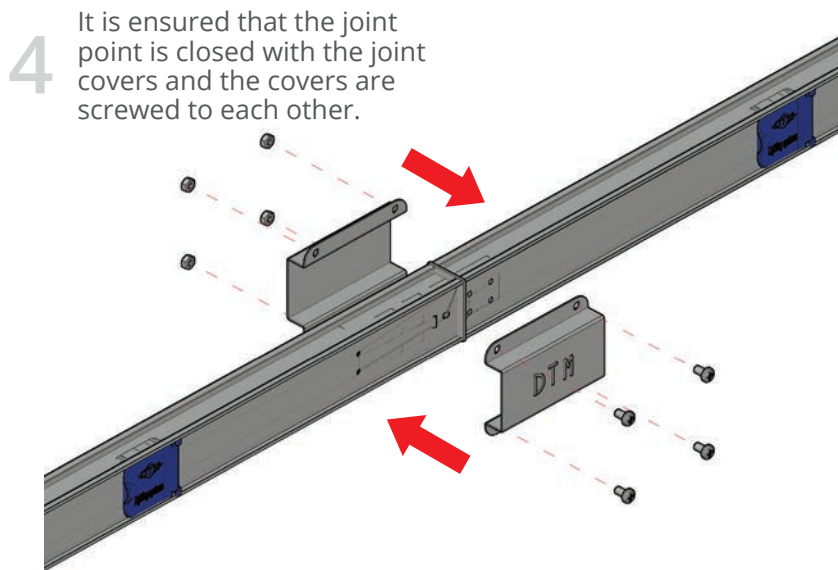
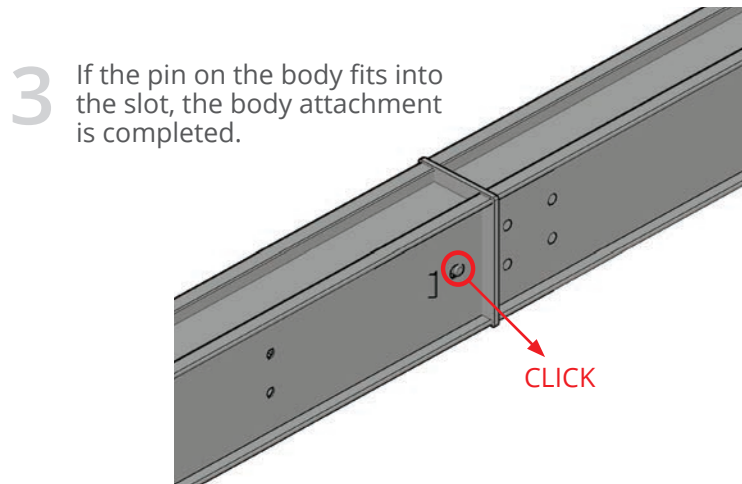
Up to 10 Conductors



## Installation



AB-E



The background is a vibrant blue gradient with a complex geometric pattern. It features overlapping squares and rectangles in various shades of blue, some containing a grid of small white dots. The overall effect is a modern, technical, and digital aesthetic.

**SP-H  
SERIES  
100A-160A**

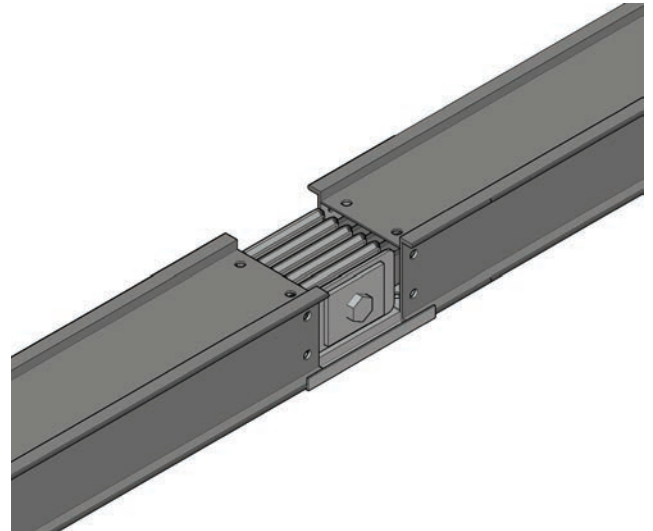
<b>General Information</b>	26
<b>Project Information</b>	27
<b>Accessories</b>	
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Special Lengths	30
Elbow Modules	31
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Tap-Off Boxes	33
Feed Units	34
<b>Technical Information</b>	
Busbar Technical Information	36
<b>Installation</b>	
Installation Method	37



## GENERAL FEATURES

DTM SP-H 100A -160A Busbar trunking systems are used as an power distribution line where there is a need for energy distribution.

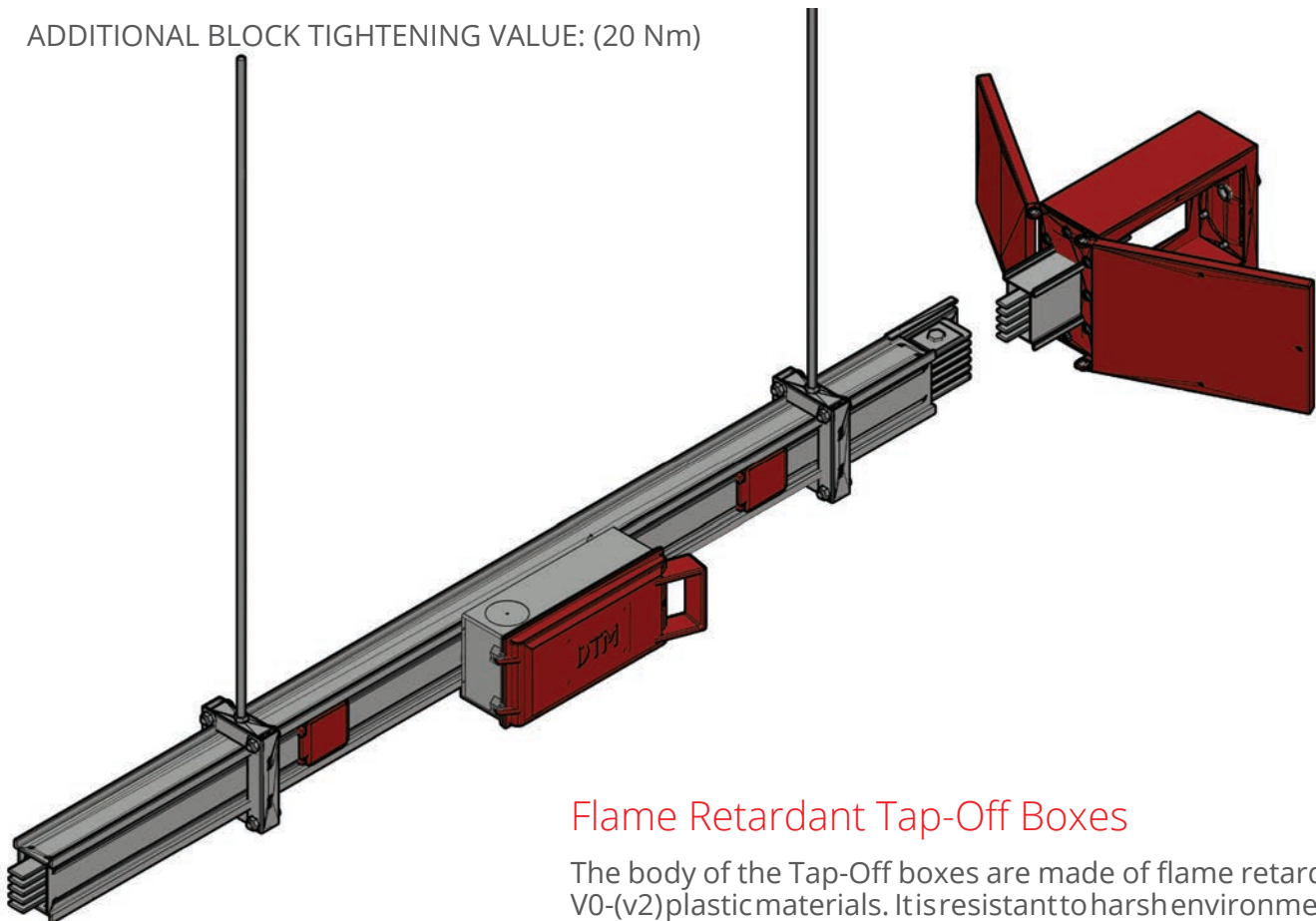
The outer body is produced from standard galvanized sheet metal or RAL7038 painted (optional).



### Joint Stack

With the plug-in screw system, the assembly is done safely in a short time. It is used by tightening the screw with the nut.

ADDITIONAL BLOCK TIGHTENING VALUE: (20 Nm)



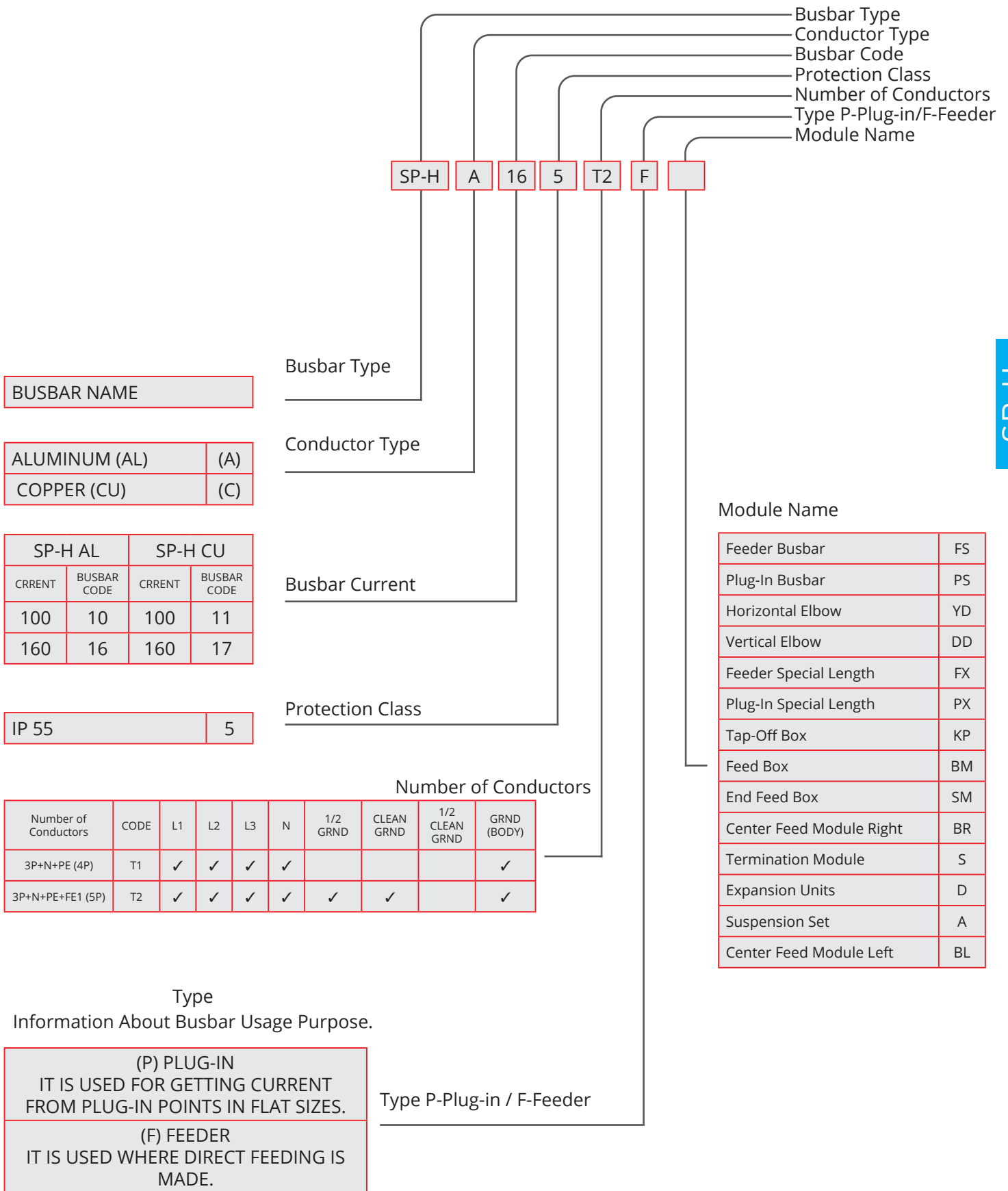
### Flame Retardant Tap-Off Boxes

The body of the Tap-Off boxes are made of flame retardant V0-(v2) plastic materials. It is resistant to harsh environmental conditions and resistant to high temperatures.

It is possible to supply currents up to 80 A with Tap-Off boxes.

Tap-Off boxes are easily and safely installed without requiring any elements.

## ORDER CODE SYSTEM



SP-H

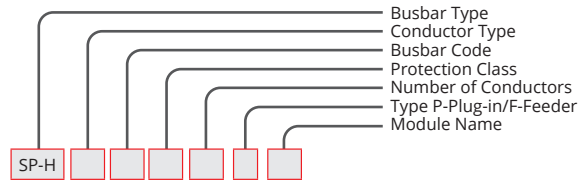
**TECHNICAL TABLE (SP-H AL)**
**ALUMINUM CONDUCTOR (AL)**

Rated Current	In	A	100	160
Busbar Code			SP-HA10	SP-HA16
Protection Class	IP55			
Standards	IEC 61439-6 TS EN 61439-6 IEC 61439-1 TS EN 61439-1			
Max. Rated Operating Voltage	Ue	Vac	690	400-1000
Rated Impact Withstand Voltage	Uimp	kV	8	400-1000
Frequency	f	Hz	50	400-1000
Rated Insulation Voltage	Ui	V	1000	Category IV
Mechanical Impact Resistance (IK Code)	Plug-in Busbar IK10			
Measures for the Protection of People	Basic Protection (TS-HD 60364-4-41, item A1)			
Rated Short Term Current (1s)	Icw	kA	3.77	6
Rated Peak Withstand Current	Ipk	kA	5.44	9.18
Rated Short Time Current for Neutral Conductor (1s)	Icw	kA	2.22	3.6
Rated Peak Withstanding Current for Neutral Conductor	Ipk	kA	3.15	5.29
Rated Short Time Current For Prot. Circuit (1s)	Icw	kA	2.22	3.6
Rated Peak Withstand Current for Prot. Circuit	Ipk	kA	3.15	5.29

**TECHNICAL TABLE (SP-H CU)**
**COPPER CONDUCTOR (CU)**

Rated Current	In	A	100	160
Busbar Code			SP-HC11	SP-HC17
Protection Class	IP55			
Standards	IEC 61439-6 TS EN 61439-6 IEC 61439-1 TS EN 61439-1			
Max. Rated Operating Voltage	Ue	Vac	690	
Rated Impact Withstand Voltage	Uimp	kV	8	
Frequency	f	Hz	50	
Rated Insulation Voltage	Ui	V	1000	Category IV
Mechanical Impact Resistance (IK Code)	Plug-in Busbar IK10			
Measures for the Protection of People	Basic Protection (TS-HD 60364-4-41, item A1)			
Rated Short Term Current (1s)	Icw	kA	3.7	6.5
Rated Peak Withstand Current	Ipk	kA	5.3	10.3
Rated Short Time Current for Neutral Conductor (1s)	Icw	kA	2.2	3.7
Rated Peak Withstanding Current for Neutral Conductor	Ipk	kA	3.25	5.5
Rated Short Time Current For Prot. Circuit (1s)	Icw	kA	2.2	3.7
Rated Peak Withstand Current for Prot. Circuit	Ipk	kA	3.25	5.5

Standard Lengths

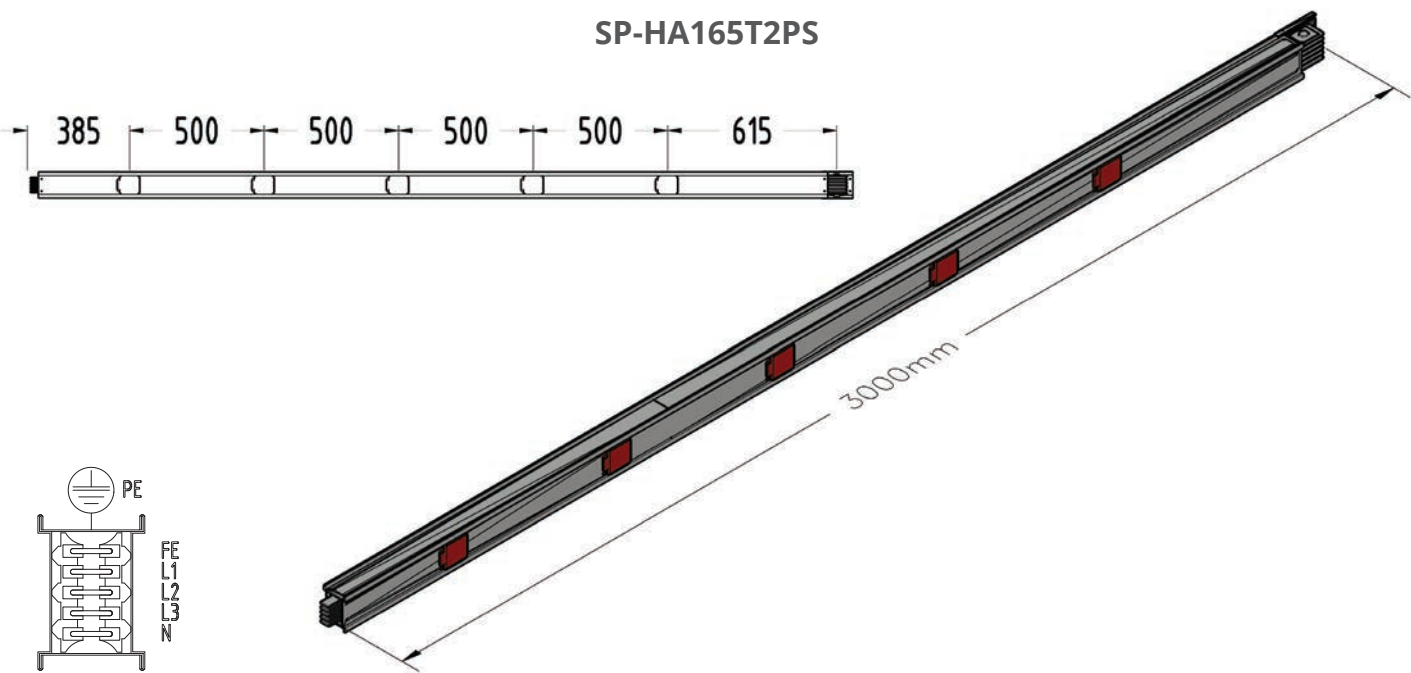


Plug-In Busbar	PS
----------------	----

SAMPLE ORDER

160 A Aluminum,  
Plug-in IP 55 5 Conductors

**SP-HA165T2PS**



SP-H

Feeder Busbar	FS
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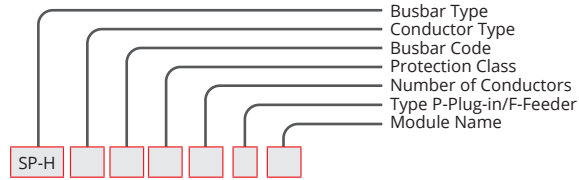
SAMPLE ORDER

100 A Aluminum,  
Feeder IP 55 5 Conductors

**SP-HA105T2FS**



Special Lengths

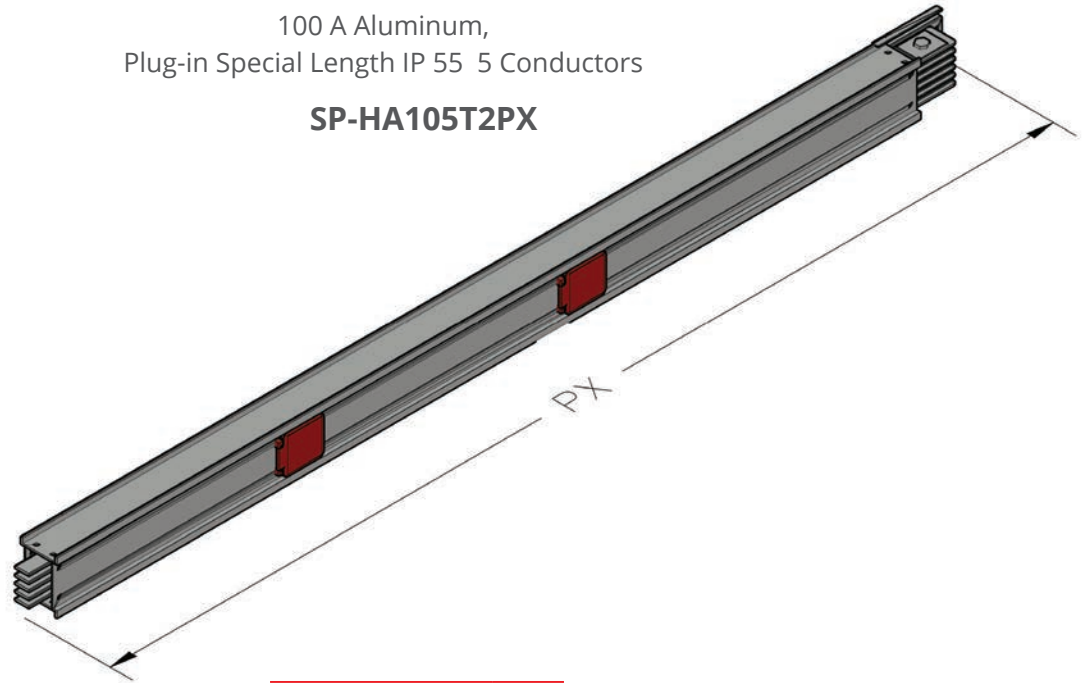


Plug-in Busbar Special Length	PX
----------------------------------	----

SAMPLE ORDER

100 A Aluminum,  
Plug-in Special Length IP 55 5 Conductors

**SP-HA105T2PX**

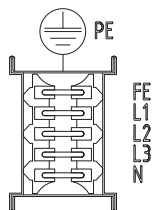
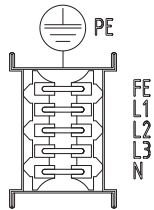
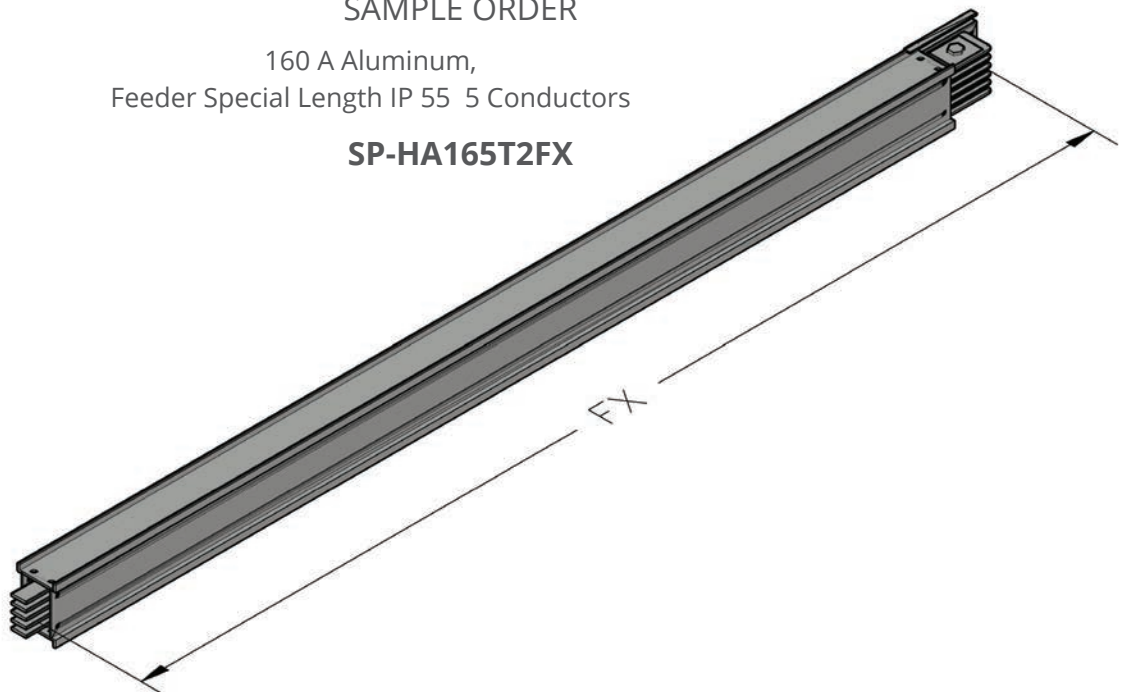


Feeder Busbars Special Length	FX
----------------------------------	----

SAMPLE ORDER

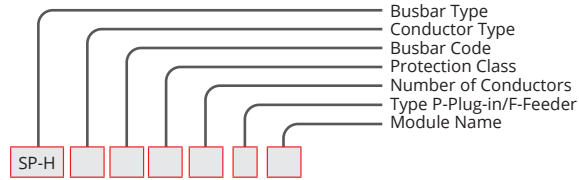
160 A Aluminum,  
Feeder Special Length IP 55 5 Conductors

**SP-HA165T2FX**



SP-H

# Elbow Modules

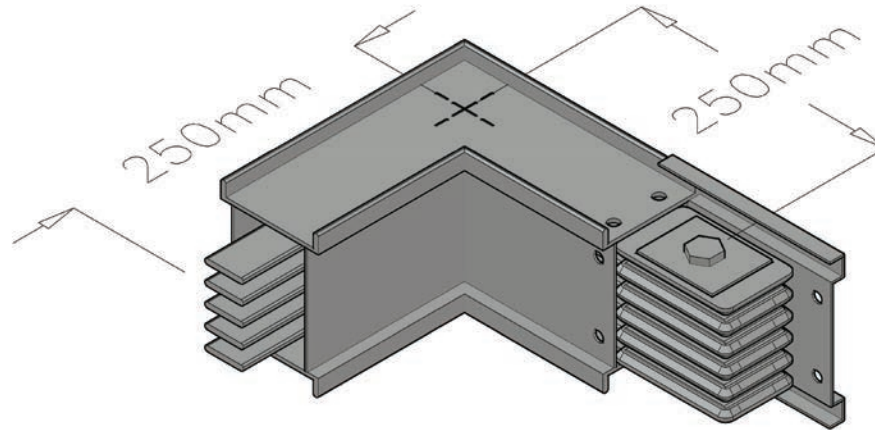
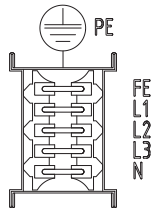


Horizontal Elbow Module	YD
-------------------------	----

SAMPLE ORDER

100 A Aluminum,  
Horizontal Elbow IP 55 5 Conductors

**SP-HA105T2YD**



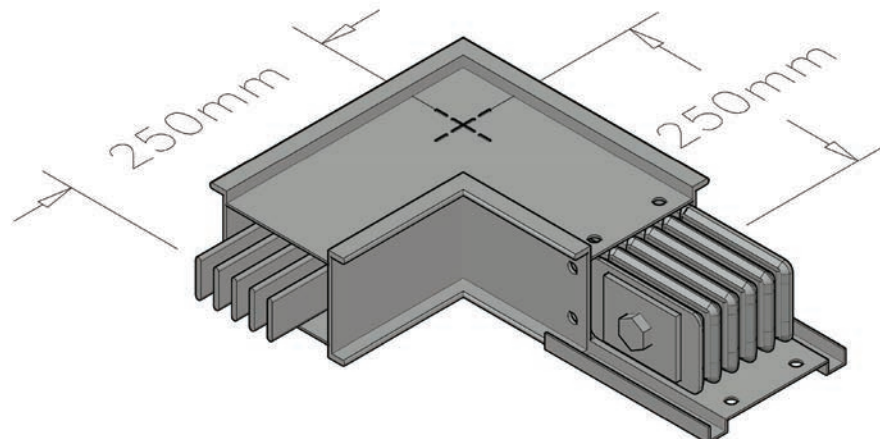
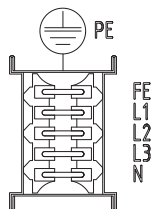
SP-H

Vertical Elbow Module	DD
-----------------------	----

SAMPLE ORDER

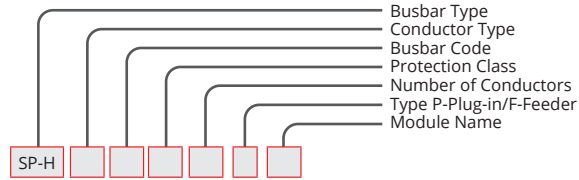
160 A Aluminum,  
Vertical Elbow IP 55 5 Conductors

**SP-HA165T2DD**





Expansion Units

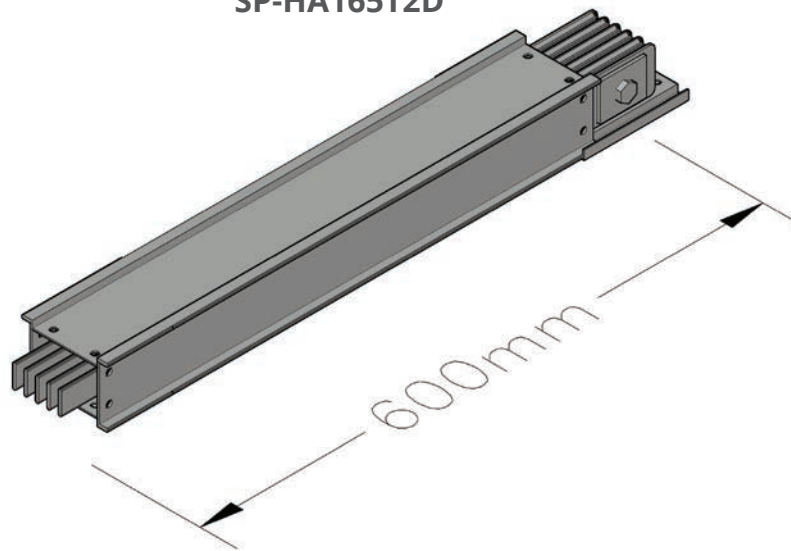


Expansion Module	D
------------------	---

SAMPLE ORDER

160 A Aluminum,  
Expansion IP 55 5 Conductors

**SP-HA165T2D**

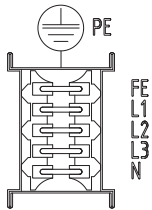
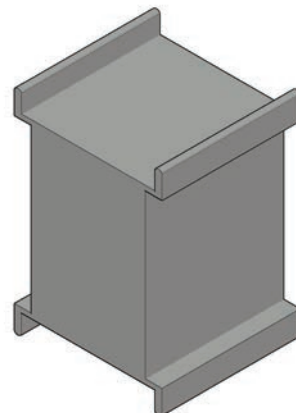


End Covers	S
------------	---

SAMPLE ORDER

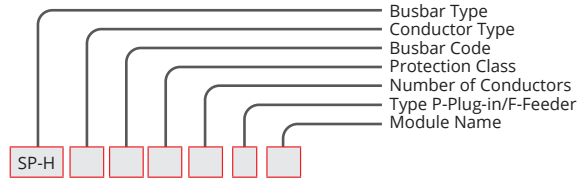
100 A Aluminum,  
Termination IP 55 5 Conductors

**SP-HA105T2S**



SP-H

# Tap-Off Boxes



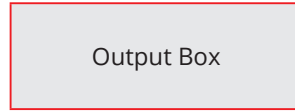
Standard Tap-Off Boxes (EMPTY) 16A			
CRRNT	Conductor	CONFIGURATION	CODE
16	4	L1,L2,L3,N,PE (BODY)	SPHA1654B1
	5	L1,L2,L3,N,PE +(BODY)	SPHA1655B2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA1655B3

Standard Tap-Off Boxes (EMPTY) 32A			
CRRNT	Conductor	CONFIGURATION	CODE
32	4	L1,L2,L3,N,PE (BODY)	SPHA3254B1
	5	L1,L2,L3,N,PE +(BODY)	SPHA3255B2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA3255B3

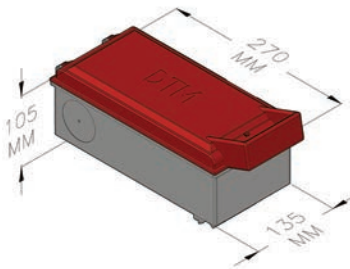
Standard Tap-Off Boxes (EMPTY) 40A			
CRRNT	Conductor	CONFIGURATION	CODE
40	4	L1,L2,L3,N,PE (BODY)	SPHA4054B1
	5	L1,L2,L3,N,PE +(BODY)	SPHA4055B2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA4055B3

Standard Tap-Off Boxes (EMPTY) 63A			
CRRNT	Conductor	CONFIGURATION	CODE
63	4	L1,L2,L3,N,PE (BODY)	SPHA6354B1
	5	L1,L2,L3,N,PE +(BODY)	SPHA6355B2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA6355B3

Standard Tap-Off Boxes (EMPTY) 80A			
CRRNT	Conductor	CONFIGURATION	CODE
80	4	L1,L2,L3,N,PE (BODY)	SPHA8054B1
	5	L1,L2,L3,N,PE +(BODY)	SPHA8055B2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA8055B3



**SAMPLE ORDER**  
16 A Aluminum,  
Tap-Off Box Empty  
IP 55 5 Conductors  
**SPHA1655B2**



Standard Tap-Off Boxes (MCB) 16A			
CRRNT	Conductor	CONFIGURATION	CODE
16	4	L1,L2,L3,N,PE (BODY)	SPHA1654M1
	5	L1,L2,L3,N,PE +(BODY)	SPHA1655M2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA1655M3

Standard Tap-Off Boxes (MCB) 32A			
CRRNT	Conductor	CONFIGURATION	CODE
32	4	L1,L2,L3,N,PE (BODY)	SPHA3254M1
	5	L1,L2,L3,N,PE +(BODY)	SPHA3255M2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA3255M3

Standard Tap-Off Boxes (MCB) 40A			
CRRNT	Conductor	CONFIGURATION	CODE
40	4	L1,L2,L3,N,PE (BODY)	SPHA4054M1
	5	L1,L2,L3,N,PE +(BODY)	SPHA4055M2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA4055M3

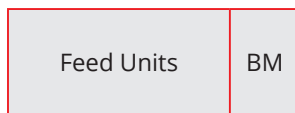
Standard Tap-Off Boxes (MCB) 63A			
CRRNT	Conductor	CONFIGURATION	CODE
63	4	L1,L2,L3,N,PE (BODY)	SPHA6354M1
	5	L1,L2,L3,N,PE +(BODY)	SPHA6355M2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA6355M3

Standard Tap-Off Boxes (MCB) 80A			
CRRNT	Conductor	CONFIGURATION	CODE
80	4	L1,L2,L3,N,PE (BODY)	SPHA8054M1
	5	L1,L2,L3,N,PE +(BODY)	SPHA8055M2
	5	L1,L2,L3,N,CPE,PE (BODY)	SPHA8055M3

**SWITCH TYPE CODE**

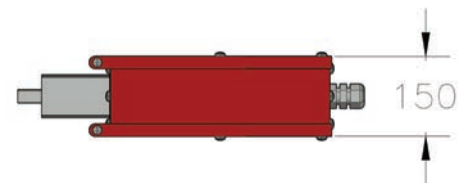
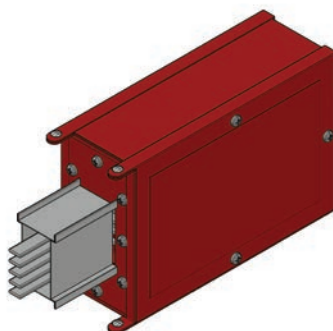
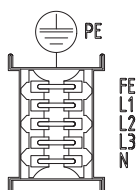
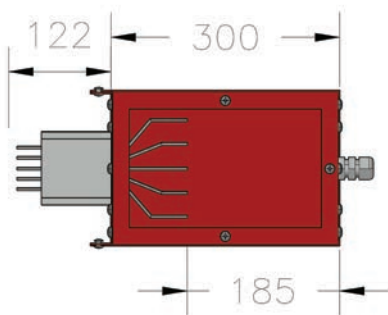
SWITCH	EMPTY
M	B

# Feed Units



**SAMPLE ORDER**  
160 A Aluminum,  
Feed Unit IP 55 5 Conductors

**SP-HA165T2BM**



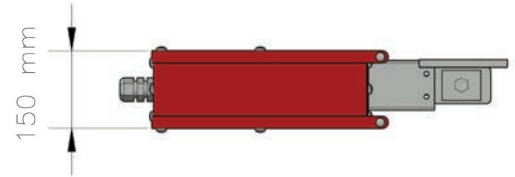
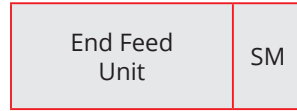
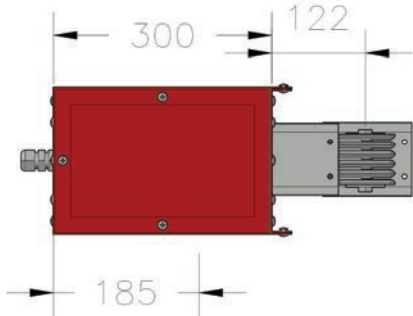
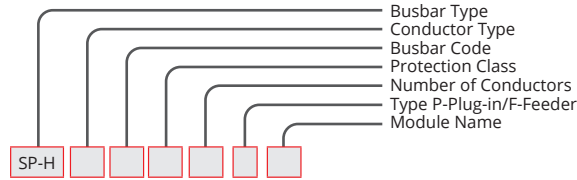
**FITTING PLATES**

AMR.	FITTING TYPE	CODE
100	PG21	BR1
160	PG36	BR2

**SWITCH TYPE CODE**

SWITCH	EMPTY
M	B

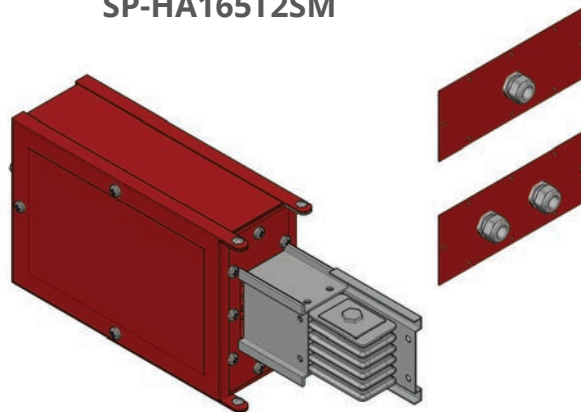
Feed Units



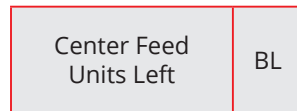
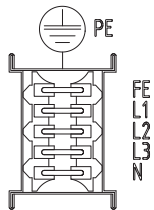
SAMPLE ORDER

160 A Aluminum,  
Feed Unit IP 55 5 Conductors

**SP-HA165T2SM**



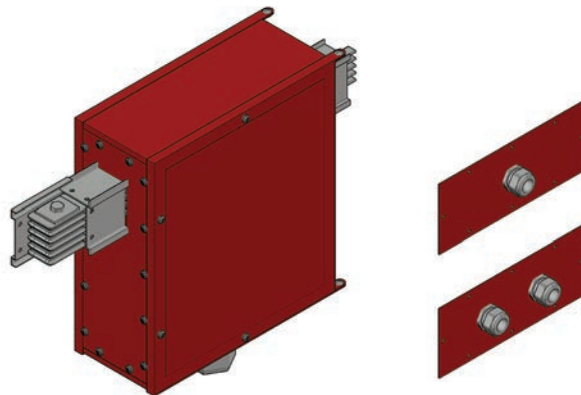
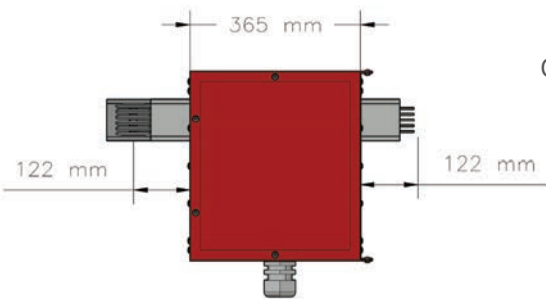
FITTING PLATES		
AMR.	FITTING TYPE	CODE
100	PG21	SR1
160	PG36	SR2



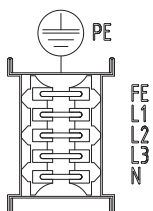
SAMPLE ORDER

100 A Aluminum,  
Center Feed Unit IP 55 5 Conductors

**SP-HA105T2BL**

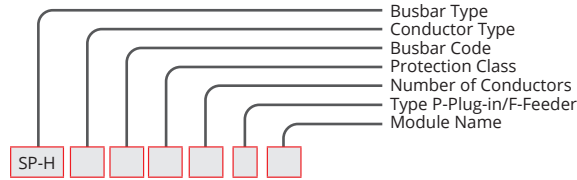
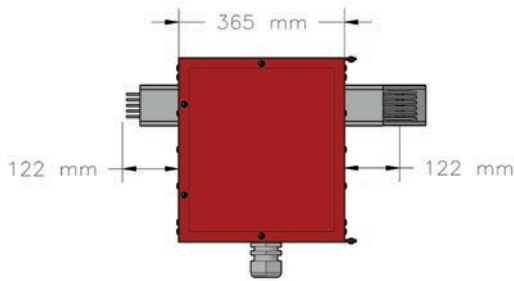


FITTING PLATES		
AMR.	FITTING TYPE	CODE
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160	PG36	OR2

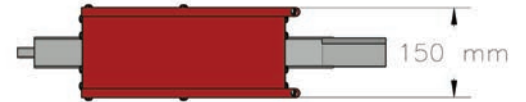


SP-H

Feed Units



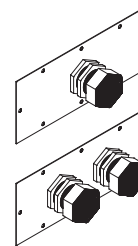
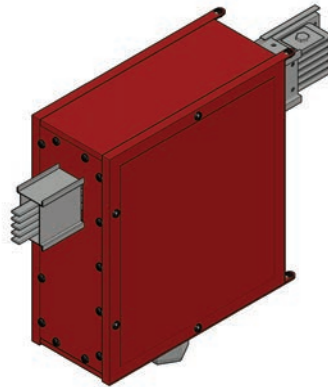
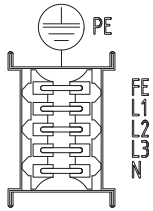
Center Feed Units Right	BR
-------------------------	----



SAMPLE ORDER

160 A Aluminum,  
Center Feed Box IP 55 5 Conductors

**SP-HA165T2BR**



FITTING PLATES		
AMR.	FITTING TYPE	CODE
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160	PG36	BR2

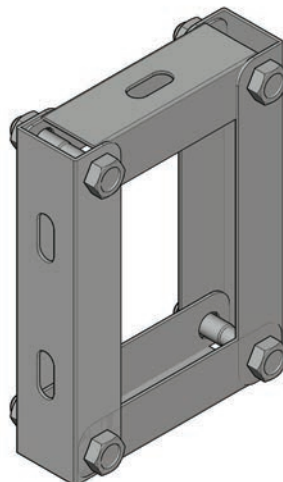
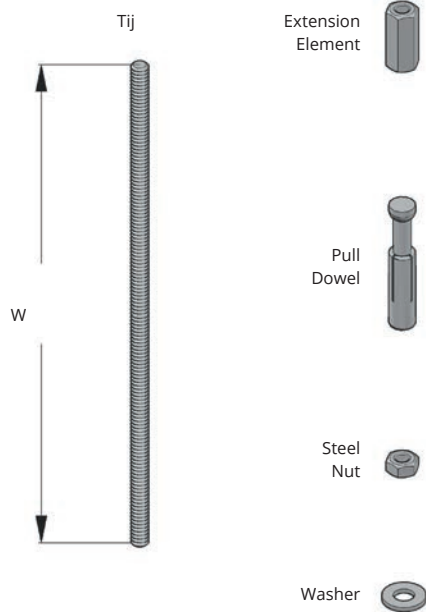
SP-H

Suspension Elements	A
---------------------	---

SAMPLE ORDER

100 A Aluminum,  
Suspension Set IP 55 5 Conductors

**SP-HA105T2A**



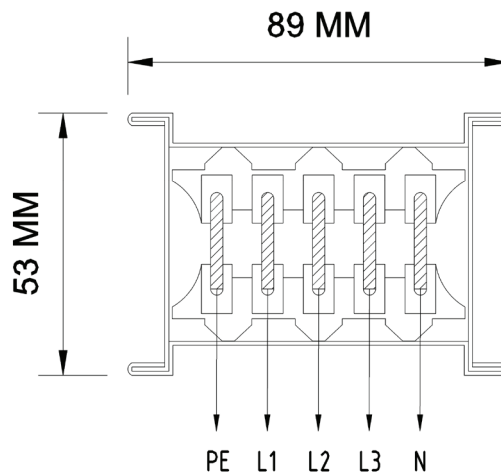
CONNECTION ELEMENTS		
PART	W (mm)	Code
B-E 8 Tij Hanger (M8)	500	T101
B-E 8 Tij Hanger (M8)	1000	T102
(M8) Extension Element	-	T103
M 8 Pull Dowel	-	T104
M 8 Steel Nut	-	T105

## Busbar Technical Information

ALUMINUM BUSBAR SIZES AND WEIGHT								
AMPER CLASS	BUSBAR MM			CONDUCTOR / SECTION MM			FEEDER KG+MT	
							3P+N+PE (4)	3P+N+PE+FE1 (5)
100A	53	X	89	3	X	16	2,05	2,2
160A	62		89			25	2,4	2,6

COPPER BUSBAR SIZES AND WEIGHT								
AMPER CLASS	BUSBAR MM			CONDUCTOR / SECTION MM			FEEDER KG+MT	
							3P+N+PE (4)	3P+N+PE+FE1 (5)
100A	53	X	89	3	X	10	2,45	3
160A	62		89			16	3	3,4



### ELECTRICAL TECHNICAL INFO

Current	Resistance R (mohm/m)	Reactance X (mohm/m)	Impedance Z (mohm/m)
<b>Aluminum</b>			
100	0,99	0,23	1,01
160	0,64	0,63	0,90
<b>Copper</b>			
100	0,96	0,21	0,98
160	0,55	0,17	0,58

### Calculate the voltage drop ΔV% according to the formula below.

$$\Delta V\% = \sqrt{3} \times (R \times \cos\phi + X \times \sin\phi) \times I_b \times L / U_e \times 100$$

R: Resistance ( mohm/m ) (Electrical technical info is found from the table)

X: Reactance ( mohm/m ) (Electrical technical info is found from the table)

I<sub>b</sub>: Sum of all extra effective charges

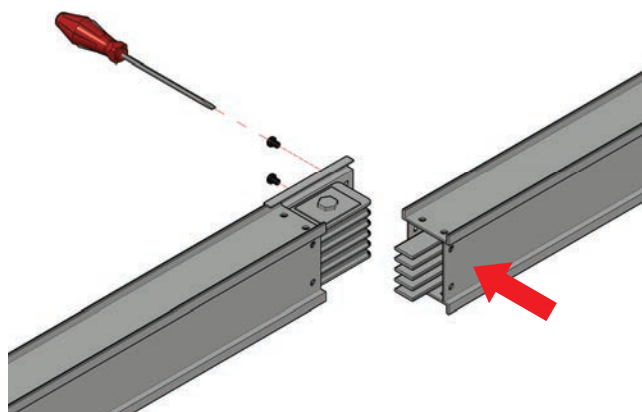
L: Total length of busbar line

U<sub>e</sub>: Supply voltage

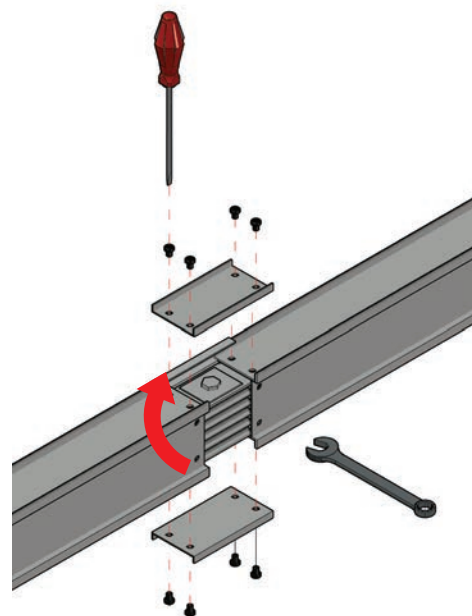
Example: The calculation of 100 A Busbar is as follows.

(L) Line Length	100 mt
(I <sub>b</sub> ) Effective load	65 A
U <sub>e</sub> : Supply voltage	400 V
Cos φ	0,80
R value is 0.99 x 10 <sup>-3</sup> ohm/m and X value is 0.23 x 10 <sup>-3</sup> ohm/m from the table	
(ΔV) Maximum allowable voltage drop 3%	
$\Delta V\% = \sqrt{3} \times (R \times \cos\phi + X \times \sin\phi) \times I_b \times L / U_e \times 100$	
$\Delta V\% = \frac{1,73 \times (0,99 \times 0,8 + 0,23 \times 0,6) \times 10^{-3} \times 65 \times 100 \times 100}{400} = 2,62\%$	
The value found is less than 3%. 100 A Busbar selection is suitable according to voltage drop calculation.	

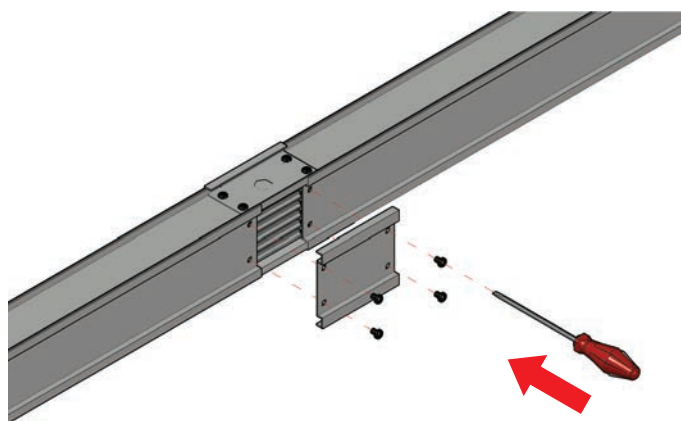
Installation Method



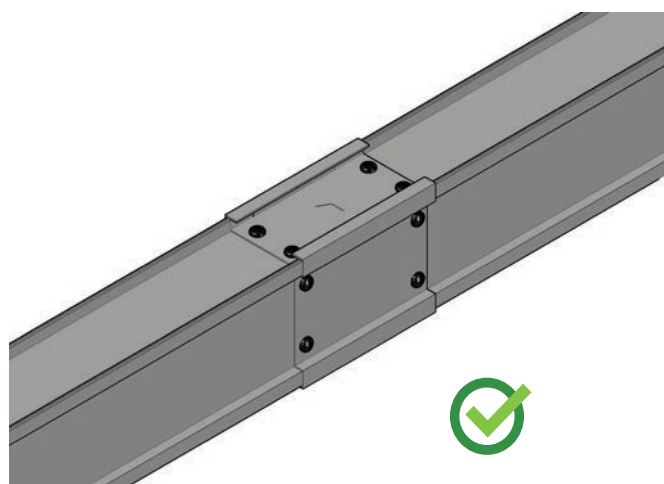
1 Install the additional cover to the busbar so that it fits into the body.



2 Install the additional block to the busbar and fix it to the next length body.



3 Before closing the joint cover, check whether the bolts are cracked or broken and fix the joint cover.



4 The tightening value with block torque is 20Nm.

SP-H



The background is a vibrant yellow with a complex geometric pattern. It features overlapping squares and rectangles in various shades of yellow, some with a grid of small white dots. The overall effect is modern and technical.

**MP-H  
SERIES  
160A-600A**

<b>General Information</b>	40
<b>Project Information</b>	42
<b>Accessories</b>	
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Elbow Modules	45
Elbow Modules	46
Feed Boxes	50
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Tap-Off Boxes	54
Suspension Elements	55
<b>Technical Information</b>	
Busbar Technical Information	57
Vertical and Horizontal Busbar Applications	59
Horizontal Expansion Module Applications	60
<b>Installation</b>	
Installation Method	61

MP-H

### GENERAL FEATURES

MP-H Busbar trunking systems are systems with air insulated conductors in low voltage energy distribution lines. Plug-in production is produced with four plug-in points as standard. It is produced with aluminum or copper conductors between 160A- 600A. In the 5-pole full neutral configuration, the operating voltage is 1000 V. The case is produced as galvanized sheet in IP 55 protection class.

### Applications

Used in commercial centers, medium-sized industrial facilities, high-rise buildings, data centers.

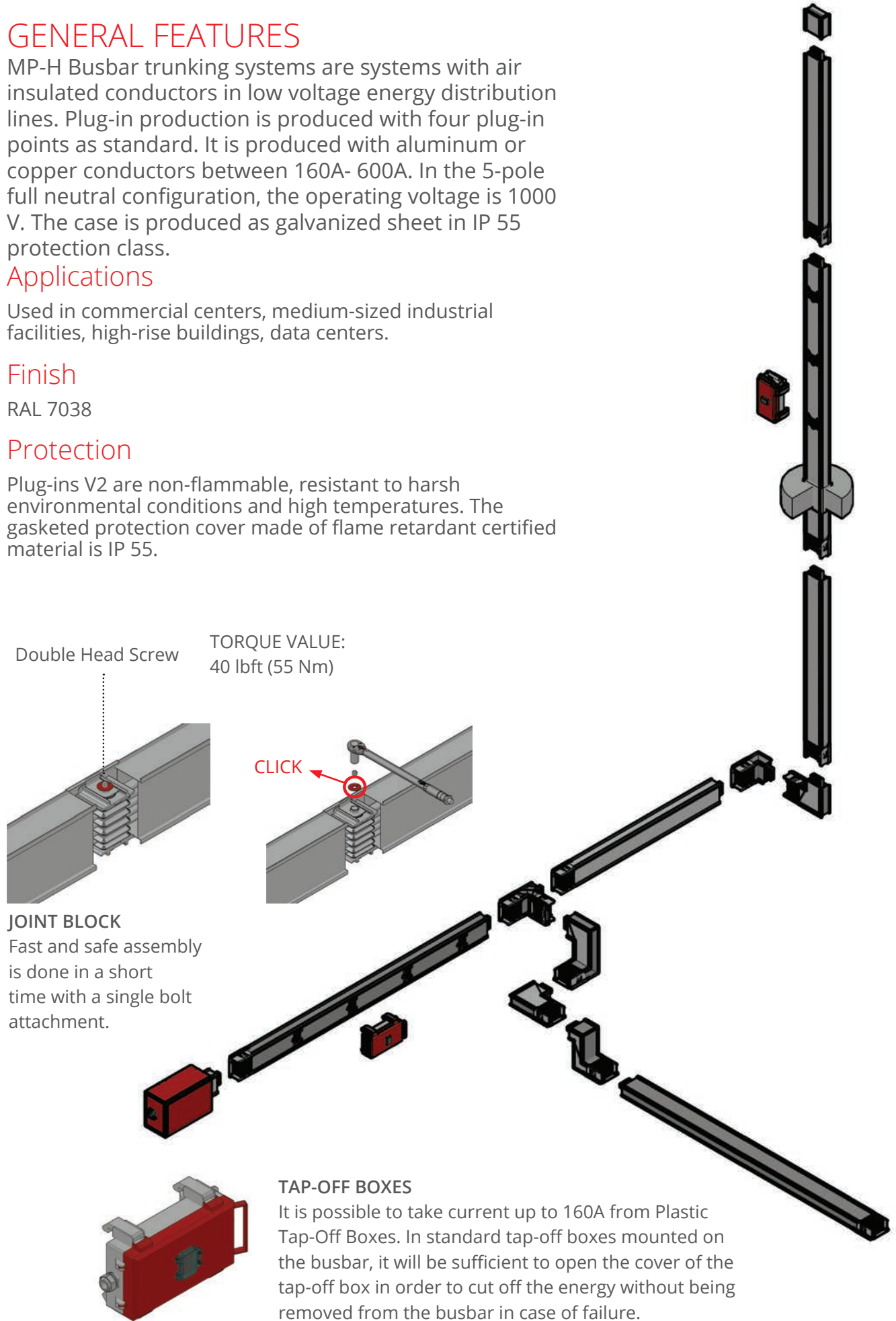
### Finish

RAL 7038

### Protection

Plug-ins V2 are non-flammable, resistant to harsh environmental conditions and high temperatures. The gasketed protection cover made of flame retardant certified material is IP 55.

MP-H



Double Head Screw

TORQUE VALUE:  
40 lbft (55 Nm)

CLICK

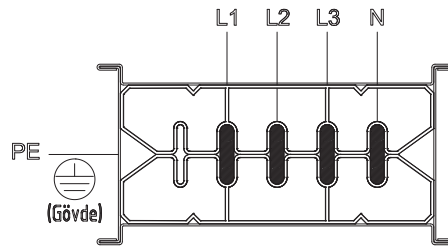
### JOINT BLOCK

Fast and safe assembly is done in a short time with a single bolt attachment.

### TAP-OFF BOXES

It is possible to take current up to 160A from Plastic Tap-Off Boxes. In standard tap-off boxes mounted on the busbar, it will be sufficient to open the cover of the tap-off box in order to cut off the energy without being removed from the busbar in case of failure.

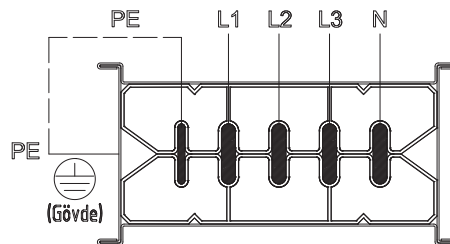
3P+N+PE (4 Conductors) T1



GALVANIZED  
STEEL SHEET BODY

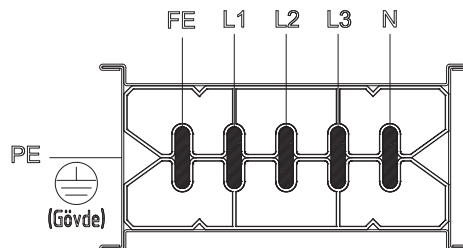
The neutral conductor cross section is the same as the phase conductor. The grounding conductor cross-section is placed in the case as the same.

3P+N+PE+PE (4,5 Conductors) T3



GALVANIZED  
STEEL SHEET BODY

3P+N+PE+FE2 (5 Conductors) T2

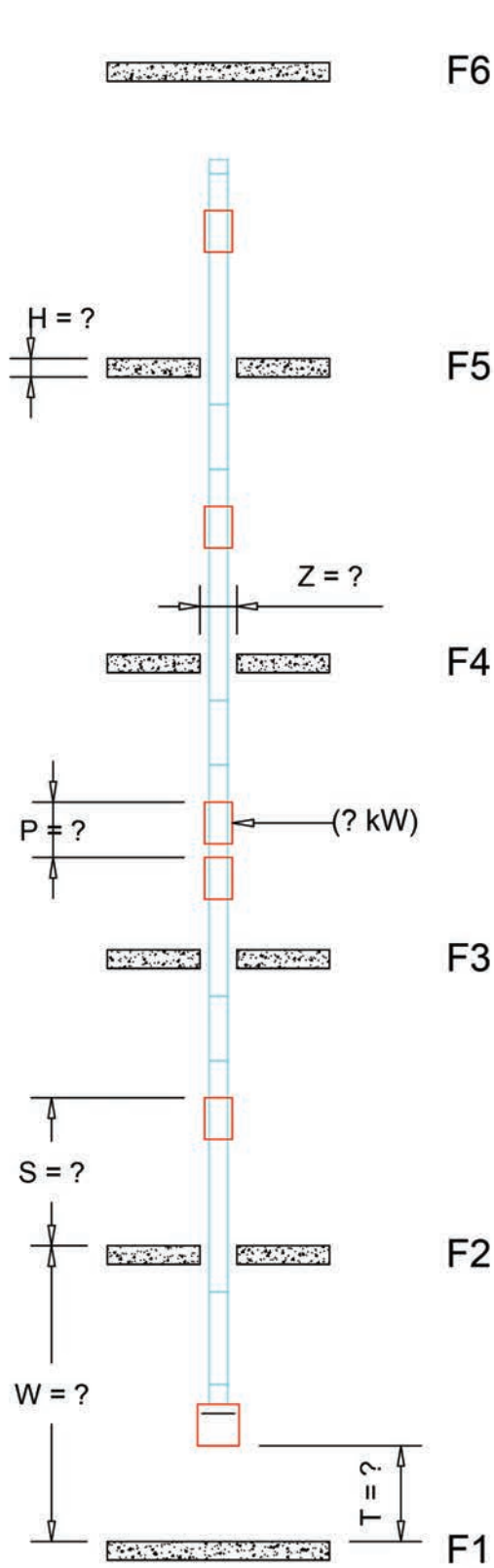


GALVANIZED  
STEEL SHEET BODY

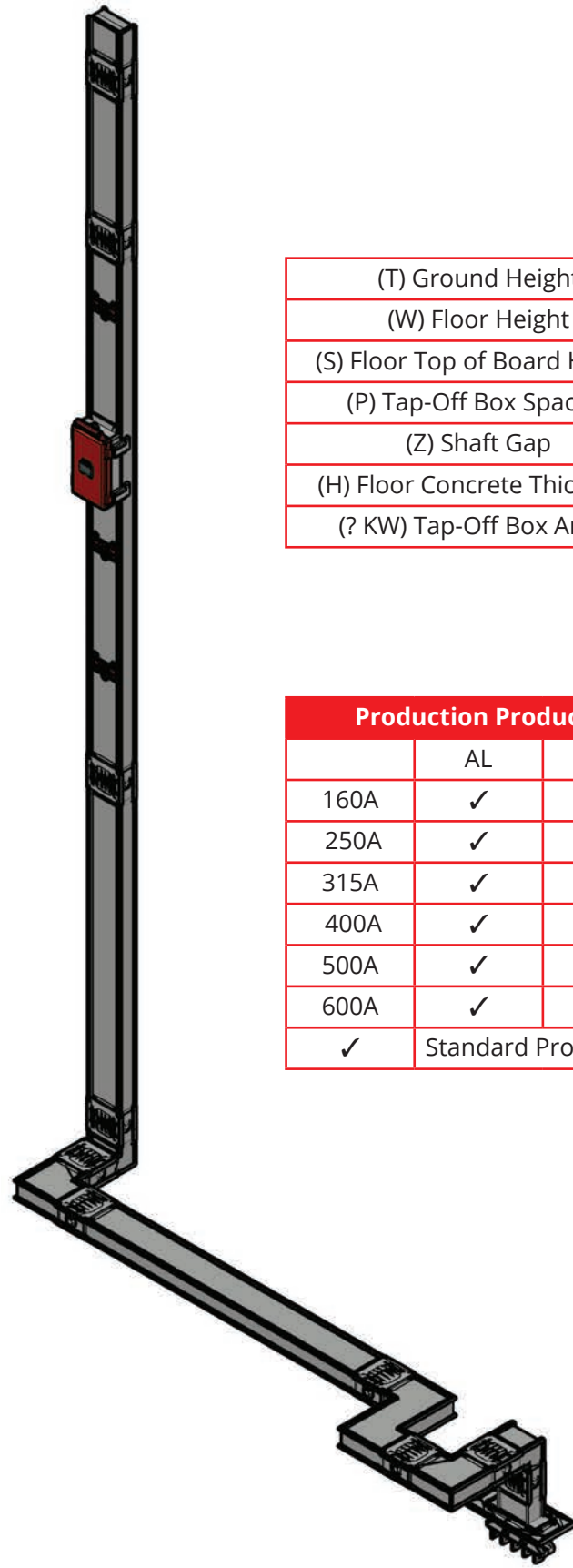
The neutral conductor cross-section is the same as the phase conductor. The conductor cross-section used for grounding is half the cross-section of the phase conductor.

MP-H

VERTICAL DISTRIBUTION APPLICATION



MP-H

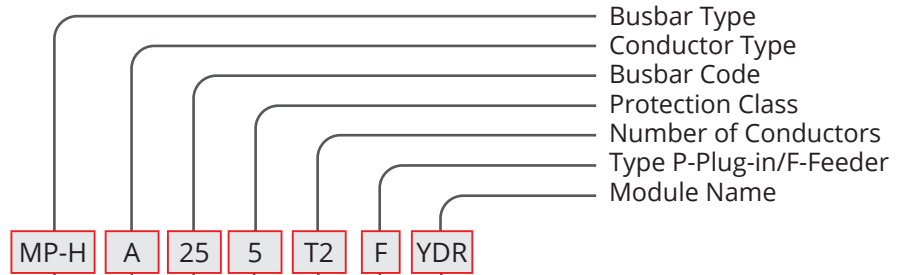


(T) Ground Height
(W) Floor Height
(S) Floor Top of Board Height
(P) Tap-Off Box Spacing
(Z) Shaft Gap
(H) Floor Concrete Thickness
(? kW) Tap-Off Box Amps

Production Products		
	AL	CU
160A	✓	-
250A	✓	✓
315A	✓	✓
400A	✓	✓
500A	✓	-
600A	✓	✓
✓	Standard Production	

The smartest way of power distribution

ORDER CODE SYSTEM



BUSBAR NAME

Busbar Type

ALUMINUM (AL)	(A)
COPPER (CU)	(C)

Conductor Type

MP-H AL		MP-H CU	
CRRNT	BUSBAR CODE	CRRNT	BUSBAR CODE
160	16	250	26
250	25	315	32
315	31	400	41
400	40	600	61
500	50		
600	60		

Busbar Current

IP55	5
------	---

Protection Class

Number of Conductors

Number of Conductors	Code	L1	L2	L3	N	1/2 GRND	CLEAN GRND	1/2 CLEAN GRND	GRND (BODY)
3P+N+PE (4P)	T1	✓	✓	✓	✓				✓
3P+N+PE+FE1 (5P)	T2	✓	✓	✓	✓	✓	✓		✓

Type

Information About Busbar Usage Purpose.

(P) PLUG-IN USED FOR TAKING CURRENT FROM PLUG-IN PLACES IN FLAT SIZES.
(F) FEEDER USED WHERE DIRECT FEEDING IS MADE AND CURRENT IS NEEDED TO BE TAKEN FROM ADDITIONAL POINTS.

Type P-Plug-in / F-Feeder

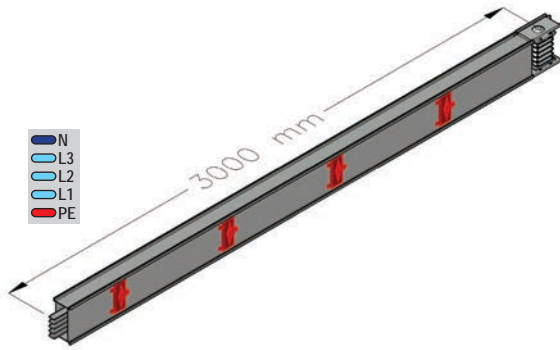
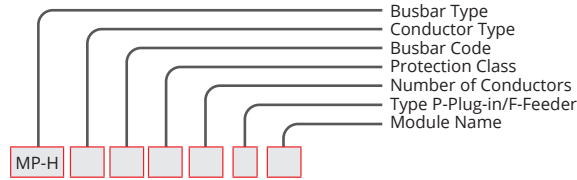
Module Name

Feeder Busbar	FS
Plug-In Busbar	PS
Horizontal Elbow Right	YDR
Horizontal Elbow Left	YDL
Vertical Elbow Down	DDD
Vertical Elbow Up	DDU
Feeder Special Length	FX
Plug-In Special Length	PX
Double Vertical Elbow (Off-Set) Up	DOU
Double Vertical Elbow (Off-Set) Down	DOD
Double Vertical Elbow (Off-Set) Left	YOL
Double Vertical Elbow (Off-Set) Right	YOR
Up Left (Combined Off-Set)	ULK
Up Right (Combined Off-Set)	URK
Down Left (Combined Off-Set)	DLK
Down Right (Combined Off-Set)	DRK
Left Up (Combined Off-Set)	LUK
Right Up (Combined Off-Set)	RUK
Left Down (Combined Off-Set)	LDK
Right Down (Combined Off-Set)	RDK
Center (T) Module	OT
Quadruple (T) Module	DT
Reduction	RD
Expansion Module	G
Panel Connection Module (E)	PME
Panel Connection Module (D)	PMD
Tapoff Box (Plug-in) with Load Breaker	KM1
Plastic Tapoff Box (Empty)	KPO
Tapoff Box (Plug-in) with Switch	KM2
End Feed Module	BM1
Start Feed Module	BM2
Center Feed Module	OB1
Termination Module	S
Expansion (Horizontal)	DH
Horizontal Hanger Vertical Module (U Profile)	YVU
Horizontal Hanger Horizontal Module (U Profile)	YHU
Horizontal Hanger Vertical Module (40x40 Bracket)	YVK
Horizontal Hanger Horizontal Module (40x40 Bracket)	YHK
Shaft Hanger Module	SA
Center Feed Module	OB2

MP-H



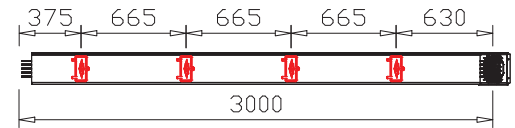
Standard Size



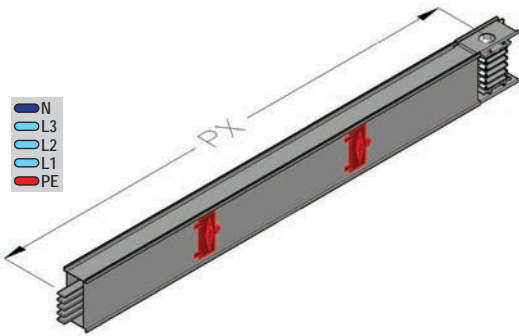
Plug-in Busbar PS

**SAMPLE ORDER**  
250 A Aluminum,  
Plug-in IP 55 5 Conductors  
**MP-HA255T2PS**

**PLUG-IN BUSBAR**  
Standard production in plug-in sizes has 4 outlets. The number of plug-in points can be changed upon request.

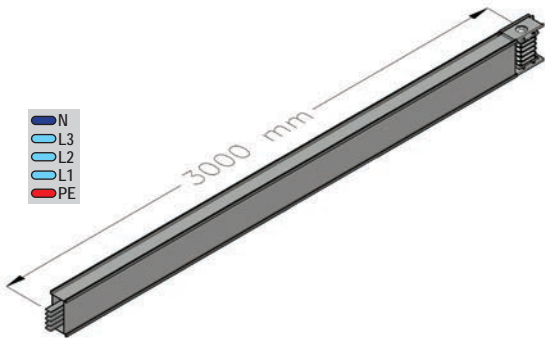


MP-H



Plug-in Special Length PX

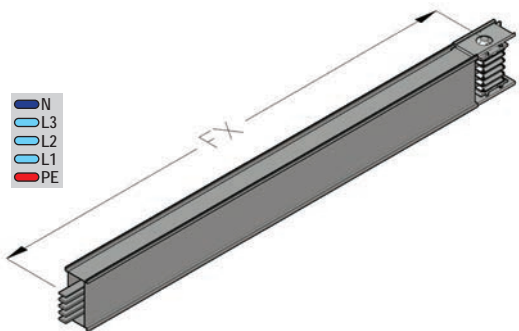
**SAMPLE ORDER**  
400 A Aluminum,  
Plug-in IP 55 5 Conductors  
**MP-HA405T2PX**



Feeder Busbar FS

**SAMPLE ORDER**  
400 A Aluminum,  
Feeder IP 55 5 Conductors  
**MP-HA405T2FS**

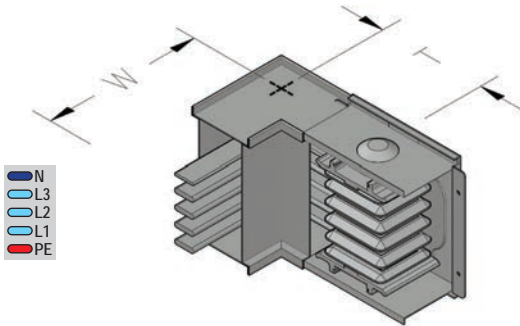
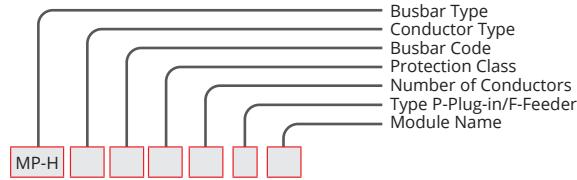
**FEEDER BUSBAR**  
It provides direct feeding in power transmission. Standard production is 3000 mm, upon request, it can be produced in different sizes starting from a minimum of 500 mm.



Feeder Special Length FX

**SAMPLE ORDER**  
400 A Aluminum,  
Elbow IP 55 5 Conductors  
**MP-HA405T2FX**

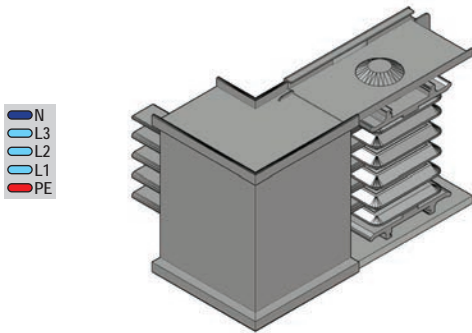
Elbow Modules



- N
- L3
- L2
- L1
- PE

Horizontal Elbow Right YDR

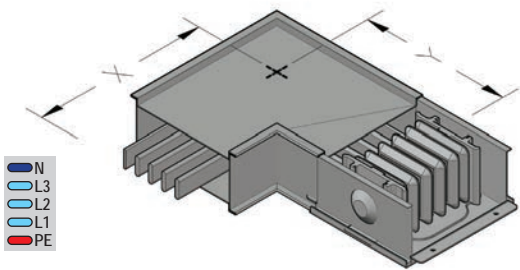
**SAMPLE ORDER**  
400 A Aluminum,  
Elbow IP 55 5 Conductors  
**MP-HA405T2FYDR**



- N
- L3
- L2
- L1
- PE

Horizontal Elbow Left YDL

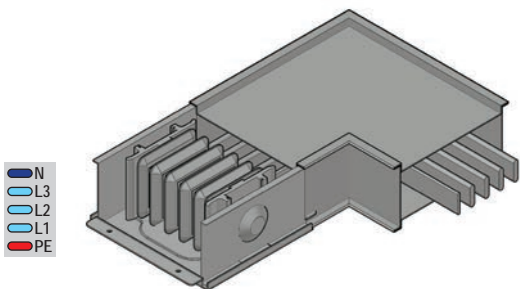
**SAMPLE ORDER**  
400 A Aluminum,  
Elbow IP 55 5 Conductors  
**MP-HA405T2FYDL**



- N
- L3
- L2
- L1
- PE

Vertical Elbow Down DDD

**SAMPLE ORDER**  
400 A Aluminum,  
Elbow IP 55 5 Conductors  
**MP-HA405T2FDDD**



- N
- L3
- L2
- L1
- PE

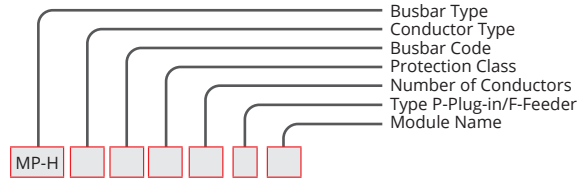
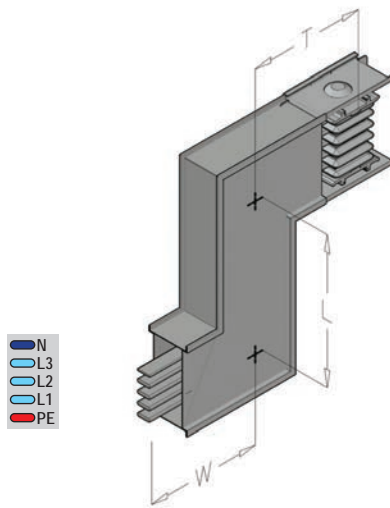
Vertical Elbow Up DDU

**SAMPLE ORDER**  
400 A Aluminum,  
Elbow IP 55 5 Conductors  
**MP-HA405T2FDDU**

MP-H

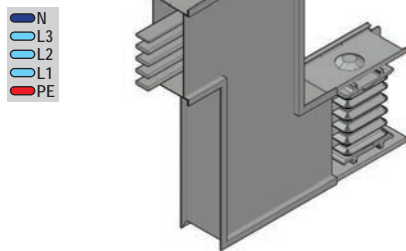
(AL)			(CU)		
AMP.	W mm	T mm	AMP.	W mm	T mm
160A	145	145	250A	150	150
250A	150	150	315A	155	155
315A	155	155	400A	165	165
400A	165	165	600A	180	180
500A	170	170			
600A	180	180			
AMP.	X mm	Y mm	AMP.	X mm	Y mm
160A	240	240	250A	240	240
250A	240	240	315A	240	240
315A	240	240	400A	240	240
400A	240	240	600A	240	240
500A	240	240			
600A	240	240			

Elbow Modules



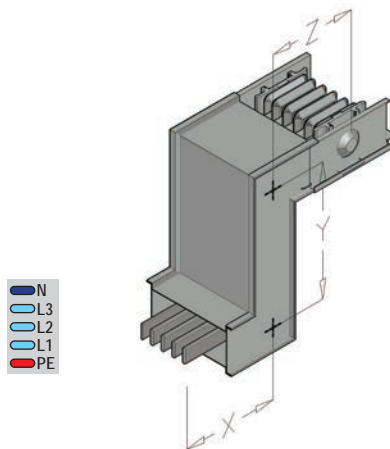
Double Vertical Elbow Up Off-set	DOU
----------------------------------	-----

**SAMPLE ORDER**  
250 A Copper  
Offset IP 55 5 Conductors  
**MP-HC265T2FDOU**



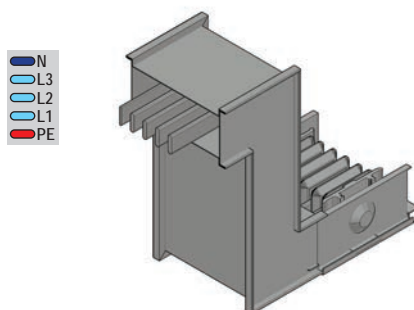
Double Vertical Elbow Down Off-set	DOD
------------------------------------	-----

**SAMPLE ORDER**  
400 A Copper  
Offset IP 55 5 Conductors  
**MP-HC415T2FDOD**



Double Horizontal Elbow Right Off-set	YOR
---------------------------------------	-----

**SAMPLE ORDER**  
600 A Copper  
Offset IP 55 5 Conductors  
**MP-HC615T2FYOR**



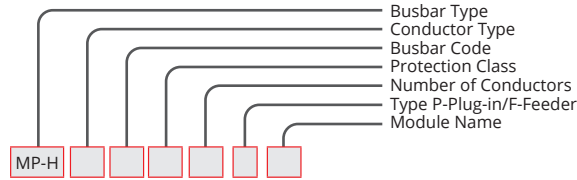
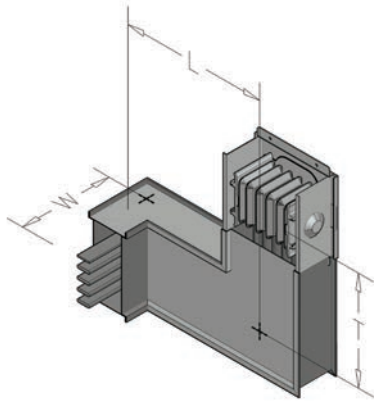
Double Horizontal Elbow Left Off-set	YOL
--------------------------------------	-----

**SAMPLE ORDER**  
250 A Copper  
Offset IP 55 5 Conductors  
**MP-HC265T2FYOL**

		(AL)			(CU)		
AMR.	W mm	T mm	L mm	AMR.	W mm	T mm	L mm
160A	240	240	240	250A	240	240	240
250A	240	240	240	315A	240	240	240
315A	240	240	240	400A	240	240	240
400A	240	240	240	600A	240	240	240
500A	240	240	240				
600A	240	240	240				
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
160A	145	145	145	250A	150	150	150
250A	150	150	150	315A	155	155	155
315A	155	155	155	400A	165	165	165
400A	165	165	165	600A	180	180	180
500A	170	170	170				
600A	180	180	180				

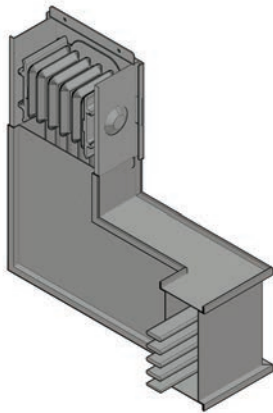
MP-H

Elbow Modules



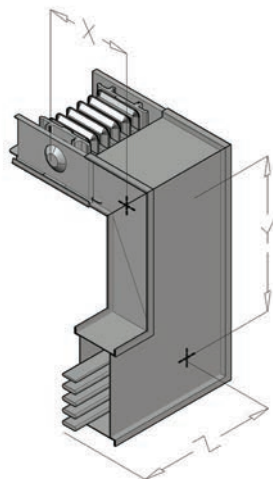
MP-H Combined Up Right Off-set URK

**SAMPLE ORDER**  
600 A Copper  
Offset IP 55 5 Conductors  
**MP-HC615T2FURK**



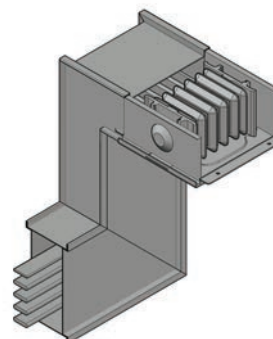
Combined Up Left Off-set ULK

**SAMPLE ORDER**  
400 A Aluminum  
Offset IP 55 5 Conductors  
**MP-HA405T2FULK**



Combined Down Right Off-set DRK

**SAMPLE ORDER**  
250 A Copper  
Offset IP 55 5 Conductors  
**MP-HC265T2FDRK**



Combined Down Left Off-set DLK

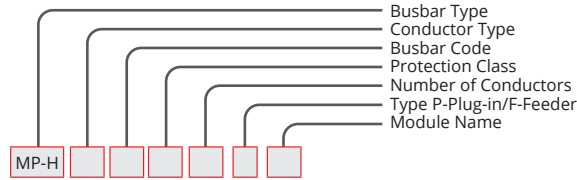
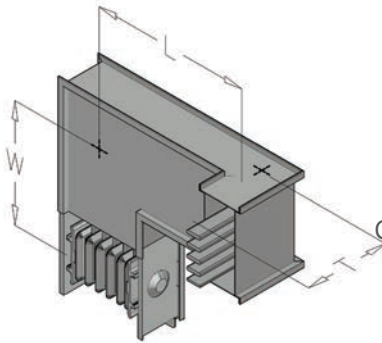
**SAMPLE ORDER**  
400 A Aluminum  
Offset IP 55 5 Conductors  
**MP-HA405T2FDLK**

MP-H

		(AL)			(CU)		
AMR.	W mm	T mm	L mm	AMR.	W mm	T mm	L mm
160A	145	240	240	250A	150	240	240
250A	150	240	240	315A	155	240	240
315A	155	240	240	400A	165	240	240
400A	165	240	240	600A	180	240	240
500A	170	240	240				
600A	180	240	240				
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
160A	145	240	240	250A	150	240	240
250A	150	240	240	315A	155	240	240
315A	155	240	240	400A	165	240	240
400A	165	240	240	600A	180	240	240
500A	170	240	240				
600A	180	240	240				

Elbow Modules

N  
L3  
L2  
L1  
PE

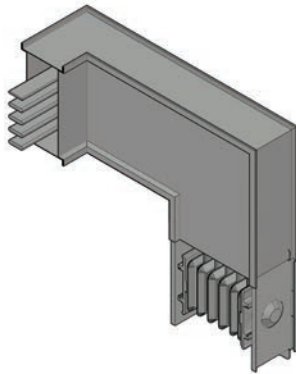


MP-H  
Combined Right Up Off-set RUK

SAMPLE ORDER

250 A Copper  
Combined Off-set IP 55 5 Conductors  
**MP-HC265T2FRUK**

N  
L3  
L2  
L1  
PE

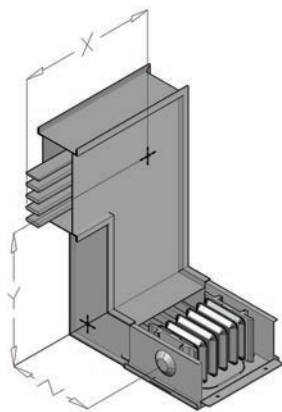


Combined Left Up Off-set LUK

SAMPLE ORDER

250 A Copper  
Combined Off-set IP 55 5 Conductors  
**MP-HC265T2FLUK**

N  
L3  
L2  
L1  
PE

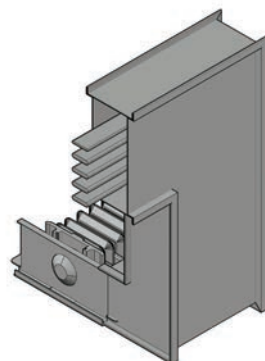


Combined Right Down Off-set RDK

SAMPLE ORDER

250 A Aluminum  
Combined Off-set IP 55 5 Conductors  
**MP-HA255T2FRDK**

N  
L3  
L2  
L1  
PE



Combined Left Down Off-set LDK

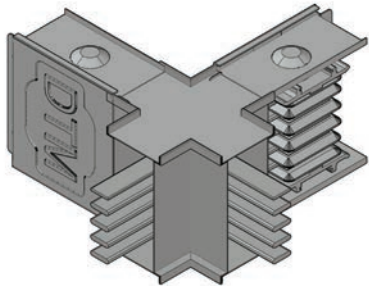
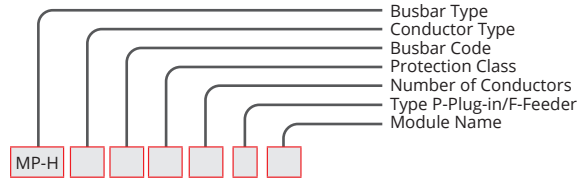
SAMPLE ORDER

250 A Aluminum  
Combined Off-set IP 55 5 Conductors  
**MP-HA255T2FLDK**

AMR.	(AL)			(CU)			
	W mm	T mm	L mm	AMR.	W mm	T mm	L mm
160A	240	145	240	250A	240	150	240
250A	240	150	240	315A	240	155	240
315A	240	155	240	400A	240	165	240
400A	240	165	240	600A	240	180	240
500A	240	170	240				
600A	240	180	240				
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
160A	240	240	145	250A	240	240	150
250A	240	240	150	315A	240	240	155
315A	240	240	155	400A	240	240	165
400A	240	240	165	600A	240	240	180
500A	240	240	170				
600A	240	240	180				

MP-H

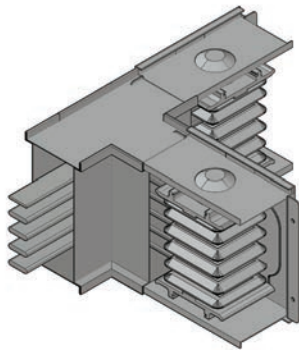
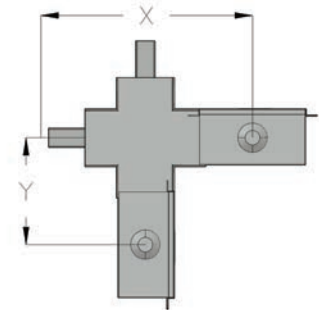
Elbow Modules



- N
- L3
- L2
- L1
- PE

Quadruple (T) Module	DT
----------------------	----

**SAMPLE ORDER**  
250 A Aluminum,  
Quadruple T Module IP 55 5 Conductors  
**MP-HA255T2FDT**

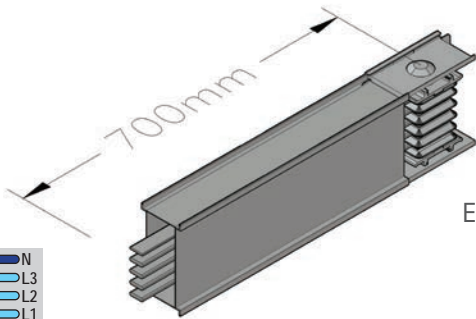


- N
- L3
- L2
- L1
- PE

Center (T) Module	OT
-------------------	----

**SAMPLE ORDER**  
250 A Aluminum,  
T Module IP 55 5 Conductors  
**MP-HA255T2FOT**

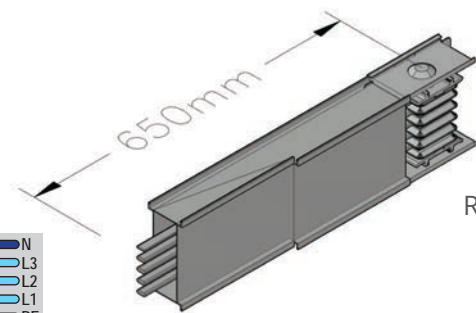
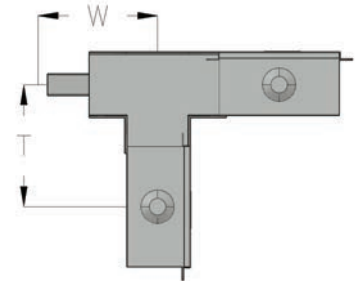
AMR.	(AL)		(CU)		
	X mm	Y mm	AMR.	X mm	Y mm
160A	290	145	250A	300	150
250A	300	150	315A	310	155
315A	310	155	400A	330	165
400A	330	165	600A	360	180
500A	340	170			
600A	360	180			
AMR.	W mm	T mm	AMR.	W mm	T mm
160A	145	145	250A	150	150
250A	150	150	315A	155	155
315A	155	155	400A	165	165
400A	165	165	600A	180	180
500A	170	170			
600A	180	180			



- N
- L3
- L2
- L1
- PE

Expansion Module	G
------------------	---

**SAMPLE ORDER**  
400 A Aluminum,  
Expansion Module IP 55 5 Conductors  
**MP-HA405T2FG**



- N
- L3
- L2
- L1
- PE

Reduction Module	RD
------------------	----

**SAMPLE ORDER**  
400A-250A Aluminum,  
Reduction Module IP 55 5 Conductors  
**MP-HA405T2FRD**

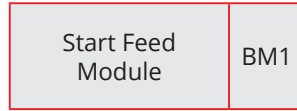
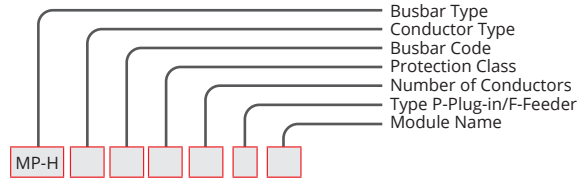
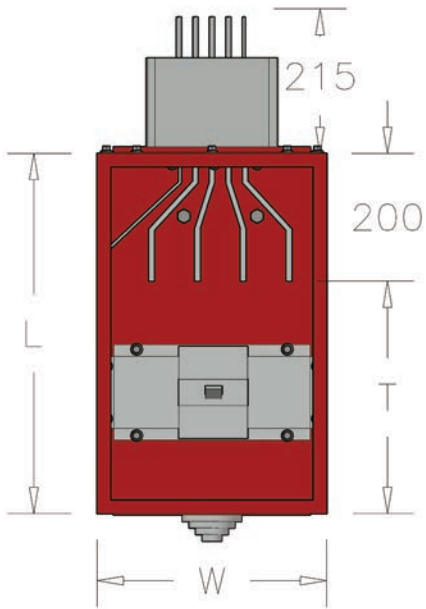
MP-H AL Conductor RD						
Rcvin Crrnt	Busbar Code					Reduced Receiving Current
	16	25	31	40	50	
	160	250	315	400	500	
250A	✓	-	-	-	-	
315A	✓	✓	-	-	-	
400A	-	✓	✓	-	-	
500A	-	-	✓	✓	-	
600A	-	-	-	✓	✓	

MP-H CU Conductor RD					
Rcvin Crrnt	Busbar Code				Reduced Receiving Current
	26	32	41	51	
	250	315	400	500	
315A	✓	-	-	-	
400A	✓	✓	-	-	
500A	-	✓	✓	-	
600A	-	-	✓	✓	

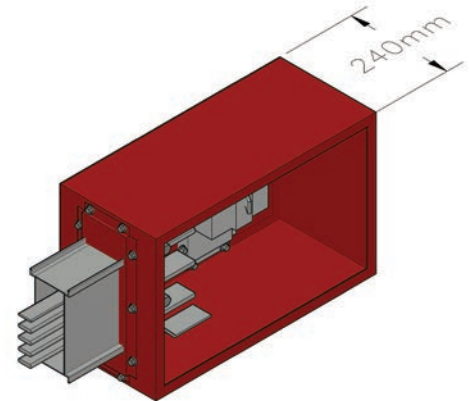
MP-H



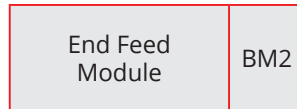
Feed Boxes



SAMPLE ORDER  
 400 A Aluminum,  
 Feed IP 55 5 Conductors  
**MP-HA405T2BM1**

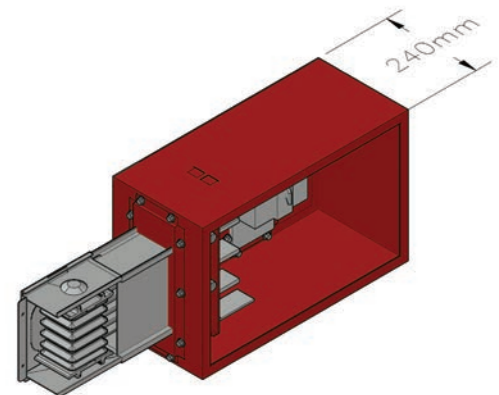
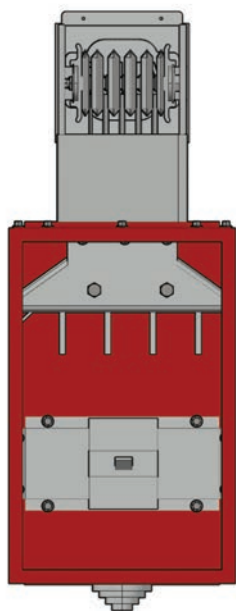


MP-H



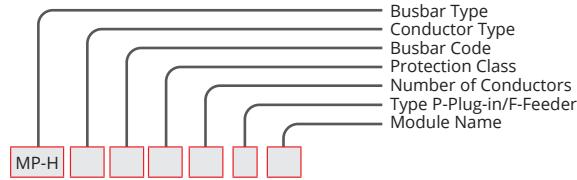
SAMPLE ORDER  
 400 A Aluminum,  
 End Feed IP 55 5 Conductors  
**MP-HA405T2BM2**

(AL)				(CU)			
AMR.	W mm	T mm	L mm	AMR.	W mm	T mm	L mm
160A	350	360	560	250A	350	360	560
250A	350	360	560	315A	350	360	560
315A	350	360	560	400A	350	360	560
400A	350	360	560	600A	350	360	560
500A	350	360	560				
600A	350	360	560				



For non-standard boxes please call our company.

Feed Boxes

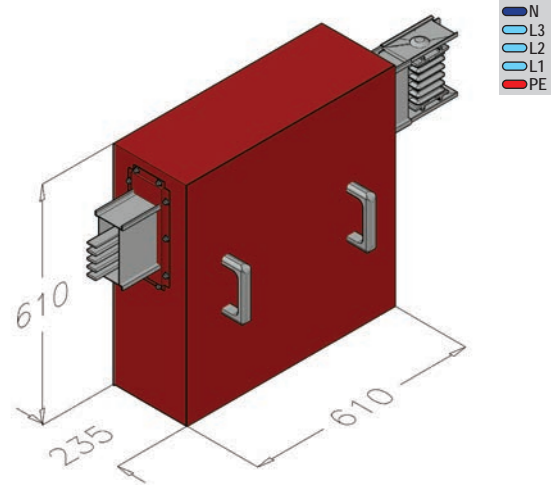
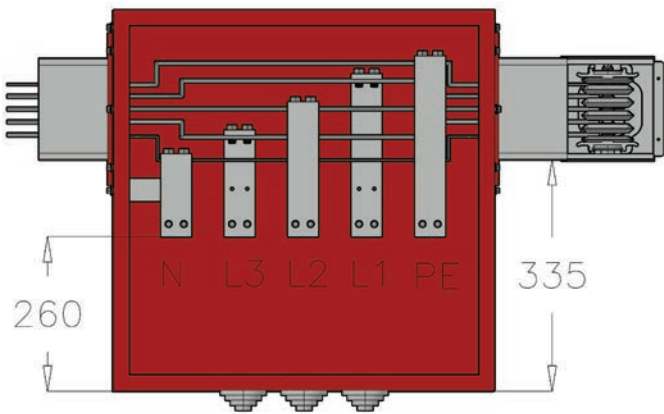


Center Feed Module Left	OB1
-------------------------------	-----

SAMPLE ORDER

250 A Aluminum,  
Center Feed IP 55 5 Conductors

**MP-HA255T2OB1**

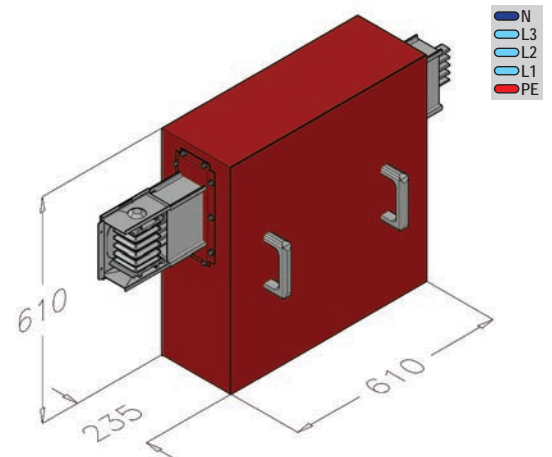
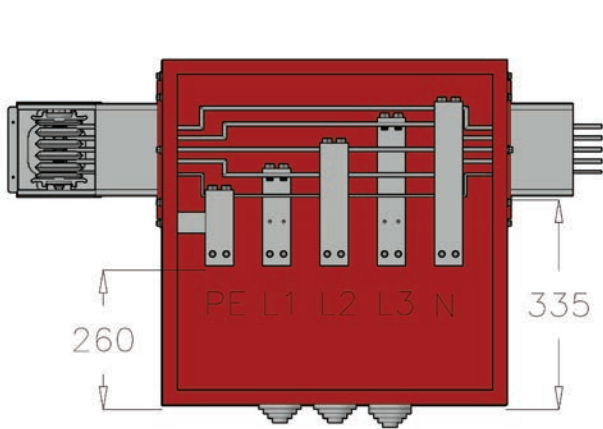


Center Feed Module Right	OB2
--------------------------------	-----

SAMPLE ORDER

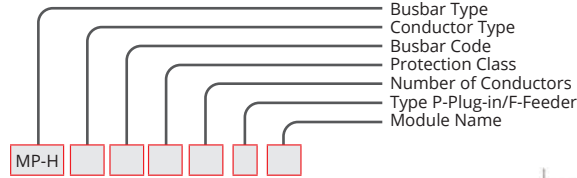
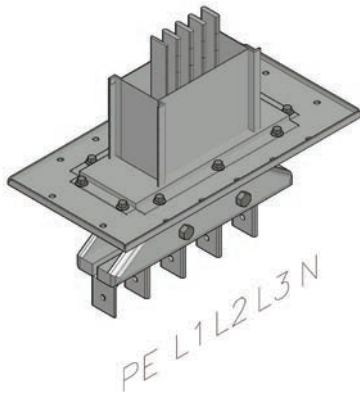
250 A Aluminum,  
Center Feed IP 55 5 Conductors

**MP-HA255T2OB2**



For non-standard boxes please contact local dealer.

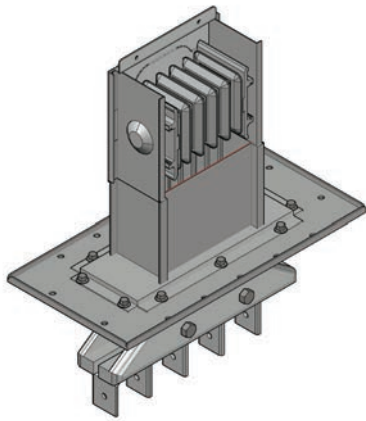
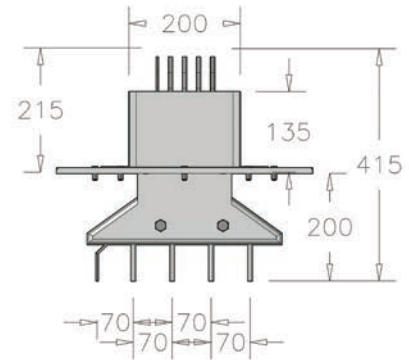
Panel Modules



Panel Module (E)	PME
------------------	-----

SAMPLE ORDER

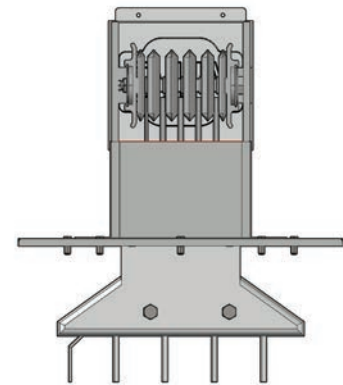
250 A Aluminum,  
Panel Module IP 55 5 Conductors  
**MP-HA255T2PME**



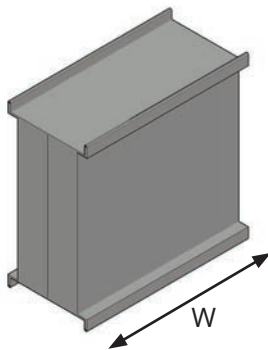
Panel Module (D)	PMD
------------------	-----

SAMPLE ORDER

400 A Aluminum,  
Panel Module IP 55 5 Conductors  
**MP-HA405T2PMD**



Standard Modules

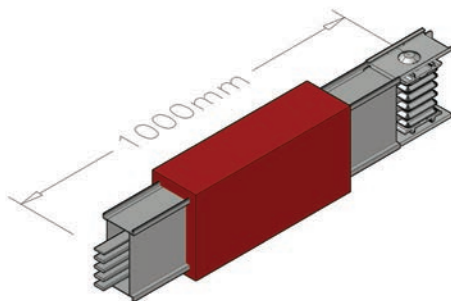


End Covers	S
------------	---

SAMPLE ORDER

250 A Aluminum,  
Termination IP 55 5 Conductors  
**MP-HA255T2S**

Termination			
(AL)		(CU)	
AMR.	W mm	AMR.	W mm
160A	200	250A	200
250A	200	315A	200
315A	200	400A	200
400A	200	600A	200
500A	200		
600A	200		



Horizontal Expansion Module	DH
-----------------------------	----

SAMPLE ORDER

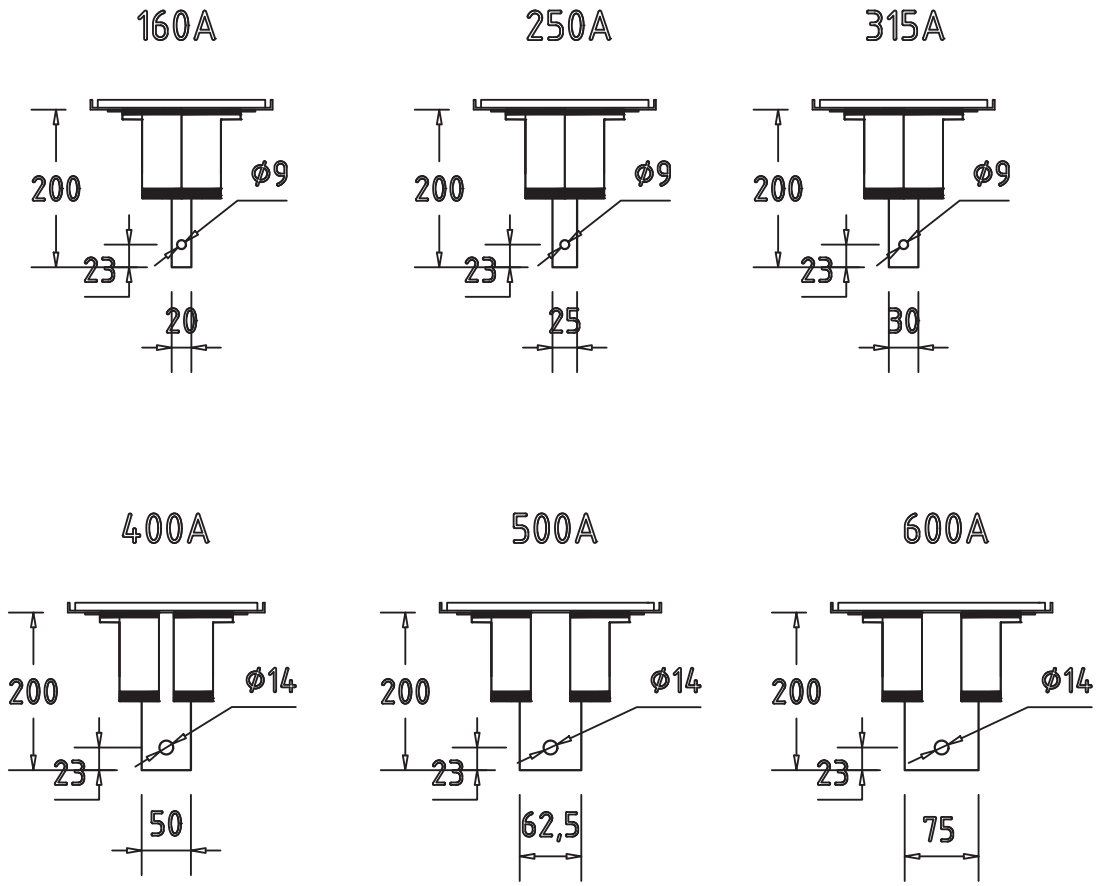
250 A Aluminum,  
Expansion IP 55 5 Conductors  
**MP-HA255T2DH**

Horizontal Expansion Information:

A 40 MT one is used on long horizontal lines.

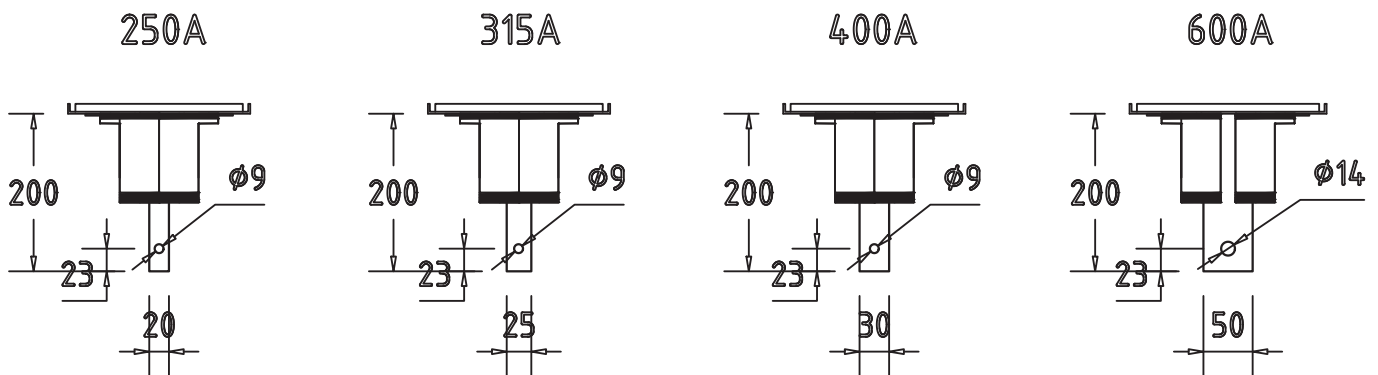


Panel Modules (AL)

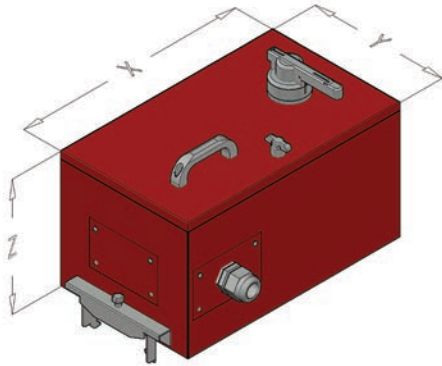
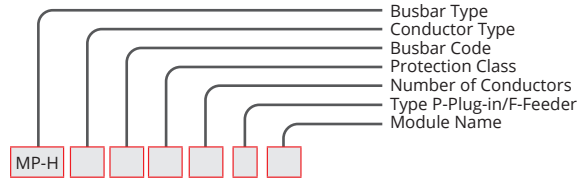


MP-H

Panel Modules (CU)



Tap-Off Boxes



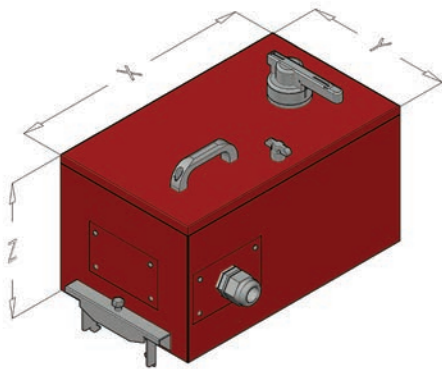
Tap-Off Box with Automatic Switch	KM1
-----------------------------------	-----

SAMPLE ORDER  
250 A Tap-Off Box Empty  
IP 55 5 Conductors

**MPKM125T2KM1B**

TAP-OFF BOX WITH AUTO SWITCH				
AMP.	Box Code	X (mm)	Y (mm)	Z (mm)
160	MPKM116	530	300	220
250	MPKM125	530	300	220
400	MPKM140	710	300	220

SWITCH TYPE CODE	
SWITCH	EMPTY
S	B



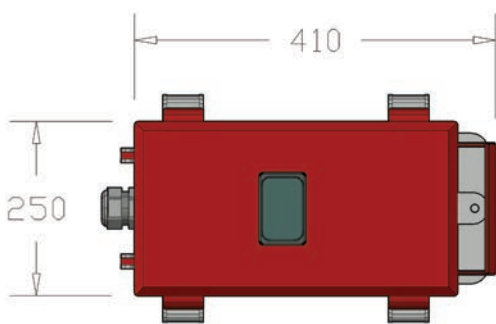
Tap-Off Box with DTM Mechanism	KM2
--------------------------------	-----

SAMPLE ORDER  
160 A Tap-Off Box with Switch  
IP 55 5 Conductors

**MPKM216T2KM2S**

TAP-OFF BOX WITH DTM MECHANISM AND AUTO SWITCH				
AMP.	Box Code	X (mm)	Y (mm)	Z (mm)
160	MPKM216	530	300	220
250	MPKM225	530	300	220
400	MPKM240	710	300	220

MP-H

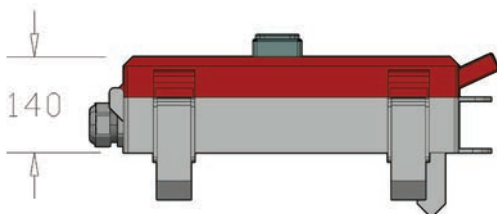


Tap-Off Box Plastic	KPO
---------------------	-----

SAMPLE ORDER  
80 A Tap-Off Box  
IP 55 5 Conductors

**MPH080T2KPO**

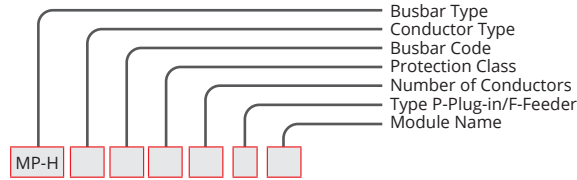
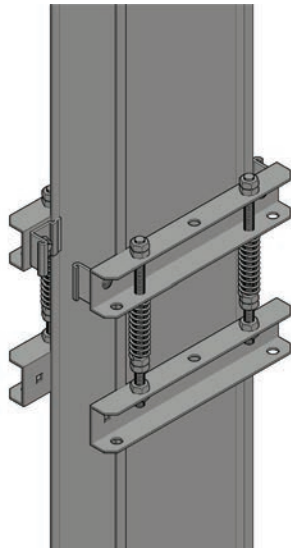
TAP-OFF BOX WITH AUTO SWITCH OR FUSE	
Box Code	AMP.
MPH025	25
MPH032	32
MPH040	40
MPH063	63
MPH080	80
MPH100	100
MPH125	125
MPH160	160



For non-standard boxes please contact local dealer.

The smartest way of power distribution

Suspension Elements

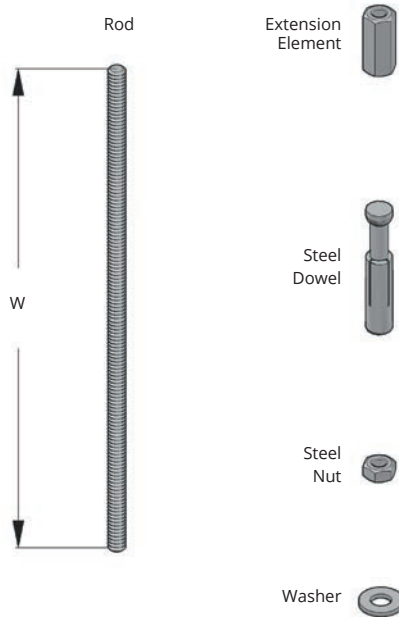


Vertical Suspension (L) Shaft	SA
-------------------------------	----

SAMPLE ORDER

400 A High-Rise/Shaft Suspension  
IP 55 5 Conductors

**MP-HA405T2SA**



Connection Elements	RE
---------------------	----

SAMPLE ORDER

M8 Rod  
500 mm

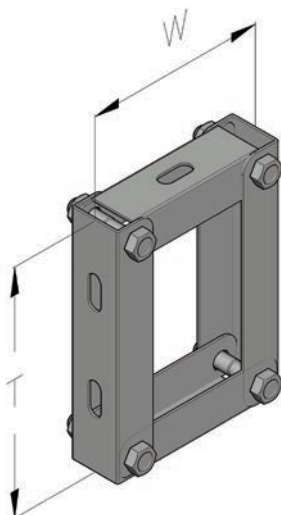
**MP-HRE101**

Drill Bit Diameter:

M8.....Ø12  
M10.....Ø14

CONNECTION ELEMENTS		
Name	W(mm)	Code
B-E 8 Tij Hanger (M8)	500	RE101
B-E 8 Tij Hanger (M8)	1000	RE102
B-E 10 Tij Hanger (M10)	500	RE103
B-E 10 Tij Hanger (M10)	1000	RE104
(M8) Extension Element	-	RE105
(M10) Extension Element	-	RE106
M 8 Pull Dowel	-	RE107
M 10 Pull Dowel	-	RE108
M 8 Steel Nut	-	RE109
M 10 Steel Nut	-	RE110
M 8 Washer	-	BE111
M 10 Washer	-	RE112

MP-H



Horizontal Suspension Element (CLAMP)	YA
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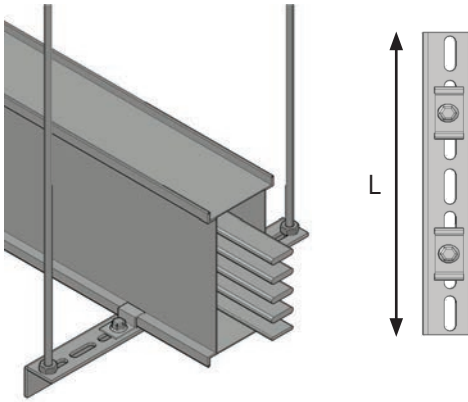
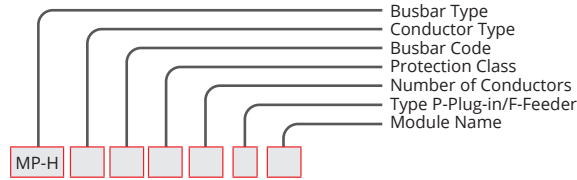
SAMPLE ORDER

250 A Aluminum  
Horizontal Suspension  
IP 55 5 Conductors  
**MP-H255T2YA**

HORIZONTAL SUSPENSION SET			
AL			
AMP.	CODE	T (mm)	W (mm)
160	MP-HA16	240	120
250	MP-HA25	240	125
315	MP-HA31	240	130
400	MP-HA40	240	150
500	MP-HA50	240	163
600	MP-HA60	240	175
CU			
AMP.	CODE	T (mm)	W (mm)
250	MP-HC26	240	120
315	MP-HC32	240	125
400	MP-HC41	240	130
600	MP-HC61	240	150



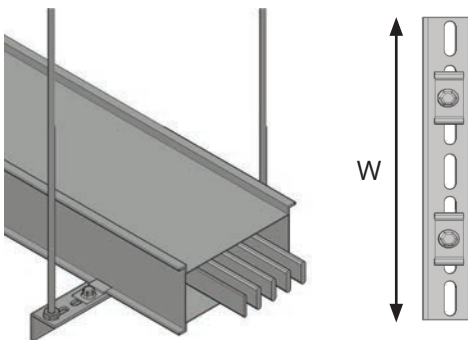
Suspension Elements



Horizontal Suspension Vertical Module (L) Bracket	YVK
---	-----

**SAMPLE ORDER**  
 400 A Aluminum,  
 Suspension Element  
 IP 55 5 Conductors  
**MP-HA405T2YVK**

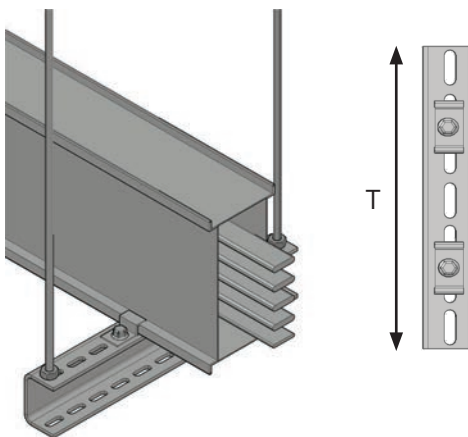
HORIZONTAL SUSPENSION UNIT VERTICAL (40X40 Bracket)			
(AL)		(CU)	
AMP.	L (mm)	AMP.	L (mm)
160A	280	250A	280
250A	285	315A	285
315A	290	400A	290
400A	310	600A	310
500A	325		
600A	335		



Horizontal Suspension Horizontal Module (L) Bracket	YHK
---	-----

**SAMPLE ORDER**  
 400 A Aluminum,  
 Suspension Element  
 IP 55 5 Conductors  
**MP-HA405T2YHK**

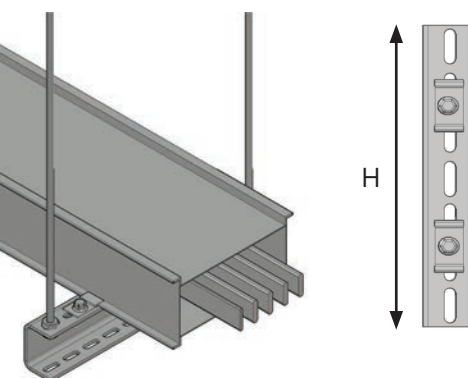
HORIZONTAL SUSPENSION UNIT HORIZONTAL (40X40 Bracket)			
(AL)		(CU)	
AMP.	W (mm)	AMP.	W (mm)
160A	400	250A	400
250A	400	315A	400
315A	400	400A	400
400A	400	600A	400
500A	400		
600A	400		



Horizontal Suspension Vertical Module (U) Profile	YVU
---	-----

**SAMPLE ORDER**  
 250 A Aluminum,  
 Suspension Element  
 IP 55 5 Conductors  
**MP-HA255T2YVU**

HORIZONTAL SUSPENSION UNIT VERTICAL (U PROFILE) 45X45			
(AL)		(CU)	
AMP.	T (mm)	AMP.	T (mm)
160A	280	250A	280
250A	285	315A	285
315A	290	400A	290
400A	310	600A	310
500A	325		
600A	335		



Horizontal Suspension Horizontal Module (U) Profile	YHU
---	-----

**SAMPLE ORDER**  
 250 A Aluminum,  
 Suspension Element  
 IP 55 5 Conductors  
**MP-HA255T2YHU**

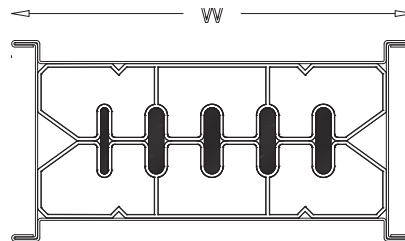
HORIZONTAL SUSPENSION UNIT HORIZONTAL (U PROFILE) 45X65			
(AL)		(CU)	
AMP.	H (mm)	AMP.	H (mm)
160A	400	250A	400
250A	400	315A	400
315A	400	400A	400
400A	400	600A	400
500A	400		
600A	400		

MP-H

# Busbar Technical Data

ALUMINUM BUSBAR SIZES AND WEIGHT									
AL									
AMPER CLASS	BUSBAR MM			CONDUCTOR/SECTION			FEEDER KG/M		
	W	X	H	MM			3P+N+PE	3P+N+PE+PE	3P+N+PE+FE2
160	198		80	6	X	20	6,5	6,65	6,8
250	198		85			25	7	7,25	7,5
315	198		90			30	7,5	7,85	8,3
400	198		110			50	9,5	9,85	10,5
500	198		122,5			62,5	10,5	10,85	11,5
600	198		135			75	11,5	11,85	12,5

COPPER BUSBAR SIZES AND WEIGHT									
CU									
AMPER CLASS	BUSBAR MM			CONDUCTOR/SECTION			FEEDER KG/M		
	W	X	H	MM			3P+N+PE	3P+N+PE+PE	3P+N+PE+FE2
250	198		80	6	X	20	9,5	9,85	10,5
315	198		85			25	10,5	10,85	12
400	198		90			30	12	12,8	13,5
600	198		110			50	15,5	16,5	18,5



GALVANIZED STEEL SHEET BODY

MP-H

ELECTRICAL TECHNICAL INFO			
Current	Resistance R (mohm/m)	Reactance X (mohm/m)	Impedance Z (mohm/m)
<b>Aluminum</b>			
160	0,29	0,29	0,41
250	0,33	0,33	0,47
315	0,27	0,27	0,39
400	0,25	0,25	0,36
500	0,12	0,12	0,17
600	0,10	0,10	0,14
<b>COPPER</b>			
250	0,22	0,18	0,28
315	0,18	0,16	0,24
400	0,15	0,15	0,21
600	0,10	0,12	0,15

**Calculate the voltage drop ΔV% according to the formula below.**

$$\Delta V\% = \sqrt{3} \times (R \times \cos\phi + X \times \sin\phi) \times I_b \times L / U_e \times 100$$

R: Resistance ( mohm/m ) (Electrical technical info is found from the table)  
 X: Reactance ( mohm/m ) (Electrical technical info is found from the table)  
 I<sub>b</sub>: Sum of all extra effective charges  
 L: Total length of busbar line  
 U<sub>e</sub>: Supply voltage

Example: The calculation of 100 A Busbar is as follows.

(L) Line Length	100 mt
(I <sub>b</sub> ) Effective load	144 A
U <sub>e</sub> : Supply Voltage	400 V
Cos φ	0,80

R value is 0,29 x 10<sup>-3</sup> ohm/m and X value is 0,29 x 10<sup>-3</sup> ohm/m from the table.  
 (ΔV) Maximum allowable voltage drop 3%

$$\Delta V\% = \frac{\sqrt{3} \times (R \times \cos\phi + X \times \sin\phi) \times I_b \times L}{U_e} \times 100$$

$$\Delta V\% = \frac{1,73 \times (0,29 \times 0,8 + 0,29 \times 0,6) \times 10^{-3} \times 144 \times 100}{400} \times 100 = 2,53\%$$

The value found is less than 3%. 100 A Busbar selection is suitable according to voltage drop calculation.

## Busbar Technical Data

<b>TECHNICAL TABLE (MP-H AL)</b>								
ALUMINUM CONDUCTOR (AL)								
Rated Current	In	A	160	250	315	400	500	600
Busbar Code			MP-HA16	MP-HA25	MP-HA31	MP-HA40	MP-HA50	MP-HA60
Protection Class	IP55							
Standards	IEC 61439-6 TS EN 61439-6 IEC 61439-1 TS EN 61439-1							
Max. Rated Operating Voltage	Ue	Vac	1000					
Frequency	f	Hz	50					
Rated Insulation Voltage	Ui	V	1000	Category IV				
Mechanical Impact Resistance (IK Code)	Plug-in Busbar IK09							
Measures for the Protection of People	Basic Protection (TS HD 60364-4-41, item A1)							
Rated Short Term Current (1s)	Icw	kA	10	15	15	30	30	35
Rated Peak Withstand Current	Ipk	kA	17	30	30	63	63	73,5
Rated Short Time Current for Neutral Conductor (1s)	Icw	kA	6	9	9	18	18	21
Rated Peak Withstanding Current for Neutral Conductor	Ipk	kA	9,18	15,3	15,3	36	36	44,1
Rated Short Time Current For Prot. Circuit (1s)	Icw	kA	6	9	9	18	18	21
Rated Peak Withstand Current for Prot. Circuit	Ipk	kA	9.18	15,3	15.3	36	36	44,1

<b>TECHNICAL TABLE (MP-H CU)</b>								
COPPER CONDUCTOR (CU)								
Rated Current	In	A	250	315	400	600		
Busbar Code			MP-HC26	MP-HC32	MP-HC41	MP-HC61		
Protection Class	IP55							
Standards	IEC 61439-6 TS EN 61439-6 IEC 61439-1 TS EN 61439-1							
Max. Rated Operating Voltage	Ue	Vac	1000					
Frequency	f	Hz	50					
Rated Insulation Voltage	Ui	V	1000		Category			
Mechanical Impact Resistance (IK Code)	Plug-in Busbar IK09							
Measures for the Protection of People	Basic Protection (TS-HD 60364-4-41, item A1)							
Rated Short Term Current (1s)	Icw	kA	18	18	26	35		
Rated Peak Withstand Current	Ipk	kA	36	36	52	72		
Rated Short Time Current for Neutral Conductor (1s)	Icw	kA	10,5	10,5	14,5	20		
Rated Peak Withstanding Current for Neutral Conductor	Ipk	kA	21	21	31	44,3		
Rated Short Time Current For Prot. Circuit (1s)	Icw	kA	10,5	10,5	14,5	20		
Rated Peak Withstand Current for Prot. Circuit	Ipk	kA	21	21	31	44,3		

MP-H

# Vertical and Horizontal Busbar Applications

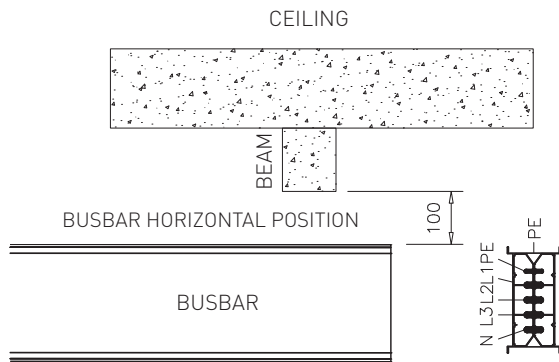


FIGURE-1 BEAM TRANSMISSION

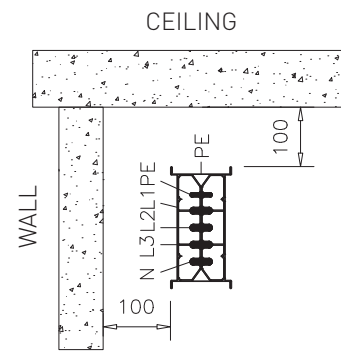


FIGURE-2 HORIZONTAL POSITION

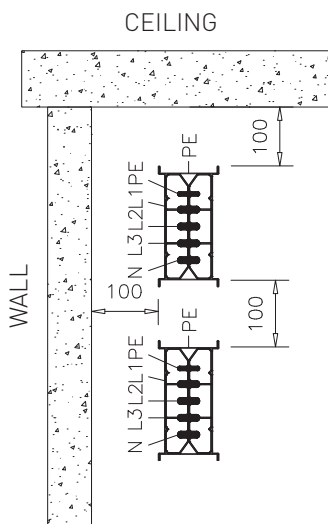


FIGURE-3 HORIZONTAL DOUBLE

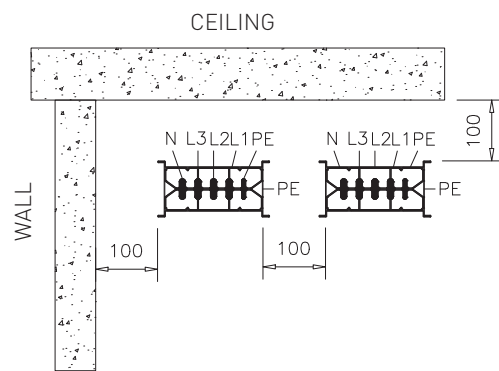


FIGURE-4 VERTICAL DOUBLE

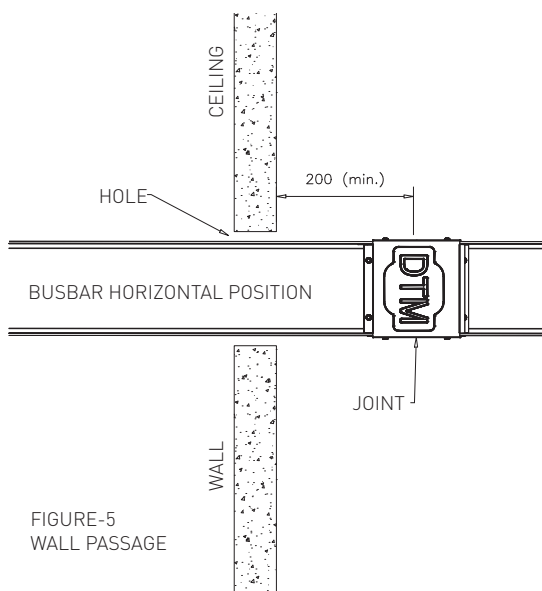


FIGURE-5 WALL PASSAGE

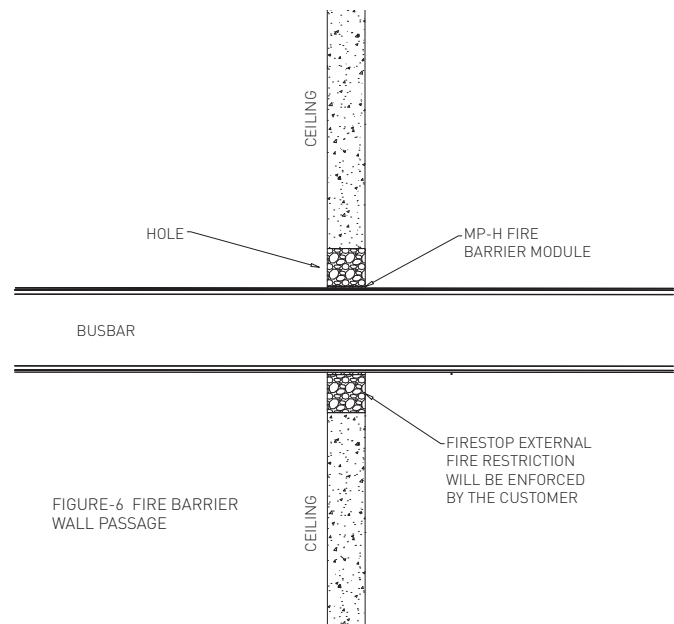


FIGURE-6 FIRE BARRIER WALL PASSAGE

MP-H

All dimensions are given in mm. The dimensions given above are minimum values.

## Horizontal Expansion Unit Applications

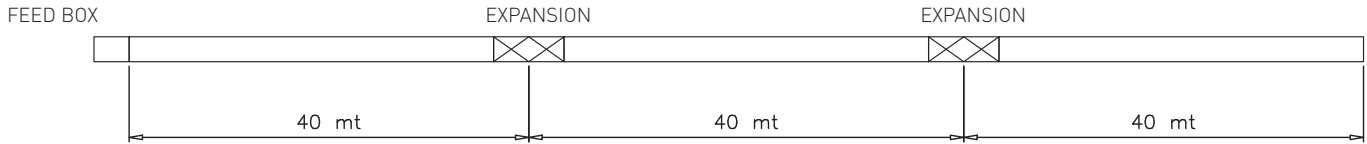
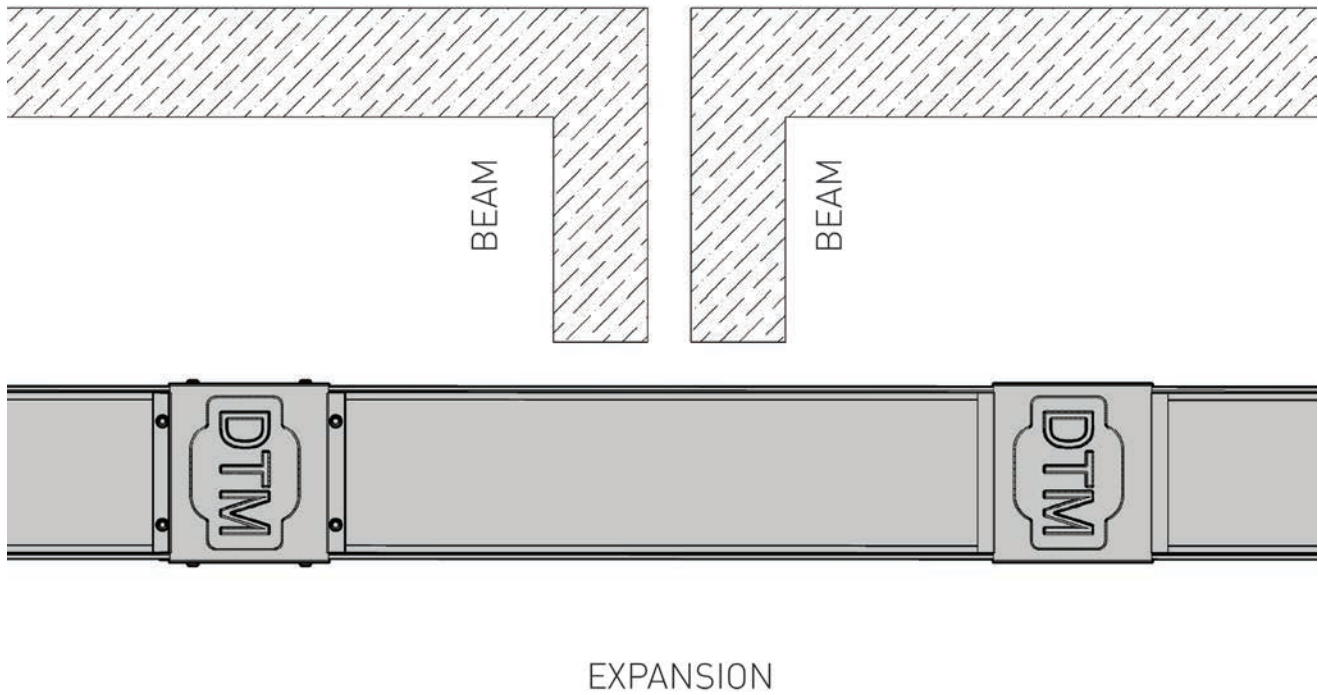


Figure 1. Horizontal expansion application

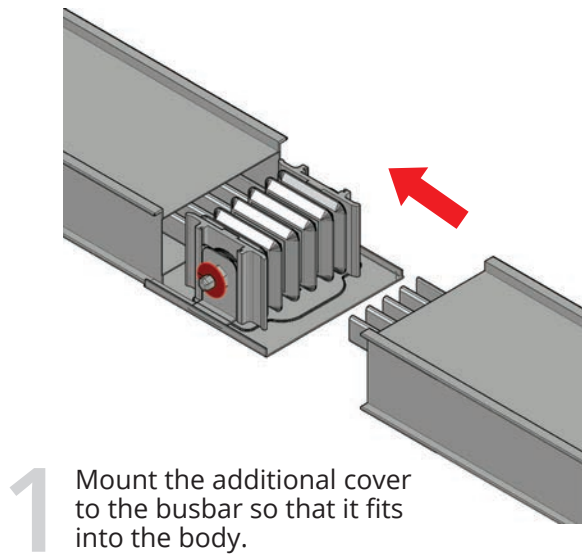
### BUILDING EXPANSION



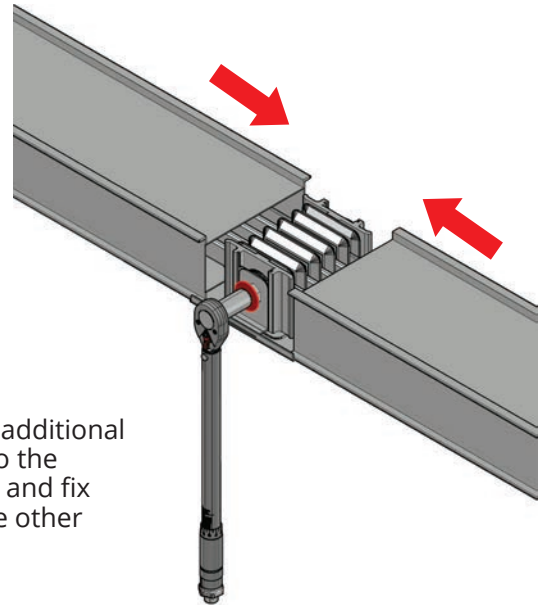
Şekil 2. Horizontal building expansion application

Horizontal Expansion is used in transitions between two buildings. In addition, the horizontal expansion units should be used every 40 meters.

### Installation Method

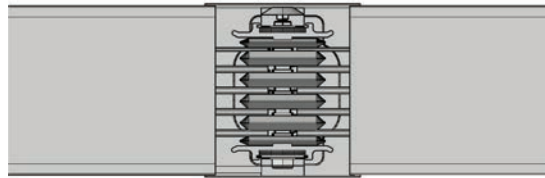


1 Mount the additional cover to the busbar so that it fits into the body.



2 Fix the additional block to the busbar and fix it to the other body.

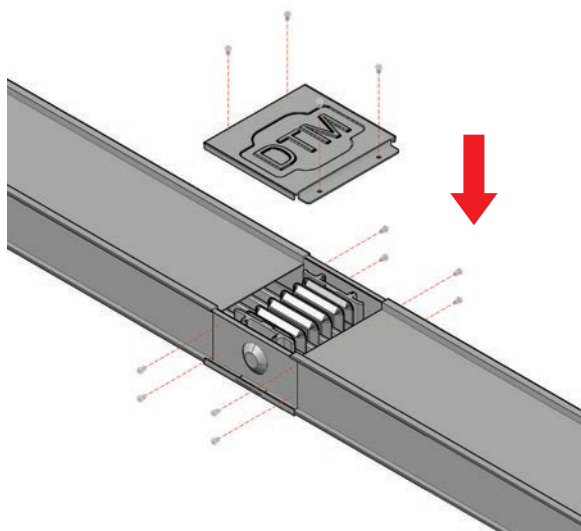
RECOMMENDED TORQUE VALUE: 40 lbft (55 Nm)



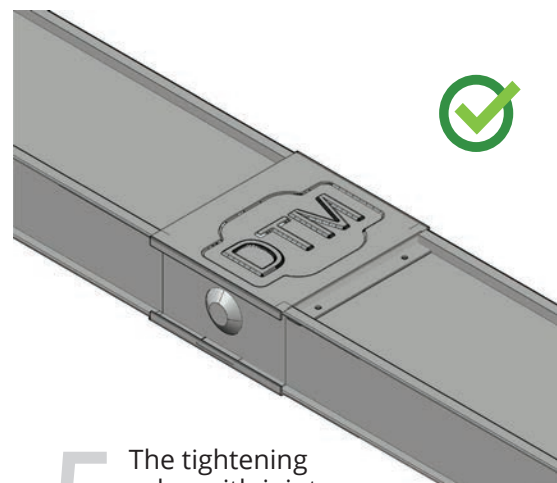
MP-H



3 Tighten the outer head bolt until the first head breaks off.



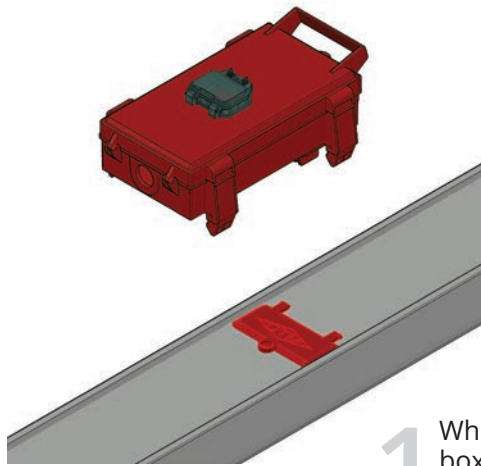
4 Before closing the joint cover, check whether the bolt(s) are cracked or broken and mount the joint cover.



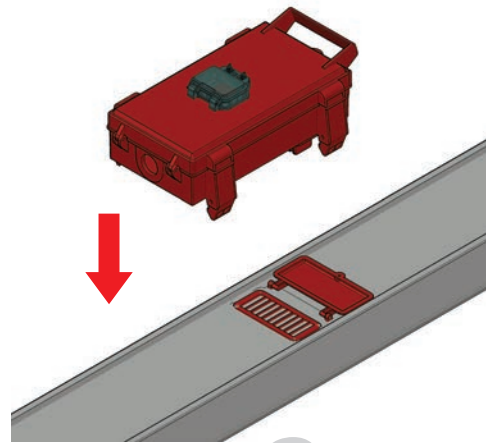
5 The tightening value with joint block torque is around 55Nm (40lbft).



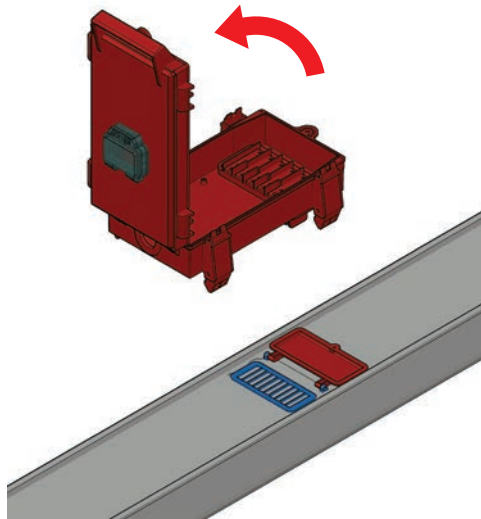
## Tap-Off Box (up to 160A) Installation



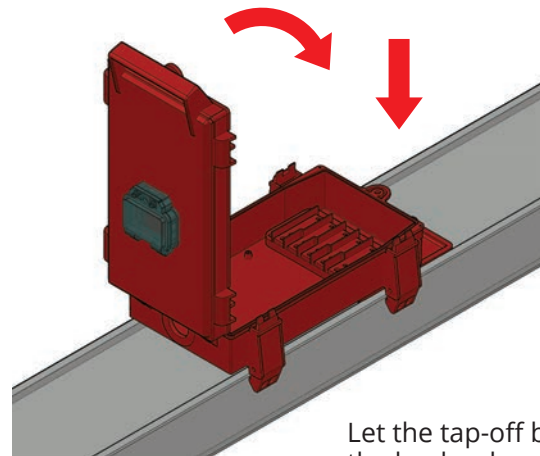
1 While assembling the box, pay attention to the protrusion on the lower entrance of the tap-off box and mount it to the socket.



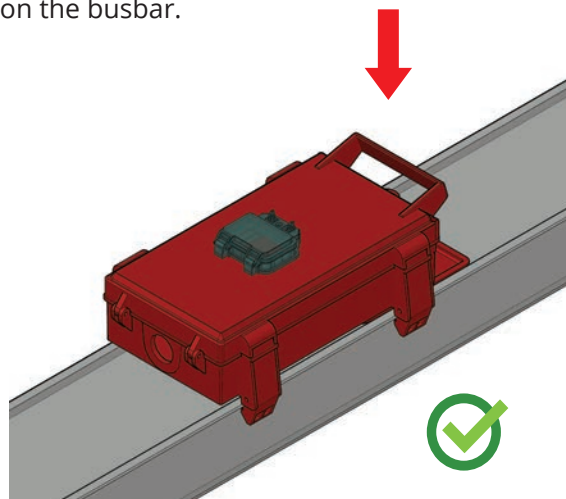
2 Open the socket cover.



3 It should be mounted by opening the cover of the tap-off box and placing it on the busbar.



4 Let the tap-off box fit on the busbar by pushing it from the body. Make sure it fits on the busbar.

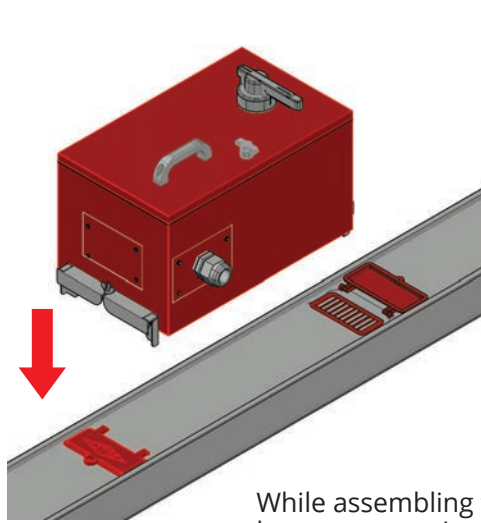


5

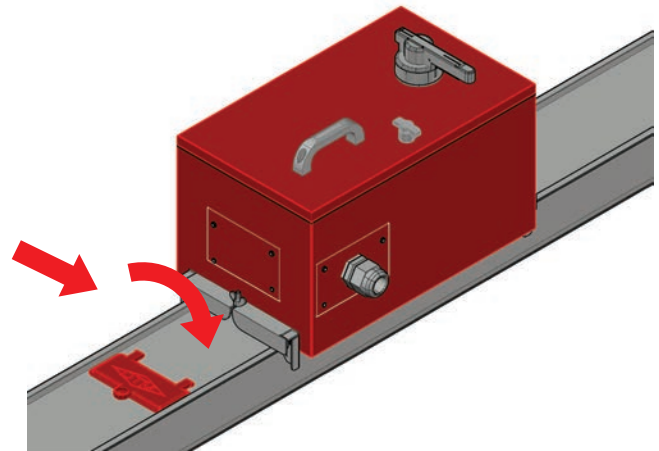
Close the cover of the tap-off box. With the help of the lid with a special mechanism energy is activated when the lid is closed.

MP-H

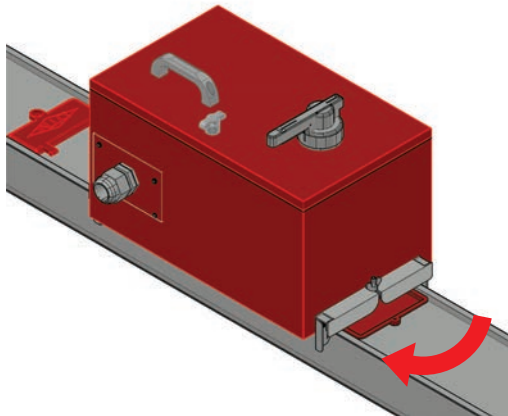
## Tap-Off Box (above 160A) Installation



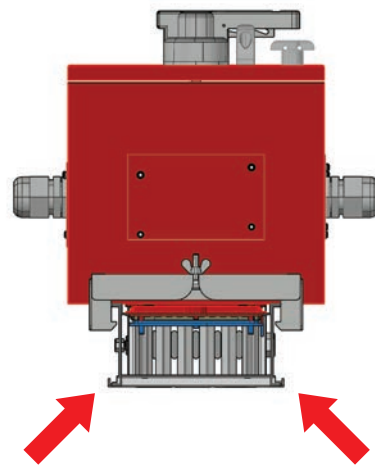
1 While assembling the box, pay attention to the protrusion on the lower entrance of the outlet box and mount it to the socket.



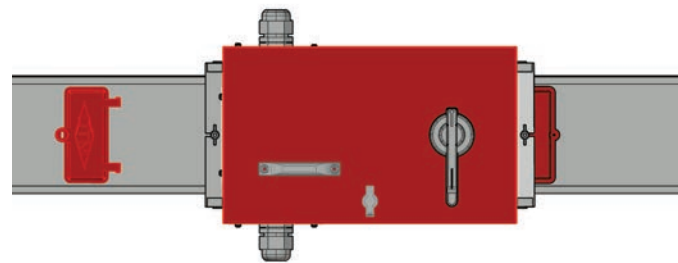
2 After the Tap-Off Box is mounted to the busbar, tighten the lower clamps of the box.



3 After the Tap-Off Box is mounted to the busbar, tighten the box upper clamps.



4 After mounting the Tap-Off Box to the busbar, make sure that the lower clamps of the box are fully seated on the busbar body.



5 Activate the Tap-Off Box via a special mechanism. When the mechanism is in (OFF), the cover is closed, and when it is in the (ON) position, energy is supplied. NOTE: In the (ON) Position for safety reasons, the box cover is prevented from being opened by the mechanism.

MP-H

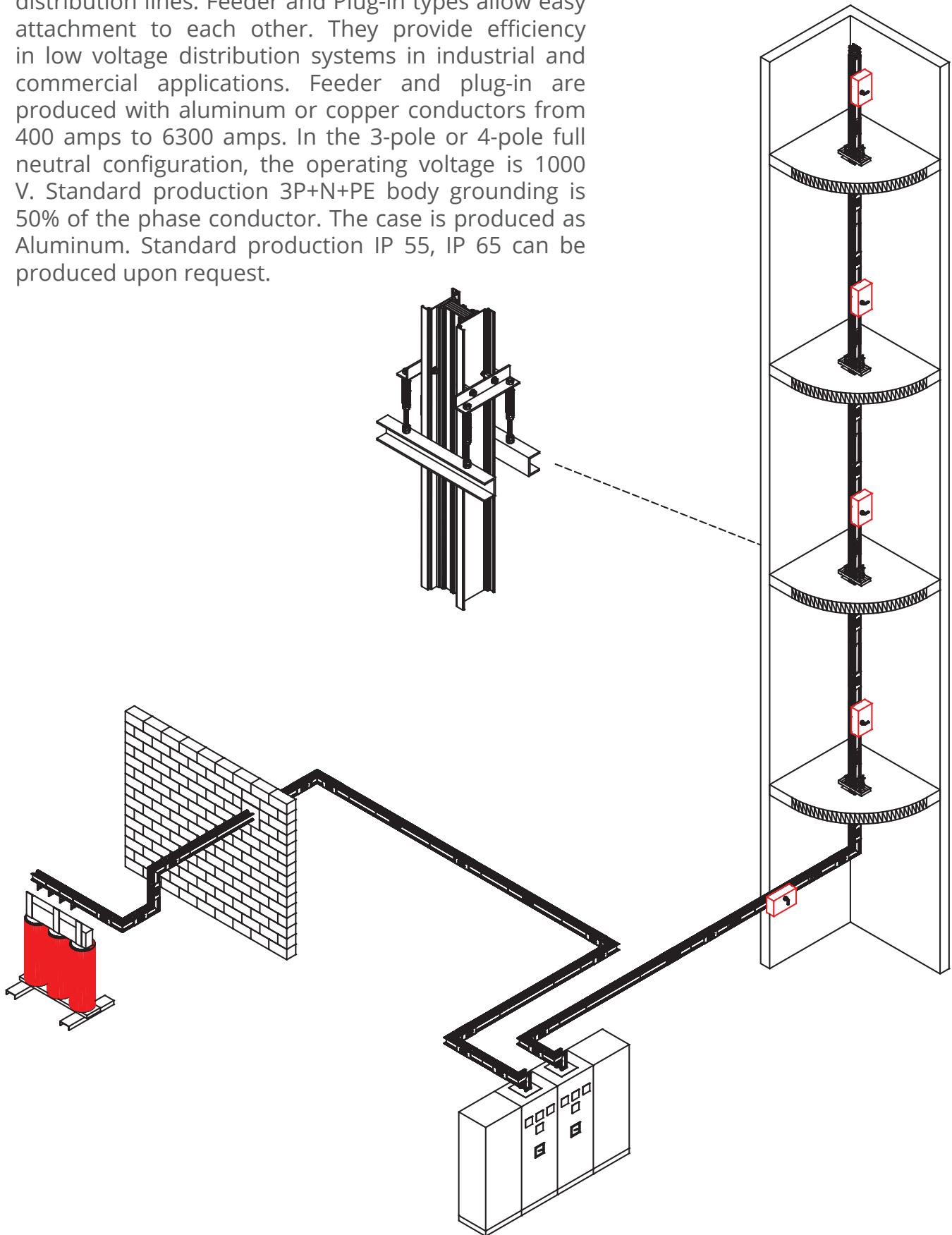
The background is a vibrant red color with a complex geometric pattern. It features overlapping, semi-transparent white and light red shapes, including squares and rectangles, some of which are filled with a grid of small white dots. The overall effect is a modern, technical, and dynamic aesthetic.

**HP-K  
SERIES  
400A-6300A**

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## GENERAL FEATURES

Busbar trunking systems are sandwich systems compatible with complex low voltage energy distribution lines. Feeder and Plug-in types allow easy attachment to each other. They provide efficiency in low voltage distribution systems in industrial and commercial applications. Feeder and plug-in are produced with aluminum or copper conductors from 400 amps to 6300 amps. In the 3-pole or 4-pole full neutral configuration, the operating voltage is 1000 V. Standard production 3P+N+PE body grounding is 50% of the phase conductor. The case is produced as Aluminum. Standard production IP 55, IP 65 can be produced upon request.





## General

It is used in places with high current requirements such as between transformer and panel, high service buildings, commercial centers, industrial facilities, military facilities, public buildings.

## Sandwich Construction

Feeder and Plug-in busbars are sandwich type systems that are easy to assemble. Due to its structure, the voltage drop characteristics are at minimum and it provides a regular low reactive power factor. Construction channels are designed as aluminum profile and upper and lower covers are aluminum. Hysteresis currents and Eddy currents are minimized by spreading them in the aluminum channel. In cases where 2 or 3 conductors are used per phase in Feeder and Plug-in lengths, parallelization is made at the end of each phase. (In the change of phases). The body of the plug-in lengths has windows with lids that allow flat mounting and exit of tap-offs. Additional accessories used for the feeder can also be used in Plug-in types. Plug-in and Feeder types can be mounted together.

## Full Enclosed Construction

Busbar systems have a fully closed design. This duct design does not reduce the electrical values and since there are no ventilation holes, the contact of the conductors with a foreign material is prevented. The heat dissipation spreads directly with the body close to the conductors.

## Finish

RAL 7038

Electrostatic paint is applied in busbar duct systems.

## Insulation and Product Features

All busbars are applied epoxy resin. The joints are tin plated to minimize contact resistance and surface corrosion on the surface. Splice block conductors can be silver plated as an option.

## Economic

Busbar trunking systems take up less space than cable trunking systems and have low installation costs.



# BUSBAR FEATURES

## Voltage Drop

Due to its compact structure, it provides the most efficient transmission of power by minimizing the voltage drop due to its very low reactance.

## Joints

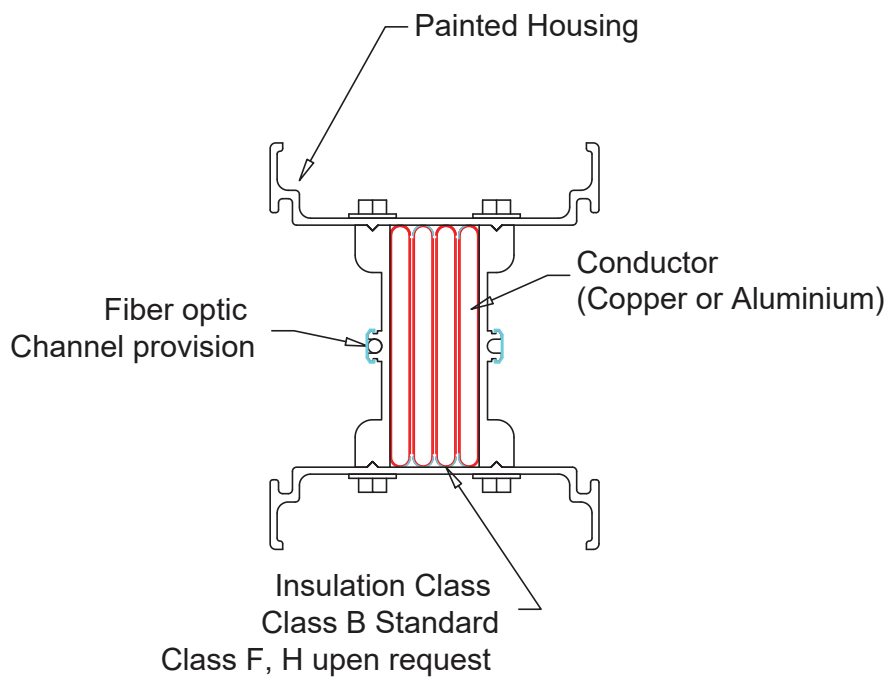
In external feeder busbars, the joints applied with a special gasket to prevent rain water from entering into it provide protection and smoothness in all conditions.

## Fitting

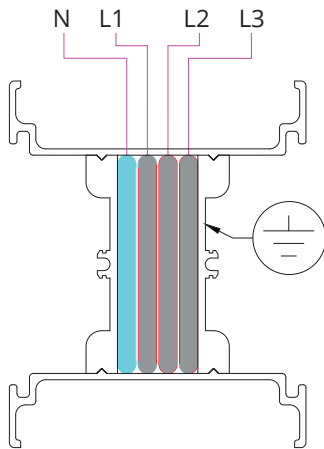
Elbows can be easily added with an additional block.

## Plug-In Points

Plug-ins are V2 (non-flammable), resistant to harsh environmental conditions and resistant to high temperatures. Sealed protection cover made of flame retardant certified material is IP 55. Jaws contact surfaces provide permeability thanks to the compression spring on the conductors.

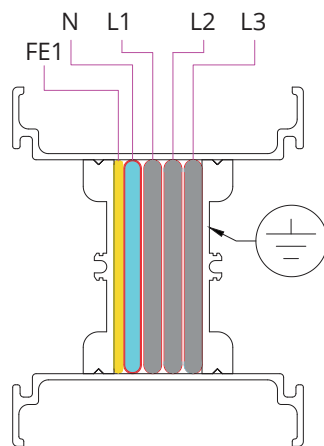


Ratings		
	AL	CU
400A	✓	✓
500A	✓	✓
630A	✓	✓
800A	✓	✓
1000A	✓	✓
1250A	✓	✓
1350A	✓	✓
1600A	✓	✓
2000A	✓	✓
2250A	✓	✓
2500A	✓	✓
2000A	✓	✓
2500A	✓	✓
3000A	✓	✓
3200A	✓	✓
3300A	✓	✓
3600A	✓	✓
4000A	✓	✓
4250A	✓	✓
5000A	✓	✓
6300A	✓	✓
✓	Standard Production	



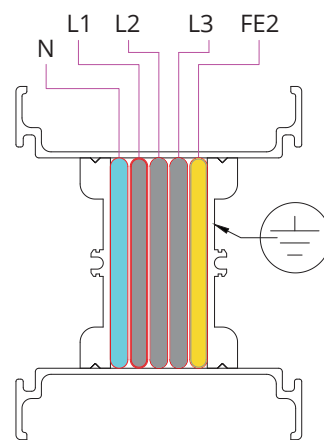
3P+N+PE (Housing) (4P) (T2)

The neutral conductor cross-section is the same as the phase conductor, and the case cross-section used for grounding is larger than the phase conductor cross-section.



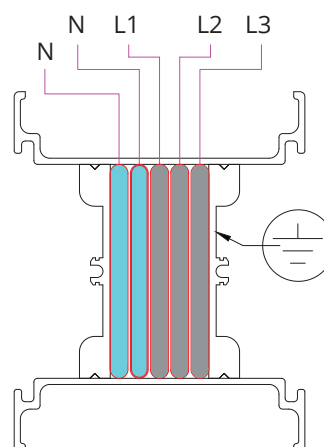
3P+N+FE1+PE (Housing) (5P) (T3)

Neutral conductor cross-section is placed in the same housing as the phase conductor with the same grounding cross-section as 1/2.



3P+N+FE2+PE (Housing) (5P) (T4)

Neutral conductor cross-section is the same as phase conductor and 100% grounding cross-section is placed in the housing as the same.



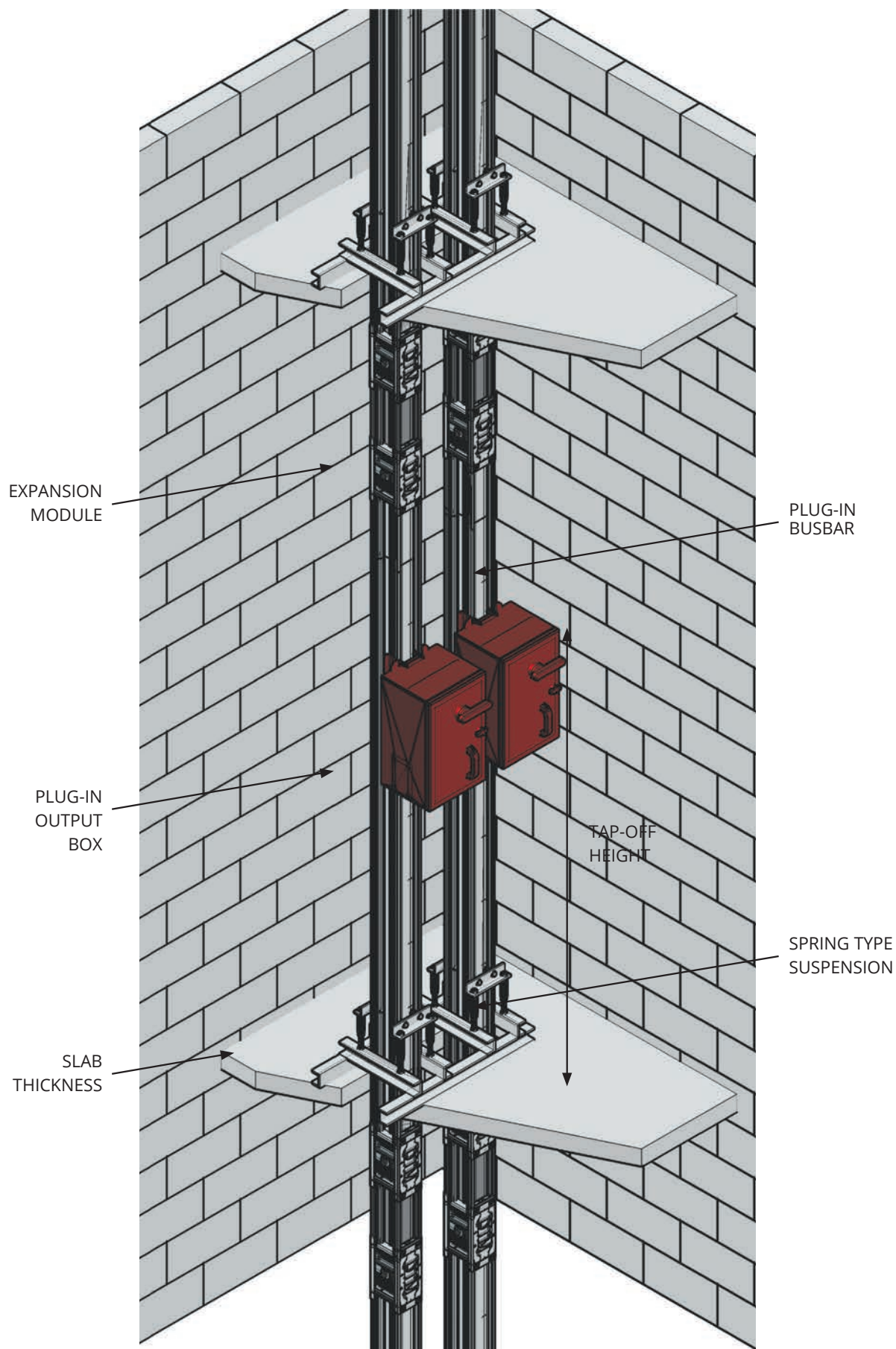
3P+2N+PE (Housing) (5P) (T5)

The neutral conductor cross-section is the same as the phase conductor, and the neutral conductor cross-section is twice that of the phase conductor.

HP-K

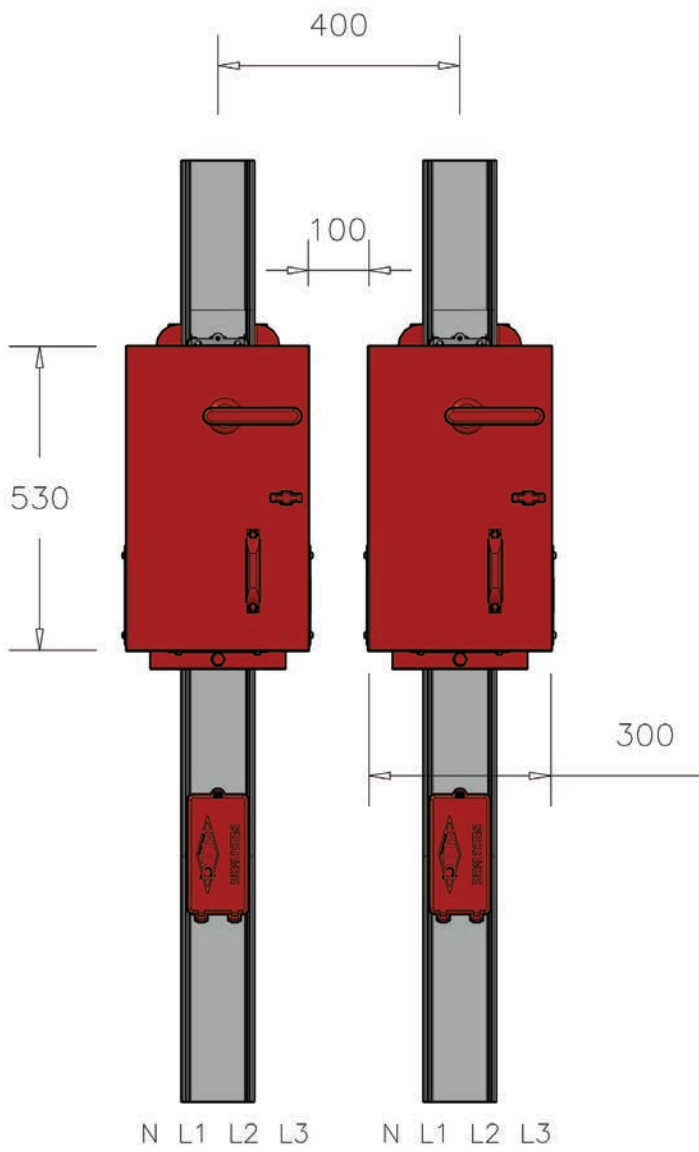


VERTICAL DISTRIBUTION PROJECT

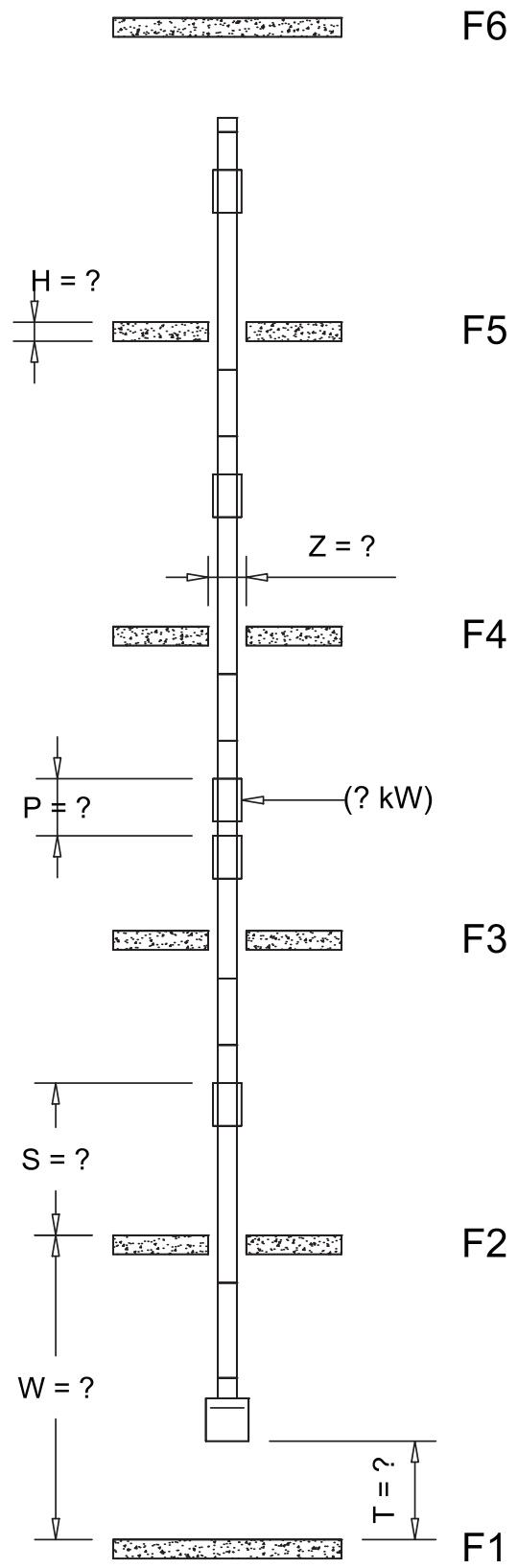


HP-K

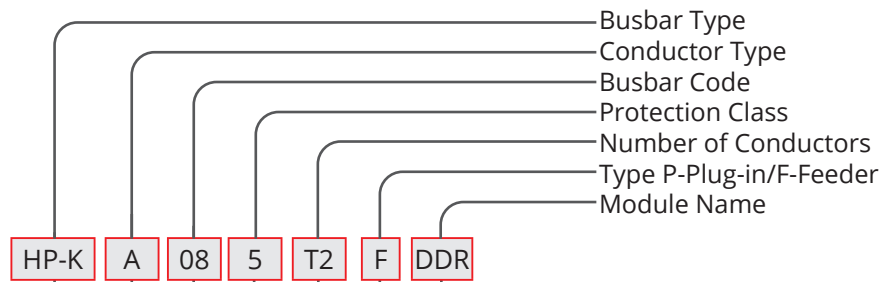
# VERTICAL DISTRIBUTION PROJECT



H = Slab Thickness (cm ?)  
 W = Floor Height (cm ?)



ORDER CODE SYSTEM



BUSBAR NAME

Busbar Type

ALUMINUM (AL)	(A)
COPPER (CU)	(C)

Conductor Type

HP-K AL		HP-K CU	
CRRNT	BUSBAR CODE	CRRNT	BUSBAR CODE
400	04	550	05
500	05	650	06
630	06	800	07
800	08	1000	09
-	-	1250	13
1000	10	1350	15
1250	12	1600	17
1350	14	-	-
-	-	2000	21
1600	16	-	-
-	-	2250	23
2000	20	2500	24
2500	25	-	-
-	-	2000	22
-	-	2500	27
2500	26	3300	33
-	-	3600	36
3000	30	4000	41
3200	32	-	-
-	-	4250	42
4000	40	5000	51
5000	50	6300	64
6300	63	-	-

Busbar Current

IP55	5
IP67	6

Protection Class

Number of Conductors

Number of Conductors	Code	L1	L2	L3	N	1/2 GRND	CLEAN GRND	1/2 CLEAN GRND	GRND (BODY)
3P+PE (3P)	T1	✓	✓	✓					✓
3P+N+PE (4P)	T2	✓	✓	✓	✓				✓
3P+N+PE+FE1 (5P)	T3	✓	✓	✓	✓	✓			✓
3P+N+PE+FE2 (5P)	T4	✓	✓	✓	✓			✓	✓
3P+2N+PE (5P)	T5	✓	✓	✓	✓		✓		✓

(P) PLUG-IN  
USED FOR TAKING CURRENT FROM PLUG-IN PLACES IN FLAT SIZES.

(F) FEEDER  
USED WHERE CURRENT IS NEEDED TO BE TAKEN FROM ADDITIONAL POINTS AND DIRECT FEEDING IS MADE.

Type P-Plug-in / F-Feeder

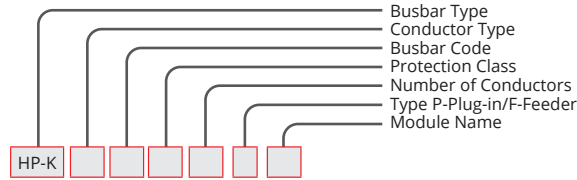
Module Name

Feeder Busbar	FS
Plug-In Busbar	PS
Horizontal Elbow Up	YDU
Horizontal Elbow Down	YDD
Vertical Elbow Left	DDL
Vertical Elbow Right	DDR
Feeder Special Length	FX
Plug-In Special Length	PX
Double Vertical Elbow (Off-Set) Up	DOU
Double Vertical Elbow (Off-Set) Down	DOD
Double Vertical Elbow (Off-Set) Left	YOL
Double Vertical Elbow (Off-Set) Right	YOR
Up Left (Combined Off-Set)	ULK
Up Right (Combined Off-Set)	URK
Left Down (Combined Off-Set)	LDK
Right Down (Combined Off-Set)	RDK
Left Up (Combined Off-Set)	LUK
Right Up (Combined Off-Set)	RUK
Down Left (Combined Off-Set)	DLK
Down Right (Combined Off-Set)	DRK
Center (T) Module	OT
Right (T) Module	RT
Left (T) Module	LT
Reducer	RD
Expansion Module	G
Panel Connection Module (E)	PME
Panel Connection Module (D)	PMD
Panel Vertical Connection Module Up	PM1
Panel Vertical Connection Module Down	PM2
Panel Vertical Connection Module Up	PM3
Panel Vertical Connection Module Down	PM4
Panel Horizontal Connection Module Left	PM5
Panel Horizontal Connection Module Right	PM6
Panel Horizontal Connection Module Left	PM7
Panel Horizontal Connection Module Right	PM8
With Mechanism (Plug-In)	HPP
Compact Switch (Plug-In)	HPS
Compact Switch (Bolt-On)	HPB
With Mechanism (Bolt-On)	HPM
Vertical Transformer Module	TR1
Up Transformer Module	TRU
Down Transformer Module	TRD
Right Transformer Module	TRR
Left Transformer Module	TRL
Horizontal Transformer Connect. Module	TMH
Horizontal Transformer Connect. Module	TMF
Transformer Connection Module	TMK
Transformer Connection Module Center	TMO
Start Feed Module	BM1
End Feed Module	BM2
Center Feed Module	OB
Cross Module	CM
Termination Module	S1
Horizontal Expansion	YD
Horiz. Suspension Vert. Module (Special)	YVA
Wall Suspension Set (Horizontal)	DYA
Horiz. Suspension Vert. Module (U Profile)	YVU
Horiz. Suspen. Horiz. Module (U Profile)	YHU
Horiz. Susp. Vert. Module (45x65 Bracket)	YUD
Horiz. Susp. Horiz. Module (45x65 Bracket)	YUY
Shaft Suspension Module (Spring)	SA
Horizontal Panel Module Entrance	YP1
Horizontal Panel Module Exit	YP2
Termination Module	S2
Horiz. Susp. Vert. Module (50x50 Bracket)	YLD
Horiz. Susp. Vert. Module (50x50 Bracket)	YLY
Horiz. Susp. Vert. (U) Profile Module	YUP
Horizontal Ceiling Connection Kit	YTK
Flexible Connection Busbar	FB
Panel Bellows Flange	PKF
Horiz. Susp. Vertical Application (NPI80)	YID
Horiz. Susp. Horizontal Application (NPI80)	YIY
Ceiling Suspension NPI	IYD

HP-K



# Standard Size



Feeder Busbar	FS
---------------	----

**SAMPLE ORDER**  
 1600 A Aluminum,  
 Feeder IP 55 4 Conductors  
**HP-KA165T2FS**

**FEEDER BUSBAR**

It provides direct feeding in power transmission. Energy can be received via Bolt-on. Standard production is 3000 mm, upon request, it can be manufactured in different sizes starting from minimum 500 mm.



Plug-in Busbar	PS
----------------	----

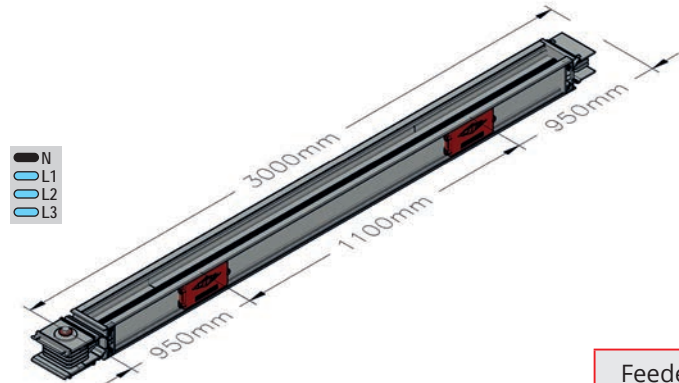
**SAMPLE ORDER**  
 1250 A Aluminum,  
 Plug-in IP 55 4 Conductors  
**HP-KA125T2PS**

**PLUG-IN BUSBAR**

**Standard production in Plug-in sizes with 2 outlets, the number of outlets can be changed upon request.**

Plug-in busbars; With bolt-on output boxes up to 1000A from its additional points and Plug-in output boxes up to 630 A from its sockets, current can be taken.

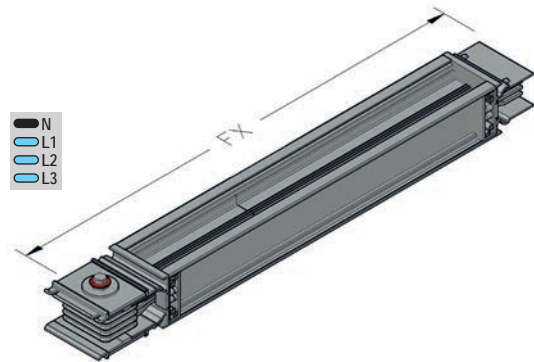
**Info:** Please specify the number of current receiving windows and whether they are single or double sided in your Plug-in orders.



Feeder Busbar Special Length	FX
---------------------------------	----

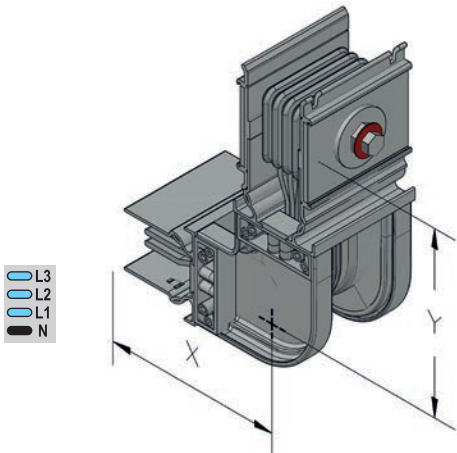
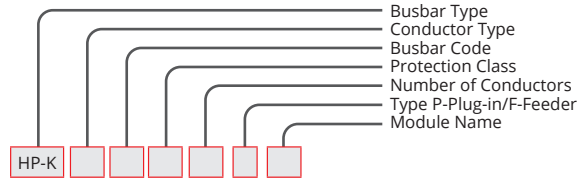
**SAMPLE ORDER**  
 2000 A Aluminum,  
 Feeder IP 55 4 Conductors  
**HP-KA205T2FX**

**Info:**  
 Feeder Min. Special Length = 50 cm  
 Plug-in Min. Special Length = 100 cm



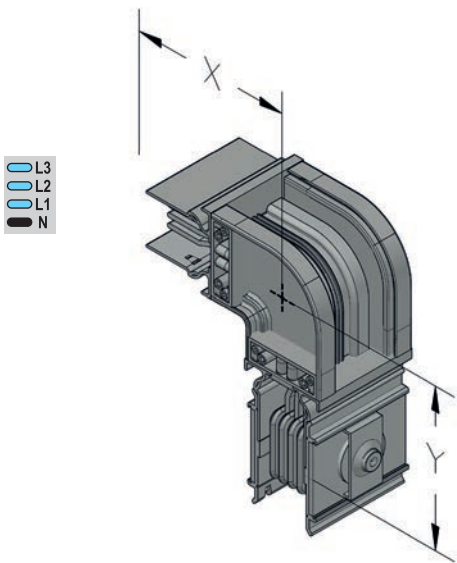
Please call our company for special size modules.

Elbow Modules



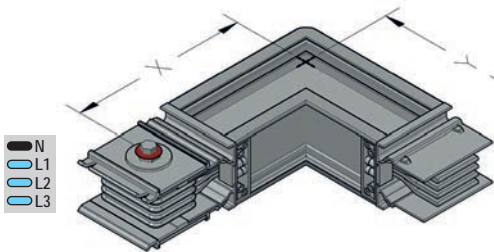
Vertical Elbow Upwards DDU

**SAMPLE ORDER**  
800 A Aluminum,  
Elbow IP 55 4 Conductors  
**HP-KA085T2FDDU**



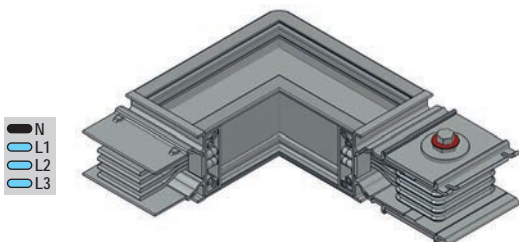
Vertical Elbow Downwards DDD

**SAMPLE ORDER**  
3200 A Aluminum,  
Elbow IP 55 4 Conductors  
**HP-KA325T2FDDD**



Horizontal Elbow Left YDL

**SAMPLE ORDER**  
4000 A Aluminum,  
Elbow IP 55 4 Conductors  
**HP-KA405T2FYDL**



Horizontal Elbow Right YDR

**SAMPLE ORDER**  
800 A Aluminum,  
Elbow IP 55 4 Conductors  
**HP-KA085T2FYDR**

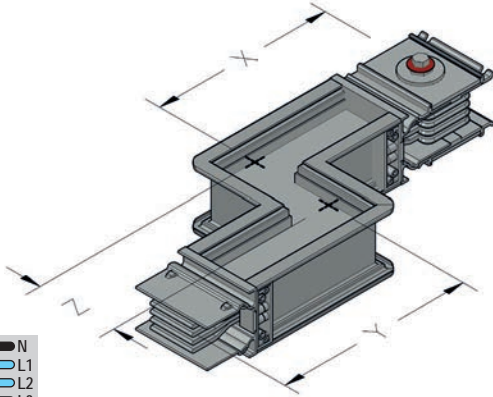
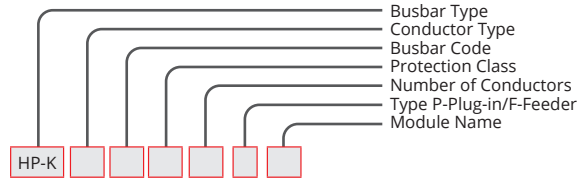
VERTICAL ELBOW					
Used in vertical mounting of busbar lengths in up and down turns.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	230	230	550A	230	230
500A	230	230	650A	230	230
630A	230	230	800A	230	230
800A	230	230	1000A	230	230
1000A	230	230	1250A	230	230
1250A	230	230	1350A	230	230
1350A	230	230	1600A	230	230
1600A	230	230	2000A	230	230
2000A	230	230	2250A	230	230
2500A	230	230	2500A	230	230
2500A	230	230	2000A	230	230
3000A	230	230	2500A	230	230
3200A	230	230	3300A	230	230
4000A	230	230	3600A	230	230
5000A	230	230	4000A	230	230
6300A	230	230	4250A	230	230
			5000A	230	230
			6300A	230	230

HORIZONTAL ELBOW					
Used for horizontal mounting of busbar lengths in right and left turns.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	250	250	550A	250	250
500A	250	250	650A	250	250
630A	250	250	800A	250	250
800A	257	257	1000A	257	257
1000A	270	270	1250A	265	265
1250A	285	285	1350A	270	270
1350A	292	292	1600A	277	277
1600A	310	310	2000A	292	292
2000A	330	330	2250A	310	310
2500A	355	355	2500A	330	330
2500A	363	363	2000A	308	308
3000A	393	393	2500A	323	323
3200A	413	413	3300A	363	363
4000A	453	453	3600A	378	378
5000A	503	503	4000A	393	393
6300A	578	578	4250A	413	413
			5000A	453	453
			6300A	516	516

HP-K

Please call our company for special size modules.

# Elbow Modules



- N
- L1
- L2
- L3

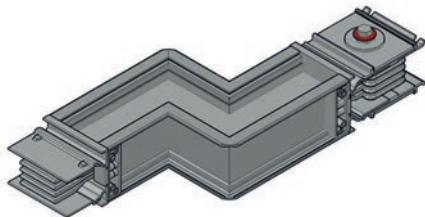
Double Elbow Horizontal Left (Combined Off-set) YOL

**SAMPLE ORDER**  
1000 A Aluminum,  
Offset IP 55 4 Conductors  
**HP-KA105T2FYOL**

## DOUBLE HORIZONTAL ELBOW (OFF-SET)

Used in horizontal mounting of busbar lengths, on right and left protruding turns.

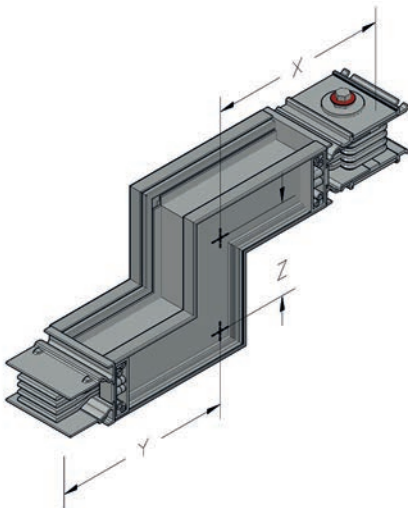
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	250	250	202	550A	250	250	202
500A	250	250	202	650A	250	250	202
630A	250	250	202	800A	250	250	202
800A	257	257	217	1000A	257	257	217
1000A	270	270	242	1250A	265	265	232
1250A	285	285	272	1350A	270	270	242
1350A	292	292	287	1600A	277	277	257
1600A	310	310	322	2000A	292	292	287
2000A	330	330	362	2250A	310	310	322
2500A	355	355	412	2500A	330	330	362
2500A	363	363	429	2000A	308	308	318
3000A	393	393	489	2500A	323	323	348
3200A	413	413	529	3300A	363	363	428
4000A	453	453	609	3600A	378	378	458
5000A	503	503	706	4000A	393	393	488
6300A	578	578	857	4250A	413	413	528
				5000A	453	453	608
				6300A	516	516	735



- N
- L1
- L2
- L3

Double Elbow Horizontal Right (Combined Off-set) YOR

**SAMPLE ORDER**  
1600 A Aluminum,  
Offset IP 55 4 Conductors  
**HP-KA165T2FYOR**



- N
- L1
- L2
- L3

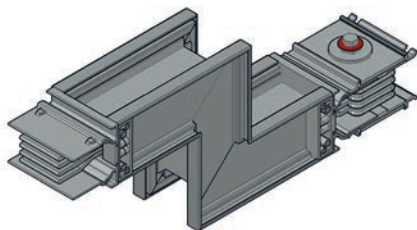
Double Vertical Elbow Up (Combined Off-set) DOU

**SAMPLE ORDER**  
2500 A Aluminum,  
Offset IP 55 4 Conductors  
**HP-KA255T2FDOU**

## DOUBLE VERTICAL ELBOW (OFF-SET)

Used in vertical mounting of busbar lengths, more or less protruding turns.

(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	230	230	230	550A	230	230	230
500A	230	230	230	650A	230	230	230
630A	230	230	230	800A	230	230	230
800A	230	230	230	1000A	230	230	230
1000A	230	230	230	1250A	230	230	230
1250A	230	230	230	1350A	230	230	230
1350A	230	230	230	1600A	230	230	230
1600A	230	230	230	2000A	230	230	230
2000A	230	230	230	2250A	230	230	230
2500A	230	230	230	2500A	230	230	230
2500A	230	230	230	2000A	230	230	230
3000A	230	230	230	2500A	230	230	230
3200A	230	230	230	3300A	230	230	230
4000A	230	230	230	3600A	230	230	230
5000A	230	230	230	4000A	230	230	230
6300A	230	230	230	4250A	230	230	230
				5000A	230	230	230
				6300A	230	230	230



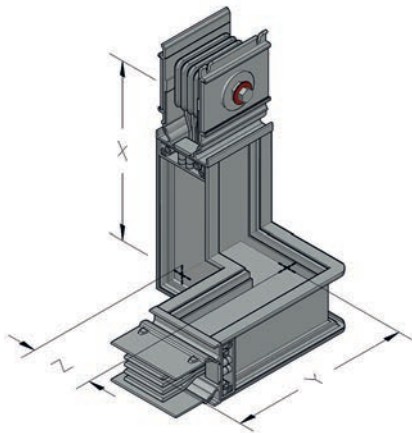
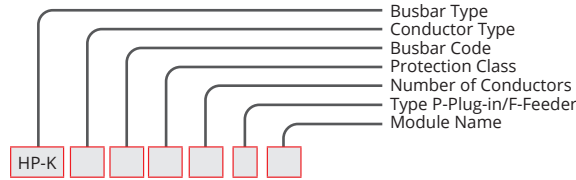
- N
- L1
- L2
- L3

Double Vertical Elbow Down (Combined Off-set) DOD

**SAMPLE ORDER**  
3000 A Aluminum,  
Offset IP 55 4 Conductors  
**HP-KA305T2FDOD**

Please call our company for special size modules.

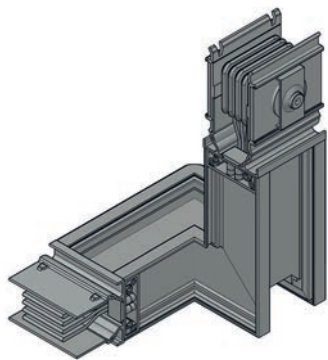
Elbow Modules



- N
- L1
- L2
- L3

Left Up  
(Combined Off-set)      LUK

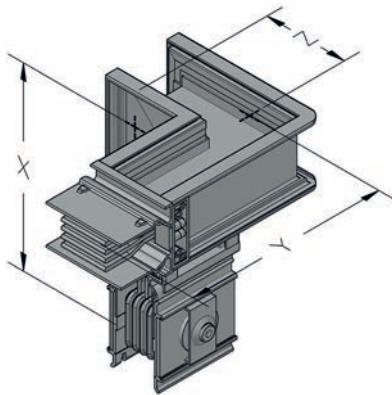
**SAMPLE ORDER**  
1250 A Aluminum,  
Combined Offset IP 55  
4 Conductors  
**HP-KA125T2FLUK**



- N
- L1
- L2
- L3

Right Up  
(Combined Off-set)      RUK

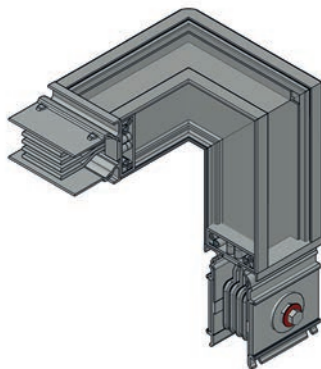
**SAMPLE ORDER**  
1000 A Aluminum,  
Combined Offset IP 55  
4 Conductors  
**HP-KA105T2FRUK**



- N
- L1
- L2
- L3

Left Down  
(Combined Off-set)      LDK

**SAMPLE ORDER**  
1600 A Aluminum,  
Combined Offset IP 55  
4 Conductors  
**HP-KA165T2FLDK**



- N
- L1
- L2
- L3

Right Down  
(Combined Off-set)      RDK

**SAMPLE ORDER**  
1350 A Aluminum,  
Combined Offset IP 55  
4 Conductors  
**HP-KA145T2FRDK**

RIGHT/LEFT UP COMBINED (OFF-SET)							
Used in horizontal mounting of busbar lengths, on right and left protruding turns.							
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	230	250	250	550A	230	250	250
500A	230	250	250	650A	230	250	250
630A	230	250	250	800A	230	250	250
800A	230	257	257	1000A	230	257	257
1000A	230	270	270	1250A	230	265	265
1250A	230	285	285	1350A	230	270	270
1350A	230	292	292	1600A	230	277	277
1600A	230	310	310	2000A	230	292	292
2000A	230	330	330	2250A	230	310	310
2500A	230	355	355	2500A	230	330	330
2500A	230	363	363	2000A	230	308	308
3000A	230	393	393	2500A	230	323	323
3200A	230	413	413	3300A	230	363	363
4000A	230	453	453	3600A	230	378	378
5000A	230	503	503	4000A	230	393	393
6300A	230	578	578	4250A	230	413	413
				5000A	230	453	453
				6300A	230	516	516

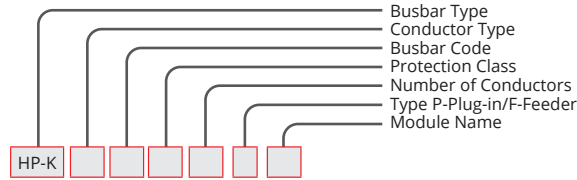
RIGHT/LEFT DOWN COMBINED (OFF-SET)							
Used as right and left in the transformation of busbar lengths from horizontal to vertical.							
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	230	250	250	550A	230	250	250
500A	230	250	250	650A	230	250	250
630A	230	250	250	800A	230	250	250
800A	230	257	257	1000A	230	257	257
1000A	230	270	270	1250A	230	265	265
1250A	230	285	285	1350A	230	270	270
1350A	230	292	292	1600A	230	277	277
1600A	230	310	310	2000A	230	292	292
2000A	230	330	330	2250A	230	310	310
2500A	230	355	355	2500A	230	330	330
2500A	230	363	363	2000A	230	308	308
3000A	230	393	393	2500A	230	323	323
3200A	230	413	413	3300A	230	363	363
4000A	230	453	453	3600A	230	378	378
5000A	230	503	503	4000A	230	393	393
6300A	230	578	578	4250A	230	413	413
				5000A	230	453	453
				6300A	230	516	516

HP-K

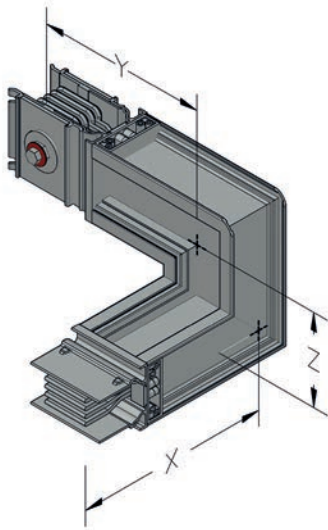
Please call our company for special size modules.



# Elbow Modules



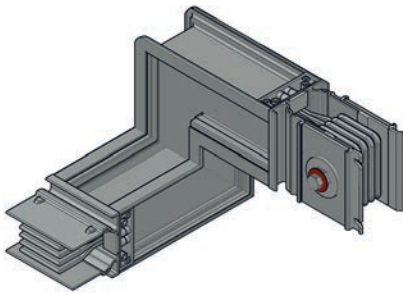
- N
- L1
- L2
- L3



Up Left  
(Combined Off-set)      ULK

**SAMPLE ORDER**  
2000 A Copper  
Combined Offset IP 55  
4 Conductors  
**HP-KC215T2FULK**

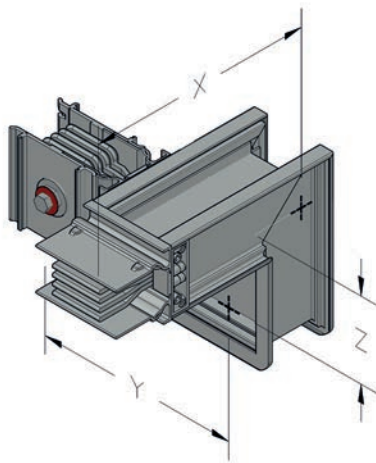
- N
- L1
- L2
- L3



Up Right  
(Combined Off-set)      URK

**SAMPLE ORDER**  
1250 A Copper  
Combined Offset IP 55  
4 Conductors  
**HP-KC135T2FURK**

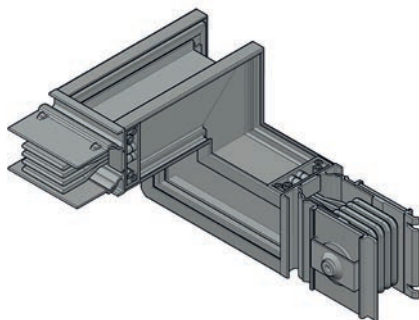
- N
- L1
- L2
- L3



Down Left  
(Combined Off-set)      DLK

**SAMPLE ORDER**  
1600 A Copper  
Combined Offset IP 55  
4 Conductors  
**HP-KC175T2FDLK**

- N
- L1
- L2
- L3



Down Right  
(Combined Off-set)      DRK

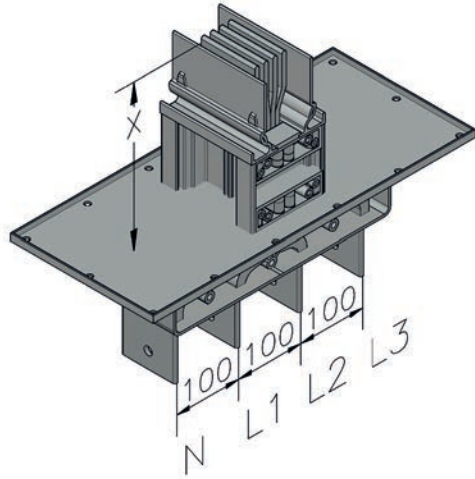
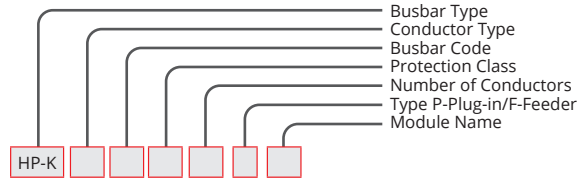
**SAMPLE ORDER**  
1250 A Aluminum,  
Combined Offset IP 55  
4 Conductors  
**HP-KA125T2FDRK**

UP RIGHT/LEFT COMBINED (OFF-SET)							
Used as right and left in the transformation of busbar lengths from horizontal to vertical.							
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	230	250	250	550A	230	250	250
500A	230	250	250	650A	230	250	250
630A	230	250	250	800A	230	250	250
800A	230	257	257	1000A	230	257	257
1000A	230	270	270	1250A	230	265	265
1250A	230	285	285	1350A	230	270	270
1350A	230	292	292	1600A	230	277	277
1600A	230	310	310	2000A	230	292	292
2000A	230	330	330	2250A	230	310	310
2500A	230	355	355	2500A	230	330	330
2500A	230	363	363	2000A	230	308	308
3000A	230	393	393	2500A	230	323	323
3200A	230	413	413	3300A	230	363	363
4000A	230	453	453	3600A	230	378	378
5000A	230	503	503	4000A	230	393	393
6300A	230	578	578	4250A	230	413	413
				5000A	230	453	453
				6300A	230	516	516

DOWN RIGHT/LEFT COMBINED (OFF-SET)							
Used as right and left in the transformation of busbar lengths from horizontal to vertical.							
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	230	250	250	550A	230	250	250
500A	230	250	250	650A	230	250	250
630A	230	250	250	800A	230	250	250
800A	230	257	257	1000A	230	257	257
1000A	230	270	270	1250A	230	265	265
1250A	230	285	285	1350A	230	270	270
1350A	230	292	292	1600A	230	277	277
1600A	230	310	310	2000A	230	292	292
2000A	230	330	330	2250A	230	310	310
2500A	230	355	355	2500A	230	330	330
2500A	230	363	363	2000A	230	308	308
3000A	230	393	393	2500A	230	323	323
3200A	230	413	413	3300A	230	363	363
4000A	230	453	453	3600A	230	378	378
5000A	230	503	503	4000A	230	393	393
6300A	230	578	578	4250A	230	413	413
				5000A	230	453	453
				6300A	230	516	516

Please call our company for special size modules.

Panel Modules



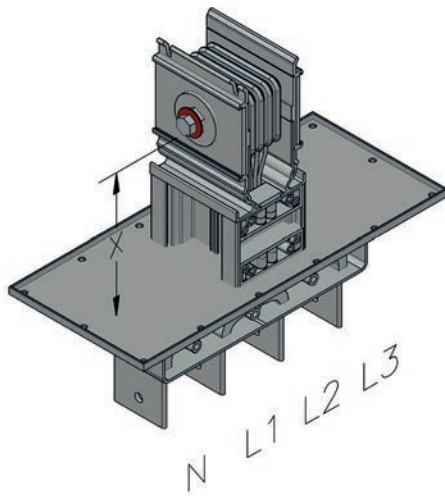
Vertical Panel Module Panel Input	PME
--------------------------------------	-----

SAMPLE ORDER

1000 A Aluminum,  
Panel Module IP 55  
4 Conductors

**HP-KA105T2FPME**

VERTICAL PANEL MODULE			
Used to connect flat lengths to the panel.			
(AL)		(CU)	
AMR.	X mm	AMR.	X mm
400A	220	550A	220
500A	220	650A	220
630A	220	800A	220
800A	220	1000A	220
1000A	220	1250A	220
1250A	220	1350A	220
1350A	220	1600A	220
1600A	220	2000A	220
2000A	220	2250A	220
2500A	220	2500A	220
2500A	220	2000A	220
3000A	220	2500A	220
3200A	220	3300A	220
4000A	220	3600A	220
5000A	220	4000A	220
6300A	220	4250A	220
		5000A	220
		6300A	220

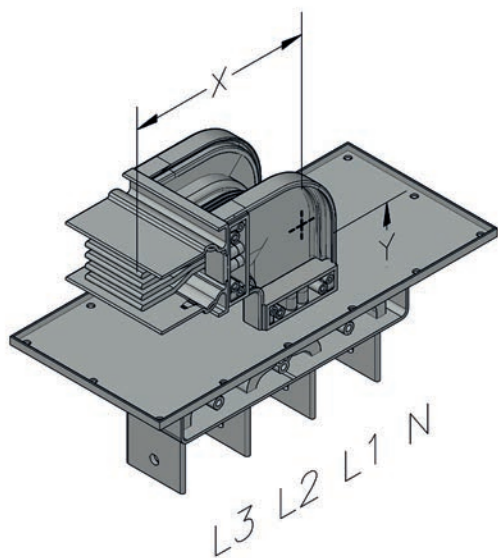


Vertical Panel Module Panel Output	PMD
---------------------------------------	-----

SAMPLE ORDER

1250 A Aluminum,  
Panel Module IP 55  
4 Conductors

**HP-KA125T2FPMD**



Vertical Panel Module Up Panel Input	PM1
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SAMPLE ORDER

800 A Copper  
Panel Module IP 55  
4 Conductors

**HP-KC075T2FPM1**

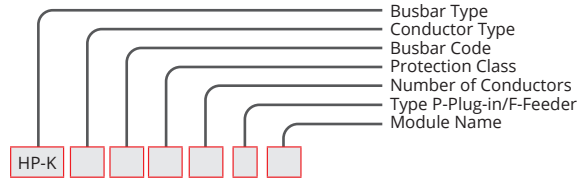
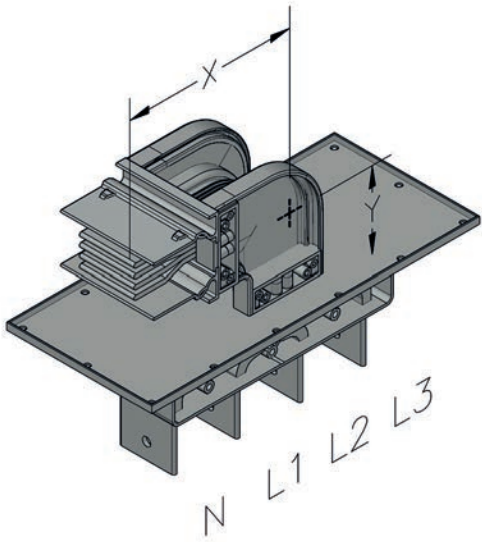
UP PANEL MODULE					
Used to connect flat lengths to the panel.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	230	230	550A	230	230
500A	230	230	650A	230	230
630A	230	230	800A	230	230
800A	230	230	1000A	230	230
1000A	230	230	1250A	230	230
1250A	230	230	1350A	230	230
1350A	230	230	1600A	230	230
1600A	230	230	2000A	230	230
2000A	230	230	2250A	230	230
2500A	230	230	2500A	230	230
2500A	230	230	2000A	230	230
3000A	230	230	2500A	230	230
3200A	230	230	3300A	230	230
4000A	230	230	3600A	230	230
5000A	230	230	4000A	230	230
6300A	230	230	4250A	230	230
			5000A	230	230
			6300A	230	230

HP-K

Please call our company for special size modules.

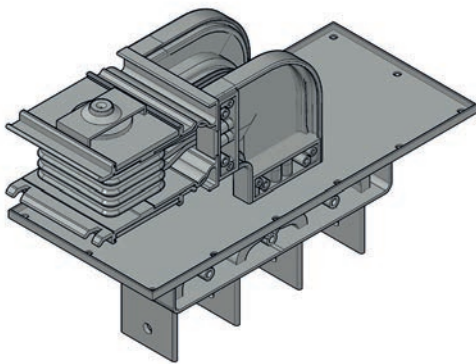


# Panel Modules



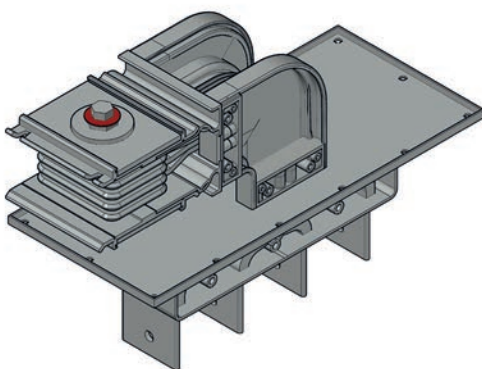
Vertical Panel Module Down Panel	PM2
--	-----

**SAMPLE ORDER**  
3200 A Aluminum,  
Panel Module IP 55  
4 Conductors  
**HP-KA325T2FPM2**



Vertical Panel Module Up Panel	PM3
--------------------------------------	-----

**SAMPLE ORDER**  
4000 A Aluminum,  
Panel Module IP 55  
4 Conductors  
**HP-KA405T2FPM3**



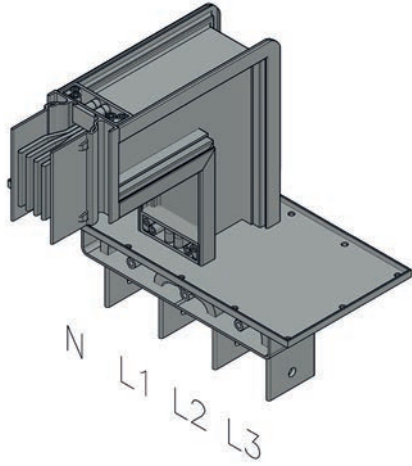
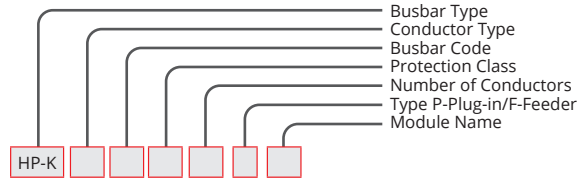
Vertical Panel Module Down Panel	PM4
--	-----

**SAMPLE ORDER**  
1000 A Aluminum,  
Panel Module IP 55  
4 Conductors  
**HP-KA105T2FPM4**

DOWN PANEL MODULE					
Used to connect flat lengths to the panel.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	230	230	550A	230	230
500A	230	230	650A	230	230
630A	230	230	800A	230	230
800A	230	230	1000A	230	230
1000A	230	230	1250A	230	230
1250A	230	230	1350A	230	230
1350A	230	230	1600A	230	230
1600A	230	230	2000A	230	230
2000A	230	230	2250A	230	230
2500A	230	230	2500A	230	230
2500A	230	230	2000A	230	230
3000A	230	230	2500A	230	230
3200A	230	230	3300A	230	230
4000A	230	230	3600A	230	230
5000A	230	230	4000A	230	230
6300A	230	230	4250A	230	230
			5000A	230	230
			6300A	230	230

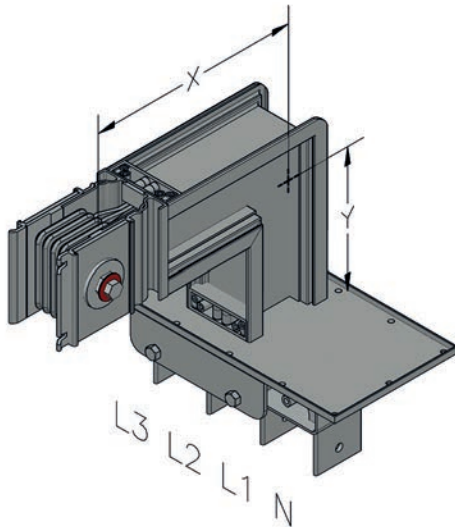
Please call our company for special size modules.

Panel Modules



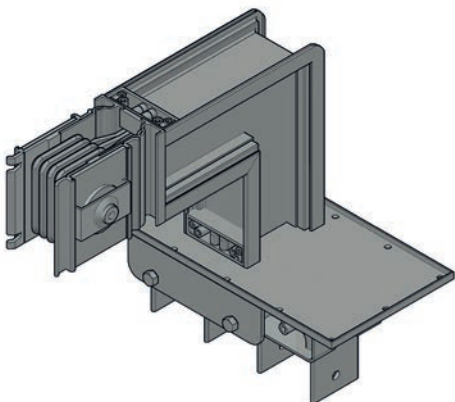
Horizontal Panel Module Right Panel	PM5
---	-----

**SAMPLE ORDER**  
2500 A Copper  
Panel Module IP 55  
4 Conductors  
**HP-KA275T2FPM5**



Horizontal Panel Module Left Panel	PM6
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**SAMPLE ORDER**  
1600 A Copper  
Panel Module IP 55  
4 Conductors  
**HP-KC175T2FPM6**



Horizontal Panel Module Right Panel	PM7
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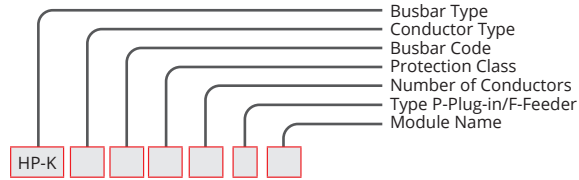
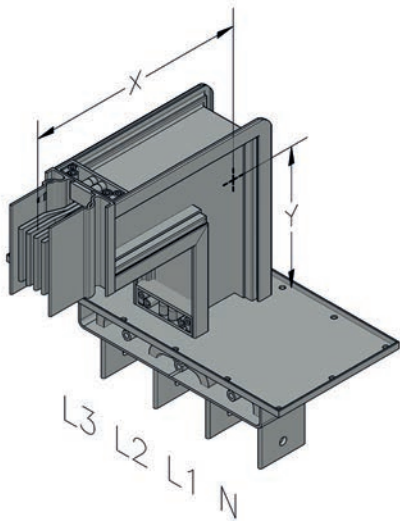
**SAMPLE ORDER**  
800 A Copper  
Panel Module IP 55  
4 Conductors  
**HP-KC075T2FPM7**

HORIZONTAL PANEL MODULE (RIGHT/LEFT)					
Used to connect flat lengths to the Panel.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	250	250	550A	250	250
500A	250	250	650A	250	250
630A	250	250	800A	250	250
800A	257	257	1000A	257	257
1000A	270	270	1250A	265	265
1250A	285	285	1350A	270	270
1350A	292	292	1600A	277	277
1600A	310	310	2000A	292	292
2000A	330	330	2250A	310	310
2500A	355	355	2500A	330	330
2500A	363	363	2000A	308	308
3000A	393	393	2500A	323	323
3200A	413	413	3300A	363	363
4000A	453	453	3600A	378	378
5000A	503	503	4000A	393	393
6300A	578	578	4250A	413	413
			5000A	453	453
			6300A	516	516

HP-K

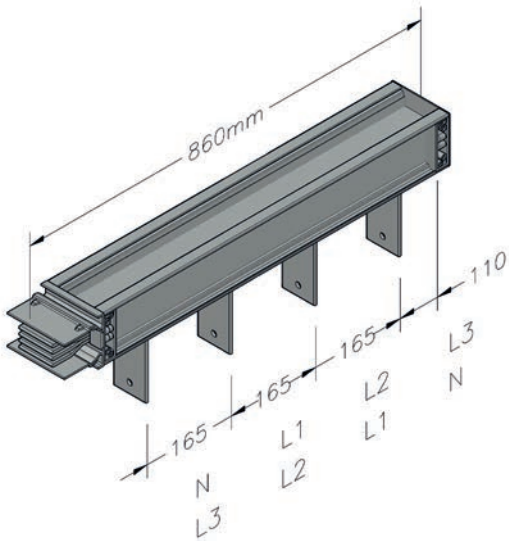
Please call our company for special size modules.

# Panel Modules



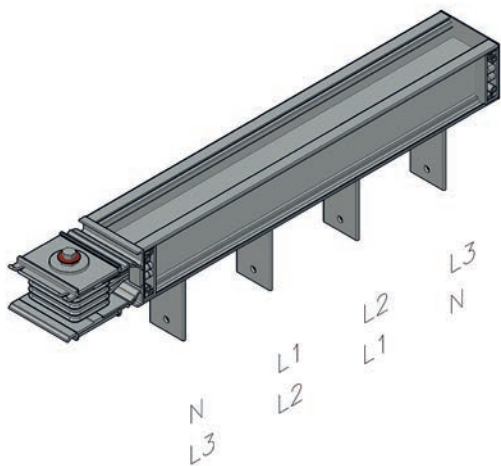
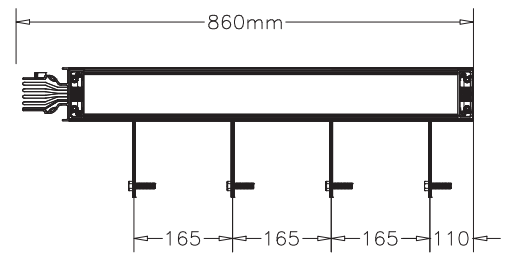
Horizontal Panel Module Left Panel	PM8
--	-----

**SAMPLE ORDER**  
2000 A Aluminum  
Panel Module IP 55  
4 Conductors  
**HP-KA205T2FPM8**



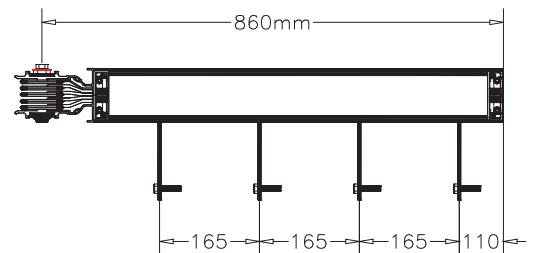
Horizontal Panel Module	YP1
----------------------------	-----

**SAMPLE ORDER**  
3300 A Copper  
Panel Module IP 55  
4 Conductors  
**HP-KC335T2FYP1**



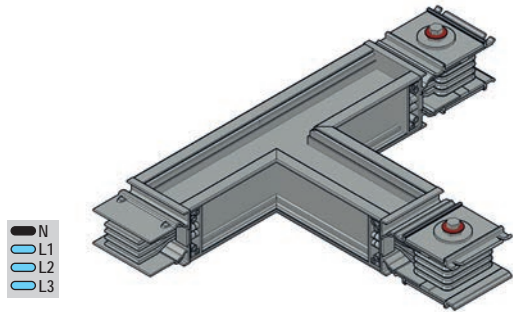
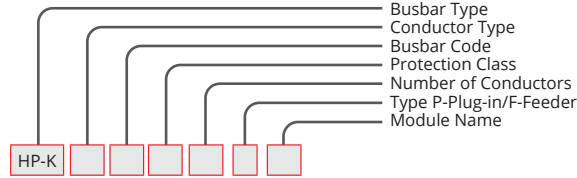
Horizontal Panel Module	YP2
----------------------------	-----

**SAMPLE ORDER**  
4000 A Copper  
Panel Module IP 55  
4 Conductors  
**HP-KC415T2FYP2**



Please call our company for special size modules.

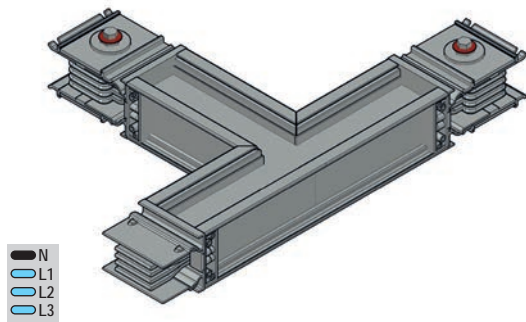
TEE Units



Right (T) Module	RT
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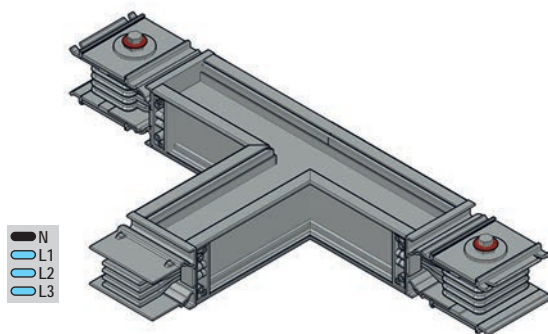
**SAMPLE ORDER**  
 1350 A Copper  
 Te Module IP 55  
 4 Conductors  
**HP-KC155T2FRT**

HORIZONTAL (TE) RIGHT/LEFT							
Used to take the horizontal right and left line (TE) of the busbar lengths.							
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	250	250	250	550A	250	250	250
500A	250	250	250	650A	250	250	250
630A	250	250	250	800A	250	250	250
800A	257	257	257	1000A	257	257	257
1000A	270	270	270	1250A	265	265	265
1250A	285	285	285	1350A	270	270	270
1350A	292	292	292	1600A	277	277	277
1600A	310	310	310	2000A	292	292	292
2000A	330	330	330	2250A	310	310	310
2500A	355	355	355	2500A	330	330	330
2500A	363	363	363	2000A	308	308	308
3000A	393	393	393	2500A	323	323	323
3200A	413	413	413	3300A	363	363	363
4000A	453	453	453	3600A	378	378	378
5000A	503	503	503	4000A	393	393	393
6300A	578	578	578	4250A	413	413	413
				5000A	453	453	453
				6300A	516	516	516



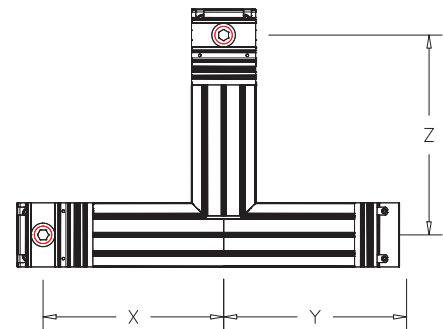
Left (T) Module	LT
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**SAMPLE ORDER**  
 1000 A Aluminum  
 Te Module IP 55  
 4 Conductors  
**HP-KA105T2FLT**



Center (T) Module	OT
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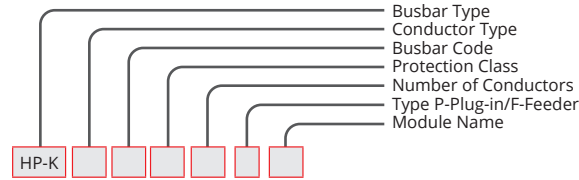
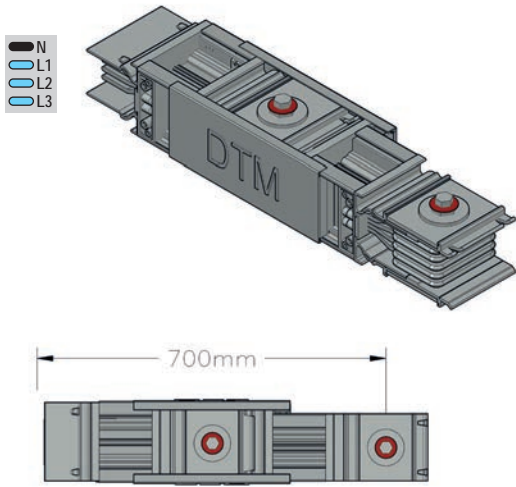
**SAMPLE ORDER**  
 1250 A Aluminum  
 Te Module IP 55  
 4 Conductors  
**HP-KA125T2FOT**



HP-K

Please call our company for special size modules.

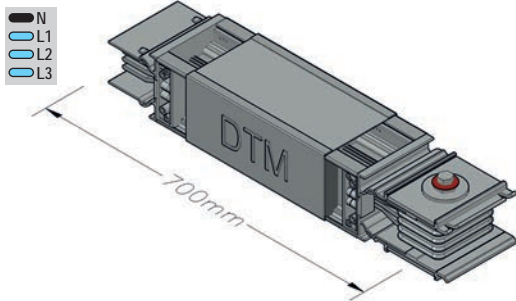
# Fitting Units



Reduction Module 700 mm	RD
----------------------------	----

**SAMPLE ORDER**  
800 A Aluminum,  
Reducer IP 55  
4 Conductors  
**HP-KA085T2FRD**

HP-K AL CONDUCTOR																
CRNT	Reduced Current Busbar Code															
	04	05	06	08	10	12	14	16	20	25	26	30	32	40		
500	✓	-	-	-	-	-	-	-	-	-	-	-	-	-		
630	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-		
800	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-		
1000	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-		
1250	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-		
1350	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-		
1600	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-		
2000	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-		
2500	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-		
2500	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-		
3000	-	-	-	-	-	-	-	-	✓	✓	✓	-	-	-		
3200	-	-	-	-	-	-	-	-	✓	✓	✓	-	-	-		
4000	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-		
5000	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓		
6300	-	-	-	-	-	-	-	-	-	-	-	-	-	✓		

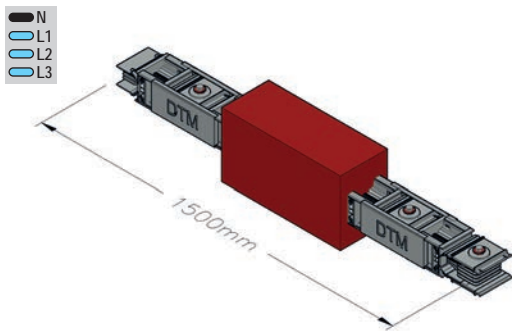


Expansion Module 700 mm	G
----------------------------	---

**SAMPLE ORDER**  
800 A Aluminum,  
Expansion IP 55 4 Conductors  
**HP-KA085T2FG**

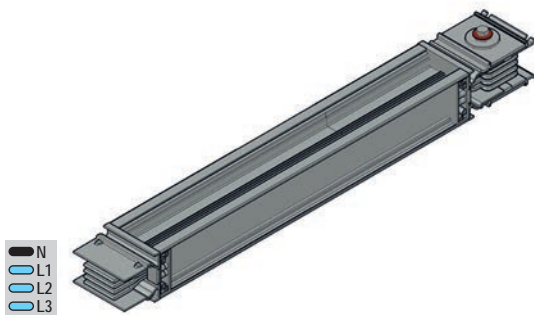
HP-K CU CONDUCTOR																	
CRNT	Reduced Current Busbar Code																
	05	06	07	09	13	15	17	21	23	24	22	27	33	36	41	42	51
650	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1250	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-
1350	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
1600	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-
2250	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-
2500	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-
2500	-	-	-	-	-	-	-	✓	✓	✓	-	-	-	-	-	-	-
3300	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-
3600	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	-	-	-	-
4000	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-	-
4250	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	-
5000	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-
6300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓

**Horizontal Expansion Info:**  
Used every 40 meters in long horizontal lines.



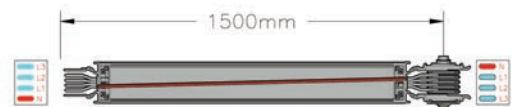
Horizontal Expansion Module 1500 mm	YD
--	----

**SAMPLE ORDER**  
1600 A Aluminum,  
Expansion IP 55 4 Conductors  
**HP-KA165T2FYD**



Phase Transposition Module 1500 mm	CM
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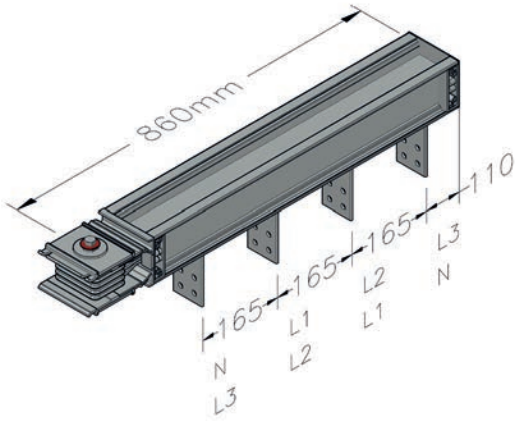
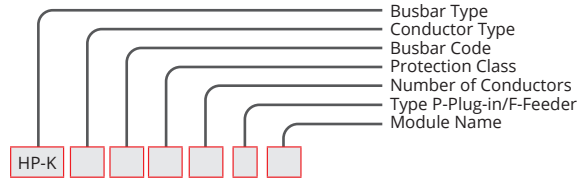
**SAMPLE ORDER**  
1000 A Aluminum,  
Cross IP 55 4 Conductors  
**HP-KA105T2FCM**



Please call our company for special size modules.



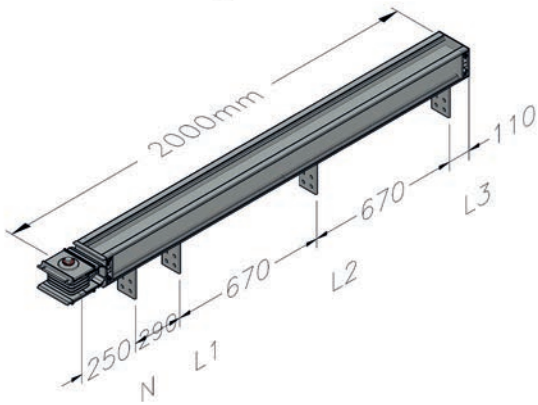
Transformer Modules



Horizontal Transformer Module	TMH
-------------------------------	-----

SAMPLE ORDER

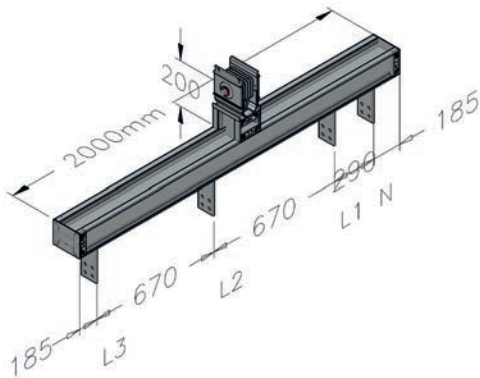
4000 A Aluminum,  
Transformer Module IP 55  
4 Conductors  
**HP-KA405T2FTMH**



Horizontal Transformer Module	TMF
-------------------------------	-----

SAMPLE ORDER

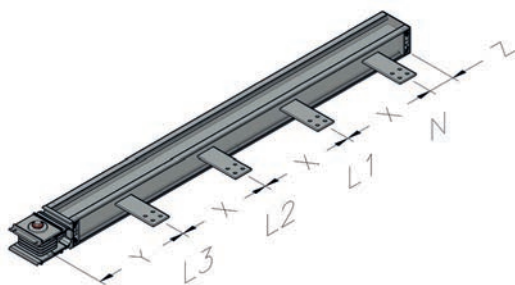
2000 A Aluminum,  
Transformer Module IP 55  
4 Conductors  
**HP-KA205T2FTMF**



Center Transformer Module	TMO
---------------------------	-----

SAMPLE ORDER

1600 A Aluminum,  
Transformer Module IP 55  
4 Conductors  
**HP-KA165T2FTMO**



Vertical Transformer Module	TMK
-----------------------------	-----

SAMPLE ORDER

1000 A Aluminum,  
Transformer Module IP 55  
4 Conductors  
**HP-KA105T2FTMK**

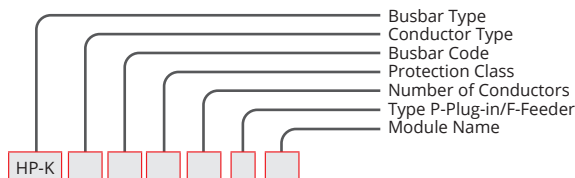
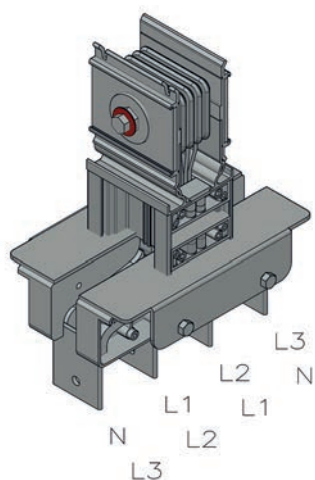
HP-K

VERTICAL TRANSFORMER MODULE							
(AL)				(CU)			
AMR.	Y mm	X mm	Z mm	AMR.	Y mm	X mm	Z mm
400A	264	86	124	550A	264	86	124
500A	266	91	126	650A	266	91	126
630A	271	101	131	800A	271	101	131
800A	279	116	139	1000A	279	116	139
1000A	291	141	151	1250A	286	131	146
1250A	306	171	166	1350A	291	141	151
1350A	314	186	174	1600A	299	156	159
1600A	331	221	191	2000A	314	186	174
2000A	351	261	211	2250A	331	221	191
2500A	376	311	236	2500A	351	261	211
2500A	306	171	166	2000A	279	116	139
3000A	321	201	181	2500A	286	131	146
3200A	331	221	191	3300A	306	171	166
4000A	351	261	211	3600A	314	186	174
5000A	376	311	236	4000A	321	201	181
				5000A	351	261	211

Please call our company for special size modules.



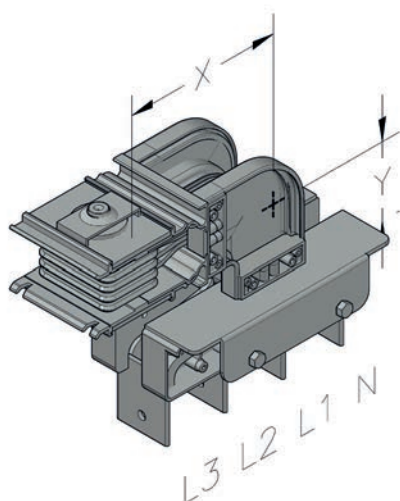
# Transformer Modules



Vertical Transformer Module	TR1
-----------------------------	-----

**SAMPLE ORDER**  
 1000 A Aluminum,  
 Transformer Module IP 55  
 4 Conductors  
**HP-KA105T2FTR1**

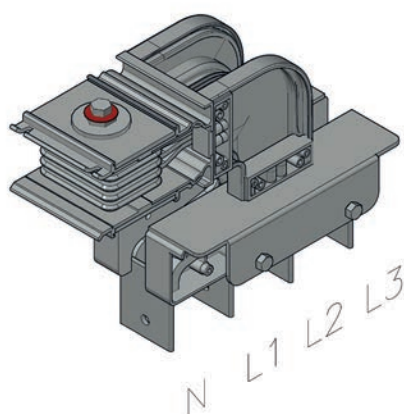
VERTICAL TRANSFORMER MODULE			
Used to connect flat lengths to the panel.			
(AL)		(CU)	
AMR.	X mm	AMR.	X mm
400A	220	550A	220
500A	220	650A	220
630A	220	800A	220
800A	220	1000A	220
1000A	220	1250A	220
1250A	220	1350A	220
1350A	220	1600A	220
1600A	220	2000A	220
2000A	220	2250A	220
2500A	220	2500A	220
2500A	220	2000A	220
3000A	220	2500A	220
3200A	220	3300A	220
4000A	220	3600A	220
5000A	220	4000A	220
6300A	220	4250A	220
		5000A	220
		6300A	220



Up Transformer Module	TRU
-----------------------	-----

**SAMPLE ORDER**  
 2500 A Aluminum,  
 Transformer Module IP 55  
 4 Conductors  
**HP-KA265T2FTRU**

UP/DOWN TRANSFORMER MODULE					
Used to connect flat lengths to the transformer.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	230	230	550A	230	230
500A	230	230	650A	230	230
630A	230	230	800A	230	230
800A	230	230	1000A	230	230
1000A	230	230	1250A	230	230
1250A	230	230	1350A	230	230
1350A	230	230	1600A	230	230
1600A	230	230	2000A	230	230
2000A	230	230	2250A	230	230
2500A	230	230	2500A	230	230
2500A	230	230	2000A	230	230
3000A	230	230	2500A	230	230
3200A	230	230	3300A	230	230
4000A	230	230	3600A	230	230
5000A	230	230	4000A	230	230
6300A	230	230	4250A	230	230
			5000A	230	230
			6300A	230	230

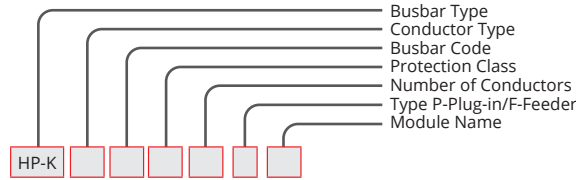
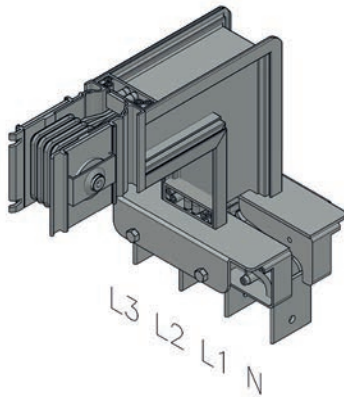


Down Transformer Module	TRD
-------------------------	-----

**SAMPLE ORDER**  
 2000 A Aluminum,  
 Transformer Module IP 55  
 4 Conductors  
**HP-KA205T2FTRD**

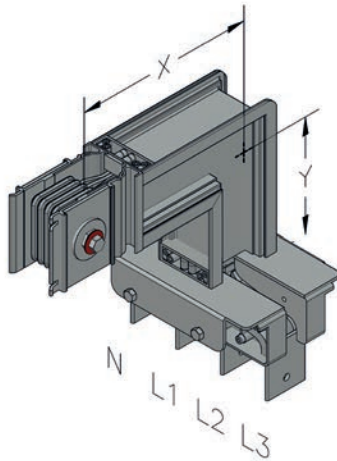
Please call our company for special size modules.

Transformer Modules



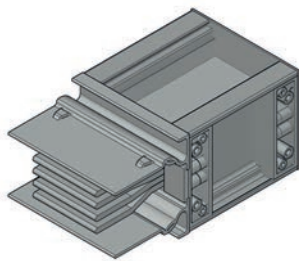
Right Transformer Module	TRR
--------------------------	-----

**SAMPLE ORDER**  
 3300 A Copper  
 Transformer Module IP 55  
 4 Conductors  
**HP-KC335T2FTRR**



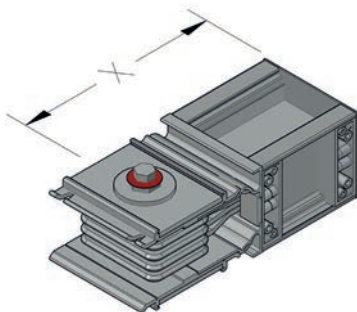
Left Transformer Module	TRL
-------------------------	-----

**SAMPLE ORDER**  
 1350 A Aluminum,  
 Transformer Module IP 55  
 4 Conductors  
**HP-KA145T2FTRL**



Termination	S1
-------------	----

**SAMPLE ORDER**  
 800 A Aluminum,  
 Termination Module 55 4 Conductors  
**HP-KA085T2FS1**



Termination	S2
-------------	----

**SAMPLE ORDER**  
 1000 A Aluminum,  
 Termination Module IP 55  
 4 Conductors  
**HP-KA105T2FS2**

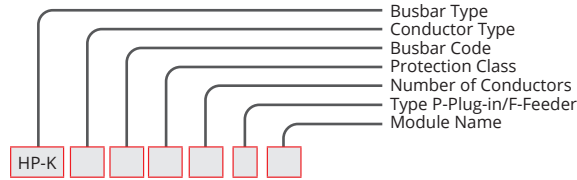
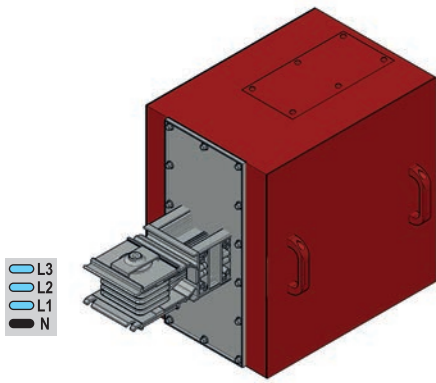
RIGHT/LEFT TRANSFORMER MODULE					
Used to connect flat lengths to the transformer.					
(AL)			(CU)		
AMR.	X mm	Y mm	AMR.	X mm	Y mm
400A	250	250	550A	250	250
500A	250	250	650A	250	250
630A	250	250	800A	250	250
800A	257	257	1000A	257	257
1000A	270	270	1250A	265	265
1250A	285	285	1350A	270	270
1350A	292	292	1600A	277	277
1600A	310	310	2000A	292	292
2000A	330	330	2250A	310	310
2500A	355	355	2500A	330	330
2500A	363	363	2000A	308	308
3000A	393	393	2500A	323	323
3200A	413	413	3300A	363	363
4000A	453	453	3600A	378	378
5000A	503	503	4000A	393	393
6300A	578	578	4250A	413	413
			5000A	453	453
			6300A	516	516

TERMINATION			
Used to close the line endings.			
(AL)		(CU)	
AMR.	X mm	AMR.	X mm
400A	215	550A	215
500A	215	650A	215
630A	215	800A	215
800A	215	1000A	215
1000A	215	1250A	215
1250A	215	1350A	215
1350A	215	1600A	215
1600A	215	2000A	215
2000A	215	2250A	215
2500A	215	2500A	215
2500A	215	2000A	215
3000A	215	2500A	215
3200A	215	3300A	215
4000A	215	3600A	215
5000A	215	4000A	215
6300A	215	4250A	215
		5000A	215
		6300A	215

HP-K

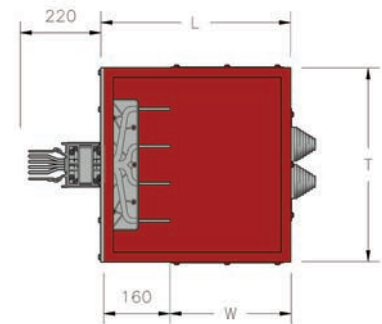
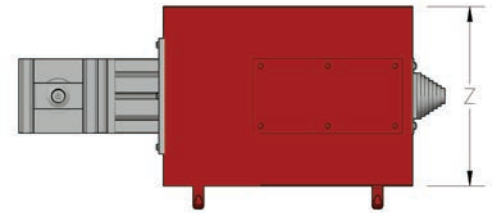
Please call our company for special size modules.

# Feed Boxes

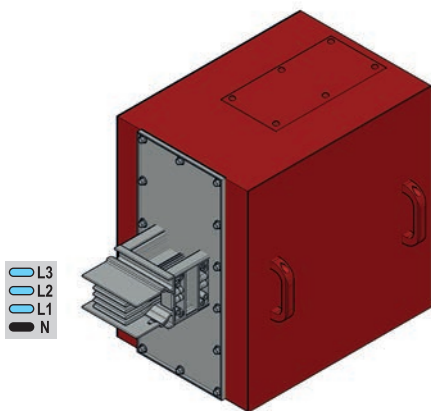
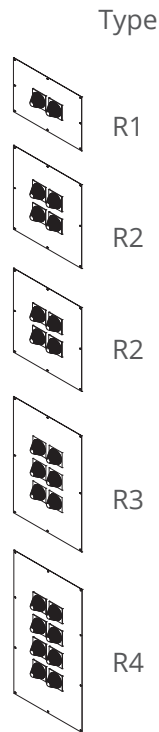


Start Feed Box    BM1

**SAMPLE ORDER**  
1350 A Aluminum,  
Feeder IP 55 4 Conductors  
**HP-KA145T2R1BM1**



FITTING PLATES			
(AL)		(CU)	
AMR.	Type	AMR.	Type
400A	R1	550A	R1
500A	R1	650A	R1
630A	R1	800A	R1
800A	R1	1000A	R1
1000A	R1	1250A	R1
1250A	R1	1350A	R1
1350A	R2	1600A	R2
1600A	R2	2000A	R2
2000A	R2	2250A	R2
2500A	R3	2500A	R2
2500A	R3	2000A	R2
3000A	R3	2500A	R3
3200A	R3	3300A	R3
4000A	R3	3600A	R3
5000A	R3	4000A	R3
6300A	R4	4250A	R3
		5000A	R3
		6300A	R4



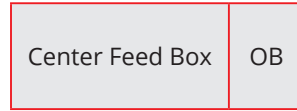
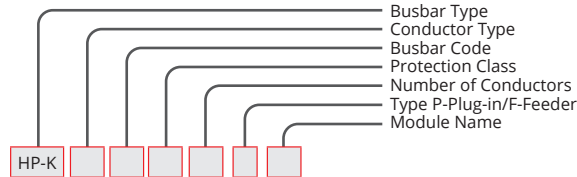
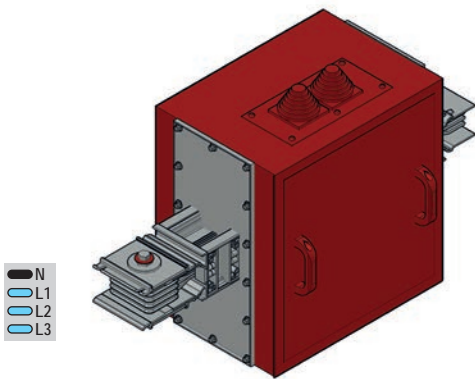
End Feed Box    BM2

**SAMPLE ORDER**  
800 A Aluminum,  
Feeder IP 55 4 Conductors  
**HP-KA085T2R1BM2**

UP/DOWN FEED MODULE									
(AL)					(CU)				
AMR.	L mm	T mm	Z mm	W mm	AMR.	L mm	T mm	Z mm	W mm
400A	520	540	360	360	550A	520	540	360	360
500A	520	540	360	360	650A	520	540	360	360
630A	520	540	360	360	800A	520	540	360	360
800A	520	540	360	360	1000A	520	540	360	360
1000A	520	540	360	360	1250A	520	540	360	360
1250A	520	540	360	360	1350A	520	540	360	360
1350A	520	540	560	360	1600A	520	540	360	360
1600A	520	540	560	360	2000A	520	540	560	360
2000A	520	540	560	360	2250A	520	540	560	360
2500A	520	540	560	360	2500A	520	540	560	360
2500A	520	540	560	360	2000A	520	540	560	360
3000A	520	540	560	360	2500A	520	540	560	360
3200A	720	540	780	560	3300A	520	540	560	360
4000A	720	540	780	560	3600A	720	540	560	360
5000A	720	540	780	560	4000A	720	540	780	560
6300A	720	540	1110	560	4250A	720	540	780	560
					5000A	720	540	780	560
					6300A	720	540	960	560

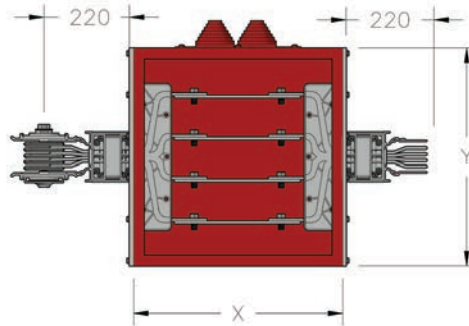
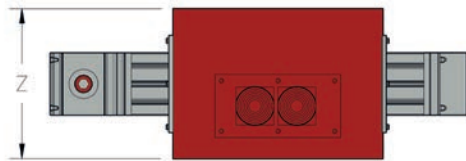
Please call our company for special sizes.

Center Feed Units

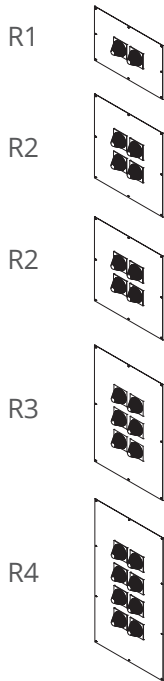


SAMPLE ORDER

800 A Aluminum,  
Feeder IP 55 4 Conductors  
**HP-KA085T2R1OB**



Type



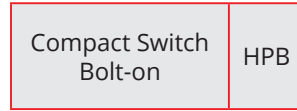
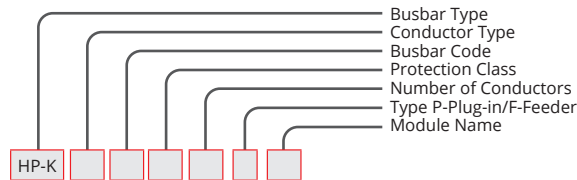
FITTING PLATES				
(AL)		(CU)		
AMR.	Type	AMR.	Type	
400A	R1	550A	R1	
500A	R1	650A	R1	
630A	R1	800A	R1	
800A	R1	1000A	R1	
1000A	R1	1250A	R1	
1250A	R1	1350A	R1	
1350A	R2	1600A	R1	
1600A	R2	2000A	R2	
2000A	R2	2250A	R2	
2500A	R3	2500A	R2	
2500A	R3	2000A	R2	
3000A	R3	2500A	R2	
3200A	R3	3300A	R3	
4000A	R3	3600A	R3	
5000A	R3	4000A	R3	
6300A	R4	4250A	R3	
		5000A	R3	
		6300A	R4	

CENTER FEEDER							
(AL)				(CU)			
AMR.	X mm	Y mm	Z mm	AMR.	X mm	Y mm	Z mm
400A	520	540	360	550A	520	540	360
500A	520	540	360	650A	520	540	360
630A	520	540	360	800A	520	540	360
800A	520	540	360	1000A	520	540	360
1000A	520	540	360	1250A	520	540	360
1250A	520	540	360	1350A	520	540	360
1350A	520	540	560	1600A	520	540	360
1600A	520	540	560	2000A	520	540	560
2000A	520	540	560	2250A	520	540	560
2500A	520	540	560	2500A	520	540	560
2500A	520	540	560	2000A	520	540	560
3000A	520	540	560	2500A	520	540	560
3200A	720	540	780	3300A	520	540	560
4000A	720	540	780	3600A	720	540	560
5000A	720	540	780	4000A	720	540	780
6300A	720	540	1110	4250A	720	540	780
				5000A	720	540	780
				6300A	720	540	960

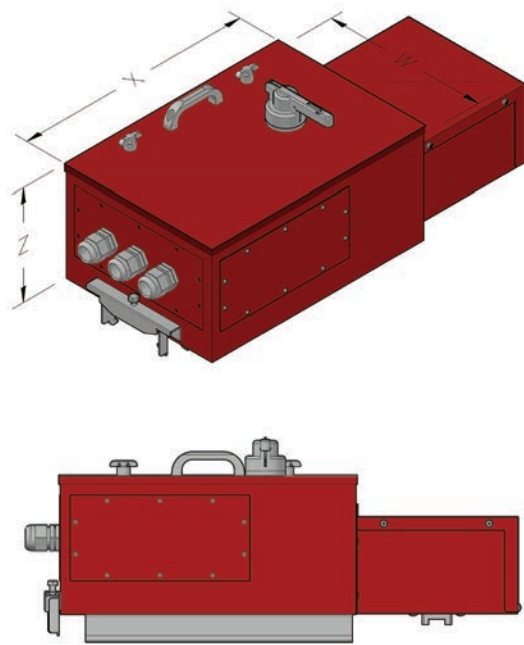
HP-K

Please call our company for special size modules.

# Tap-Off Box Compact Switch Bolt-On Type



**SAMPLE ORDER**  
250 A Output Box Empty  
IP 55 4 Conductors  
**HPB255T2R3B**

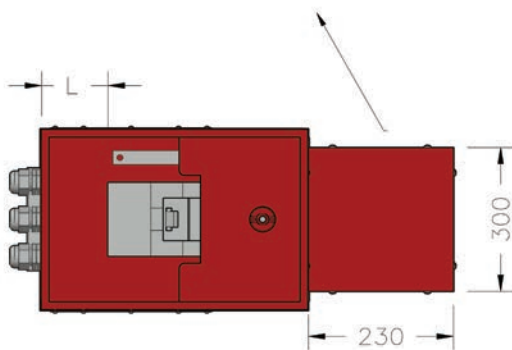


SWITCH TYPE CODE	
SWITCH	EMPTY
S	B

FITTING PLATES	
Type	CODE
-	R1
RG36X1	R2
RG29X2	R3
RG21X4	R4
RG29X8	R5
RG48X3	R6
RG36X4	R7

### Info:

In addition to the DTM Bolt-On Tap off box on the additional block, the box assembly should be done on site according to the technical diagram.

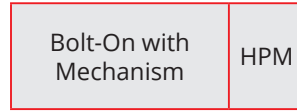
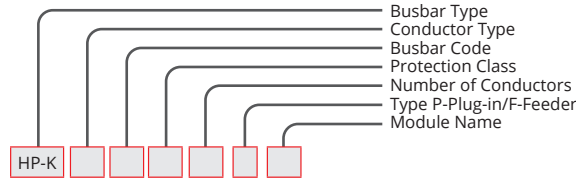


Amp.	Box Code	X mm	W mm	Z mm	L mm
160	HPB16	560	385	260	150
250	HPB25	560	385	260	150
400	HPB40	560	385	260	200
630	HPB63	560	385	260	200
800	HPB80	710	425	260	250
1000	HPB10	710	425	260	250

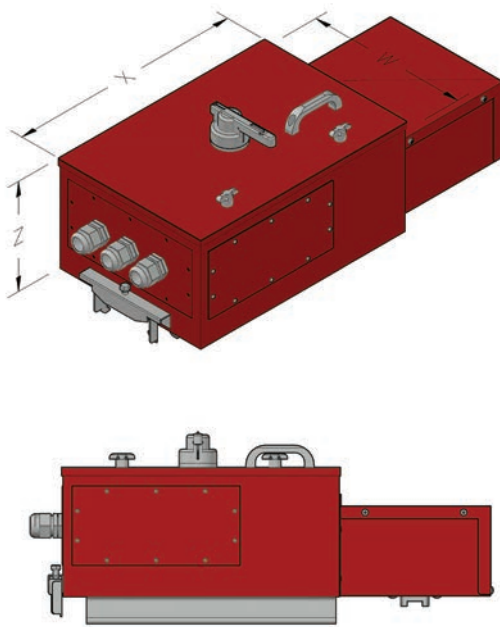
Please contact our company for non-standard boxes.



Tap-Off Box  
Bolt-On with DTM  
Mechanism



**SAMPLE ORDER**  
400 A Tap-Off Box Empty  
IP 55 4 Conductors  
**HPM405T2R4B**



**Info:**

In addition to the DTM Bolt-on Tap-Off box on the additional block, the box assembly must be done on site according to the technical diagram.

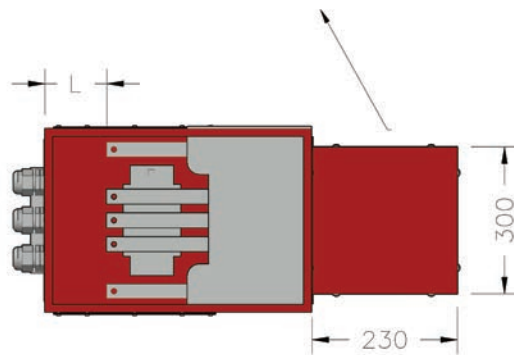


SWITCH TYPE CODE	
SWITCH	EMPTY
S	B

FITTING PLATES	
Type	CODE
-	R1
RG36X1	R2
RG29X2	R3
RG21X4	R4
RG29X8	R5
RG48X3	R6
RG36X4	R7

Amp.	Box Code	X mm	W mm	Z mm	L mm
160	HPMB16	560	385	260	150
250	HPMB25	560	385	260	150
400	HPMB40	560	385	260	200
630	HPMB63	560	385	260	200

HP-K



**Info:**

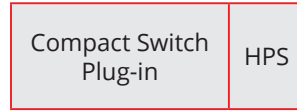
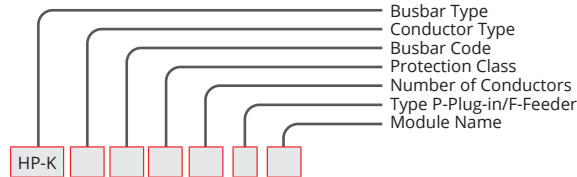
DTM Bolt-on tap off boxes cannot be mechanically attached to and removed from the busbar in the "ON" position. When the boxes are in the "OFF" position, the energy of the box is cut by a special mechanism, the same mechanism energizes the box in the "ON" position.

Boxes with standard mechanism are delivered empty. Before the boxes are attached to the busbar, a fused load breaker, fuse group or similar protection unit must be placed inside the boxes.

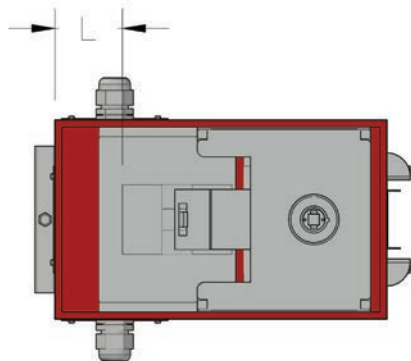
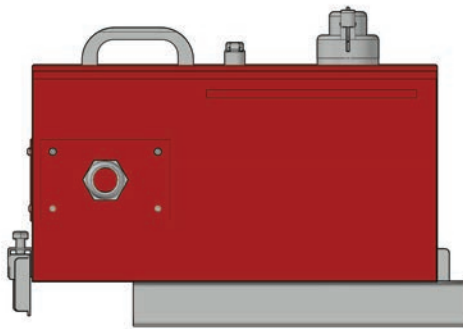
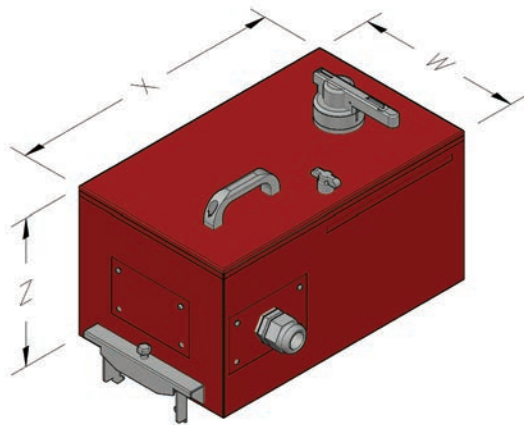
Please contact our company for non-standard boxes.



# Tap-Off Box Compact Switch Plug-In



**SAMPLE ORDER**  
630 A Tap-Off Box Switch  
IP 55 4 Conductors  
**HPS635T2R5S**



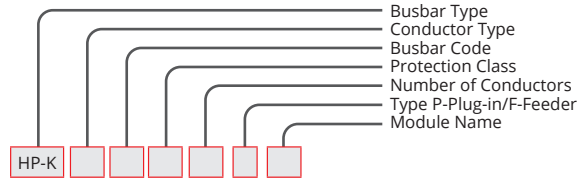
SWITCH TYPE CODE	
SWITCH	EMPTY
S	B

FITTING PLATES	
Type	CODE
-	R1
RG36X1	R2
RG29X2	R3
RG21X4	R4
RG29X1	R5
RG48X2	R6

Amp.	Box Code	X mm	W mm	Z mm	L mm
160	HPS16	530	300	220	155
250	HPS25	530	300	220	155
400	HPS40	710	300	220	260
630	HPS63	710	300	220	260

Please contact our company for non-standard boxes.

Tap-Off Box with DTM Mechanism Plug-In

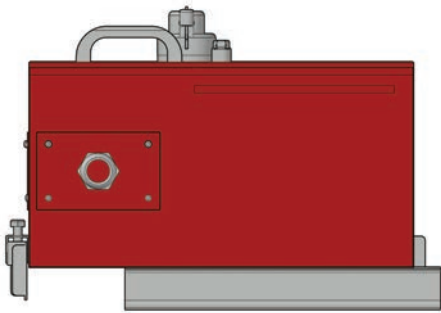
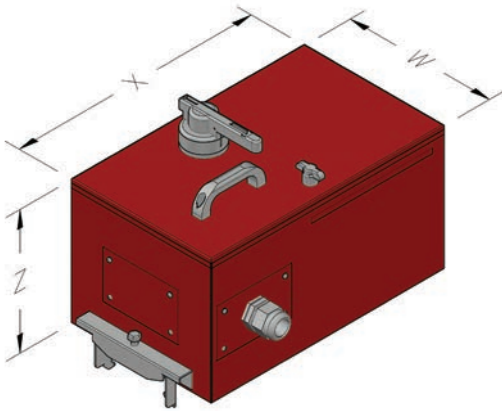


Plug-in with Mechanism	HPP
------------------------	-----

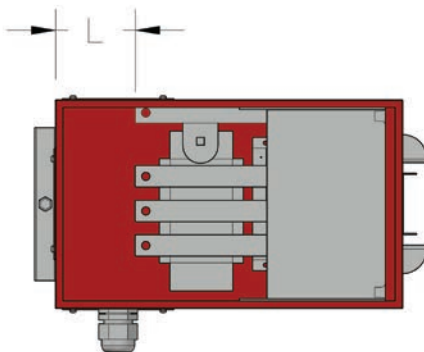
SAMPLE ORDER

160 A Tap off Box Empty  
IP 55 4 Conductor  
**HPP165T2R2B**

SWITCH TYPE CODE	
SWITCH	EMPTY
S	B



FITTING PLATES	
Type	CODE
-	R1
RG36X1	R2
RG29X2	R3
RG21X4	R4
RG29X1	R5
RG48X2	R6



Amp.	Box Code	X mm	W mm	Z mm	L mm
160	HPP16	530	300	220	155
250	HPP25	530	300	220	155
400	HPP40	710	300	220	260
500	HPP50	710	300	220	260

HP-K

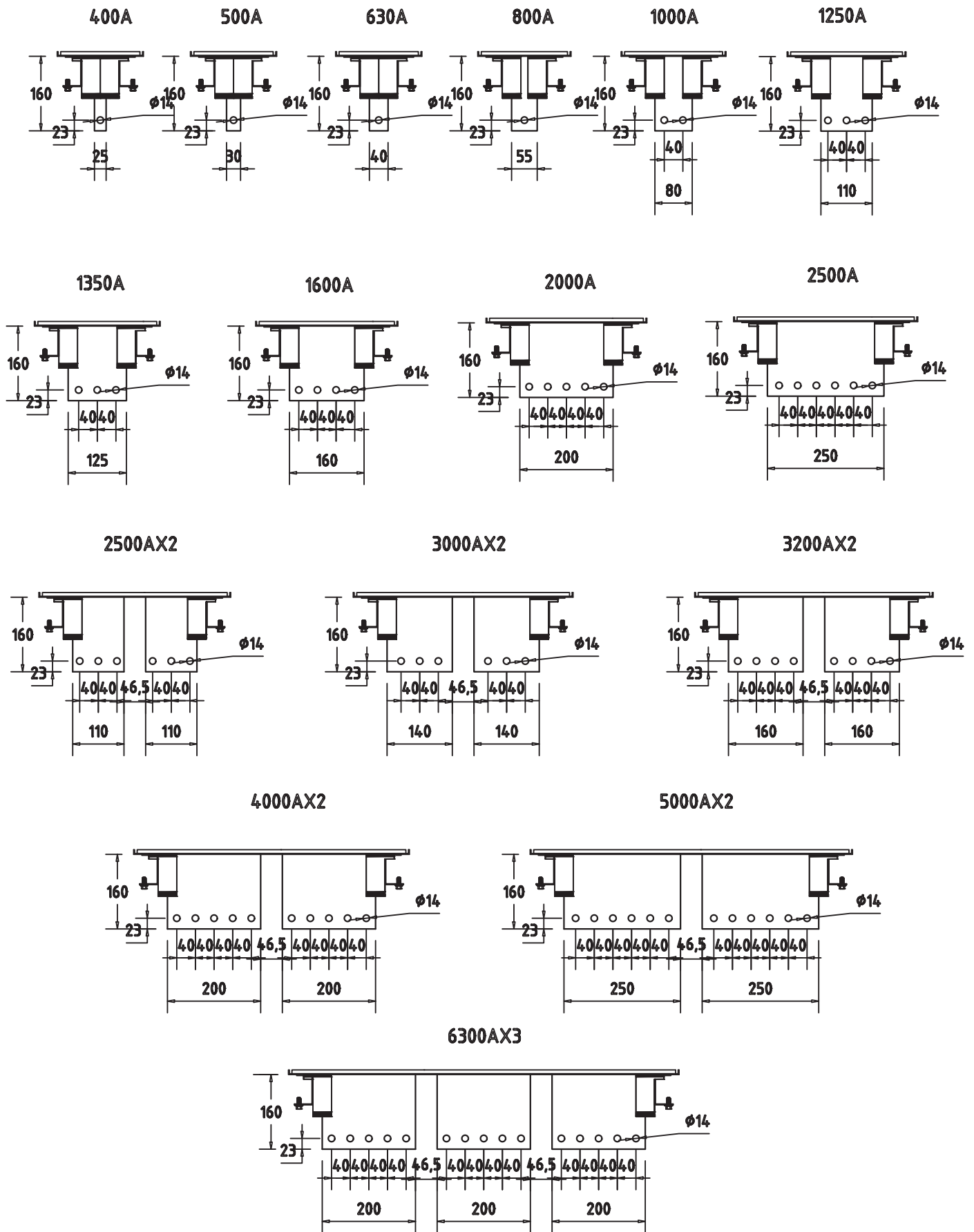
Info:

DTM Bolt-on tap off boxes cannot be mechanically attached to and removed from the busbar in the "ON" position. When the boxes are in the "OFF" position, the energy of the box is cut by a special mechanism, the same mechanism energizes the box in the "ON" position.

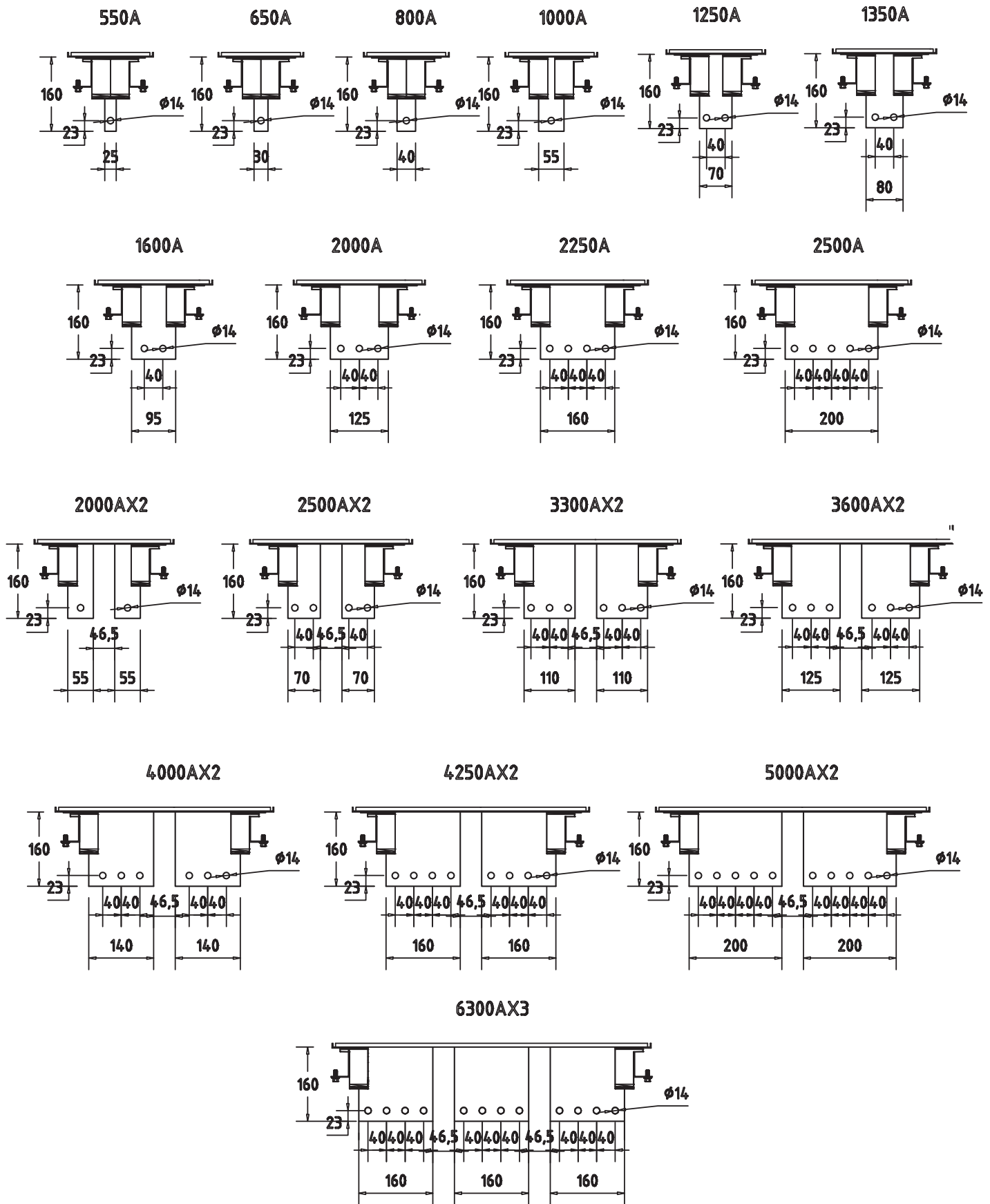
Boxes with standard mechanism are delivered empty. Before the boxes are attached to the busbar, a fused load breaker, fuse group or similar protection unit must be placed inside the boxes.

Please contact our company for non-standard boxes.

## Panel Module Dimensions / Aluminium

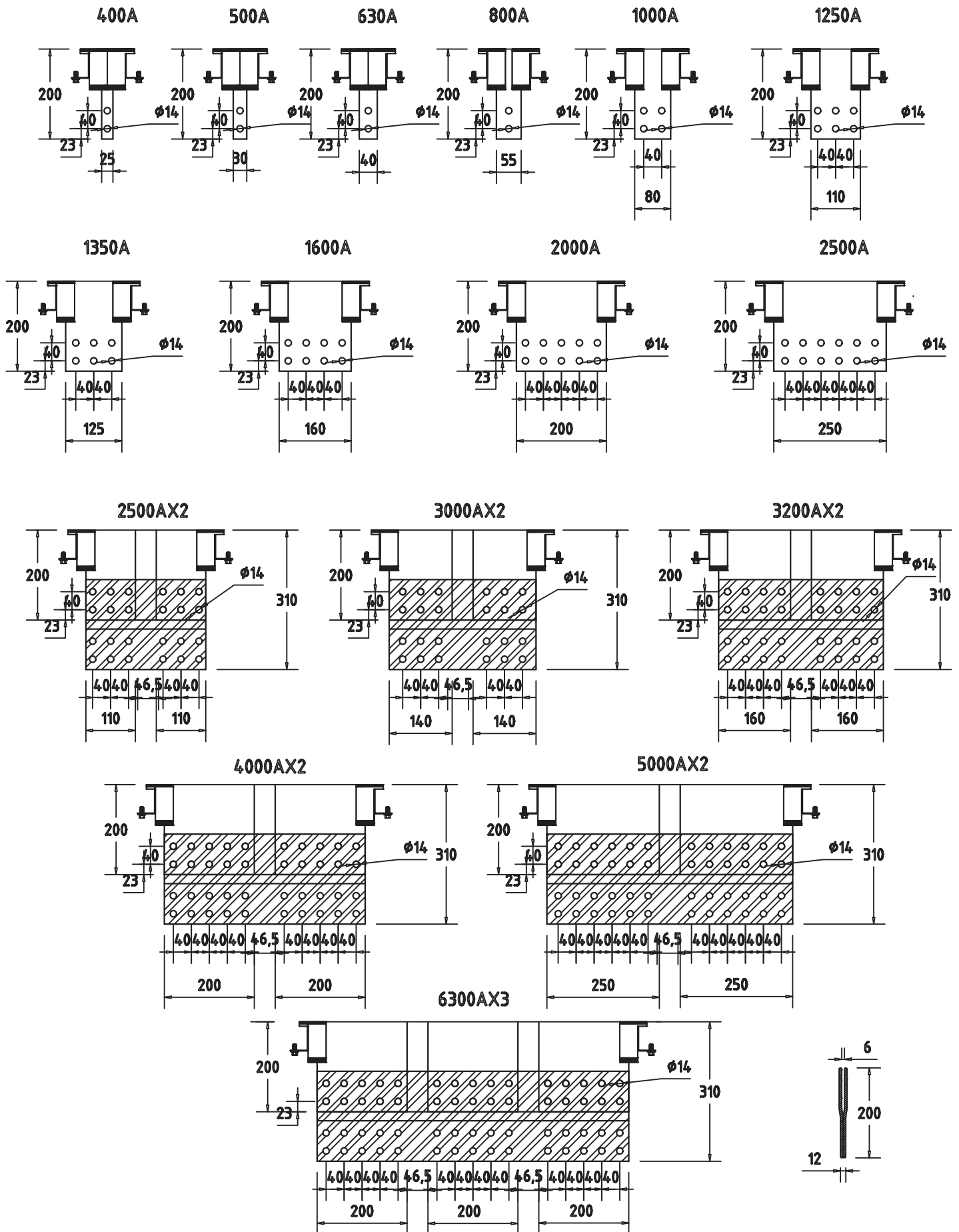


Panel Module Dimensions / Copper

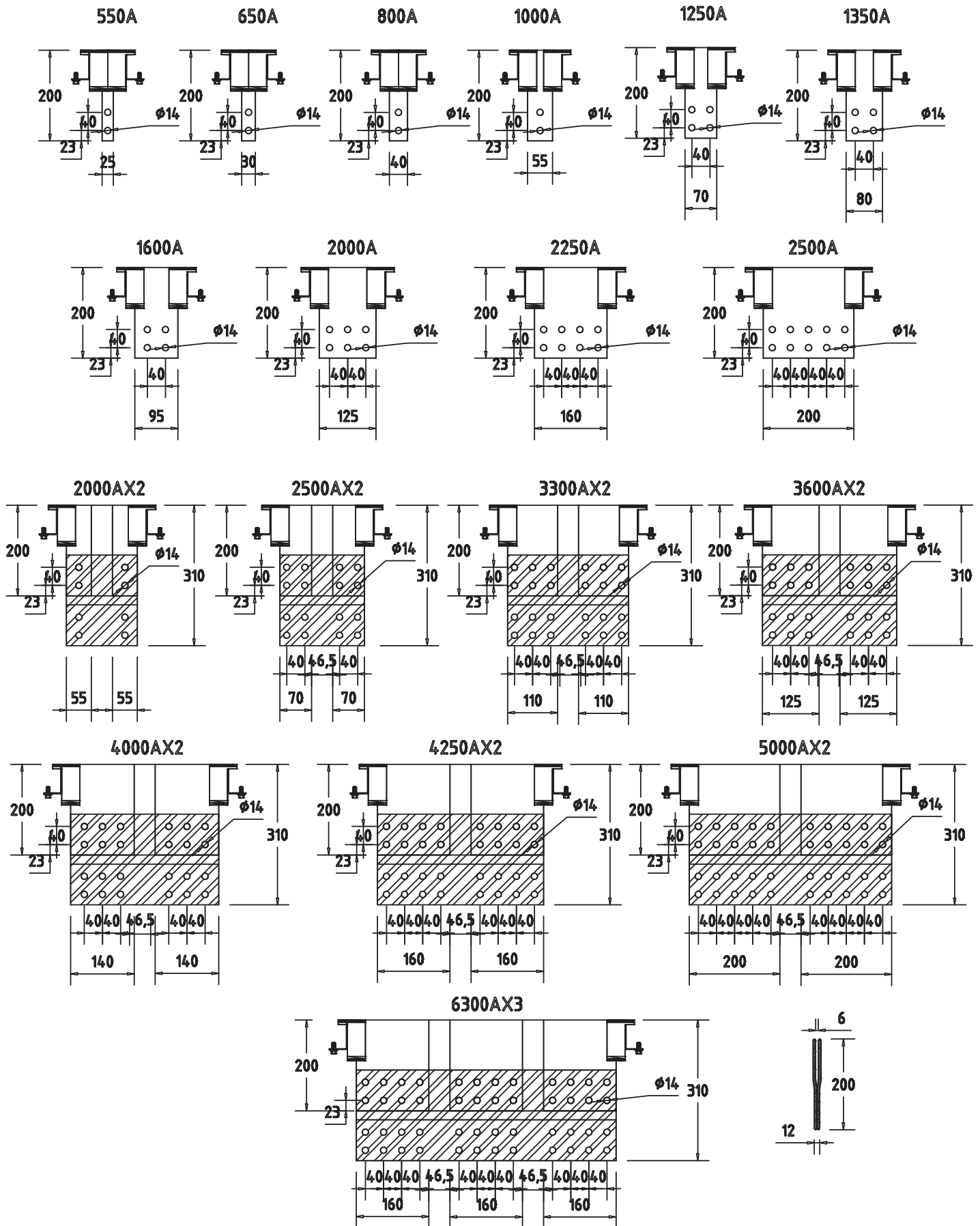


HP-K

# Transformer Module Dimensions / Aluminium



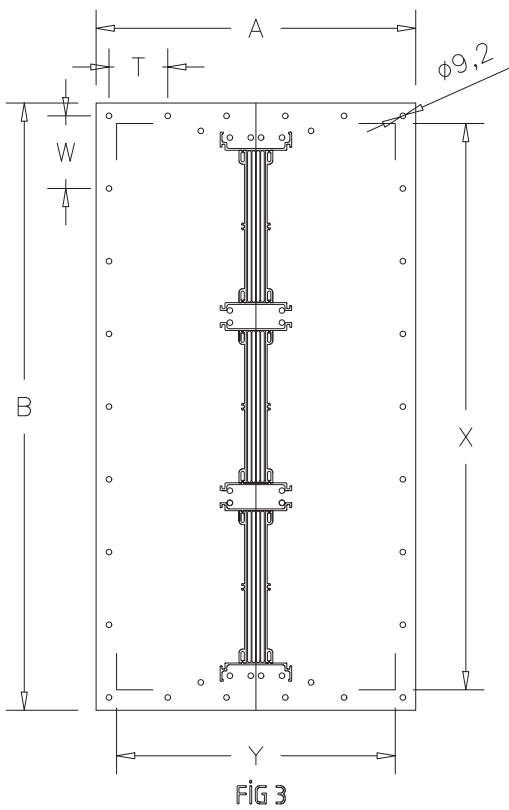
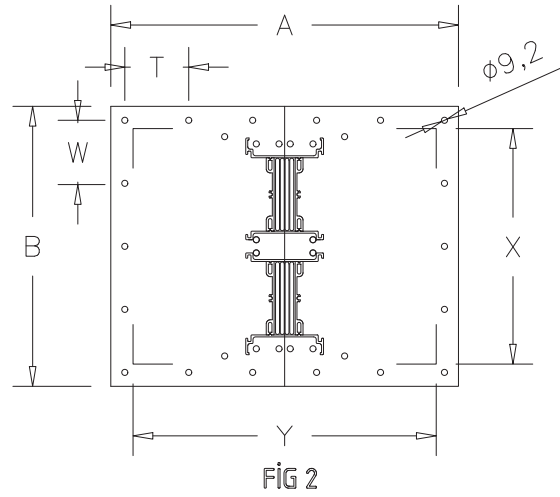
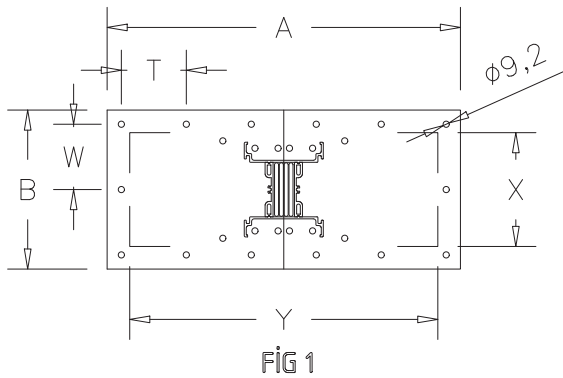
Transformer Module Dimensions / Copper



HP-K

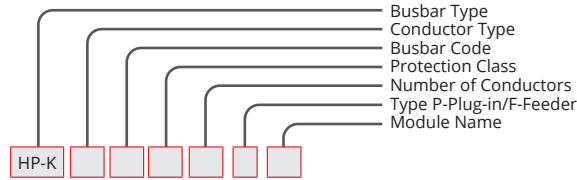


# Panel Flange Dimensions



CONNECTION TOP FLANGE DIMENSIONS (AL)									
AMR.	A (mm)	B (mm)	Y (mm)	X (mm)	T (mm)	R	W (mm)	$\phi 9 \text{ MM}$ R	FIG
400A	520	198	460	130	97	6	77.5	3	1
500A	520	198	460	130	97	6	77.5	3	1
630A	520	198	460	130	97	6	77.5	3	1
800A	520	212	460	145	97	6	85	3	1
1000A	520	237	460	170	97	6	97.5	3	1
1250A	520	267	460	200	97	6	112.5	3	1
1350A	520	282	460	215	97	6	120	3	1
1600A	520	317	460	250	97	6	91.65	4	1
2000A	520	357	460	290	97	6	78.75	5	1
2500A	520	407	460	340	97	6	91.25	5	1
2500A	520	424	460	357	97	6	95.6	5	2
3000A	520	485	460	418	97	6	88.5	6	2
3200A	520	524	460	457	97	6	96.5	6	2
4000A	520	604	460	537	97	6	112.5	6	2
5000A	520	704	460	637	97	6	132.5	6	2
6300A	520	852	460	785	97	6	101.25	9	3
CONNECTION TOP FLANGE DIMENSIONS (CU)									
AMR.	A (mm)	B (mm)	Y (mm)	X (mm)	T (mm)	R	W (mm)	$\phi 9 \text{ MM}$ R	FIG
550A	520	198	460	130	97	6	77.5	3	1
650A	520	198	460	130	97	6	77.5	3	1
800A	520	198	460	130	97	6	77.5	3	1
1000A	520	217	460	150	97	6	85	3	1
1250A	520	227	460	160	97	6	92.5	3	1
1350A	520	237	460	170	97	6	97.5	3	1
1600A	520	252	460	185	97	6	105	3	1
2000A	520	282	460	215	97	6	120	3	1
2250A	520	317	460	250	97	6	91.6	4	1
2500A	520	357	460	290	97	6	105	4	1
2000A	520	315	460	248	97	6	90.8	4	2
2500A	520	345	460	298	97	6	100.83	4	2
3300A	520	425	460	358	97	6	95.6	5	2
3600A	520	455	460	388	97	6	82.5	6	2
4000A	520	484	460	417	97	6	88.5	6	2
4250A	520	524	460	457	97	6	96.6	6	2
5000A	520	604	460	537	97	6	93.75	7	2
6300A	520	732	460	665	97	6	86.25	9	3

## Flexible Connections



Flexible Connection Busbar	FB
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### SAMPLE ORDER

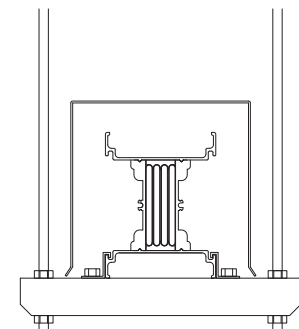
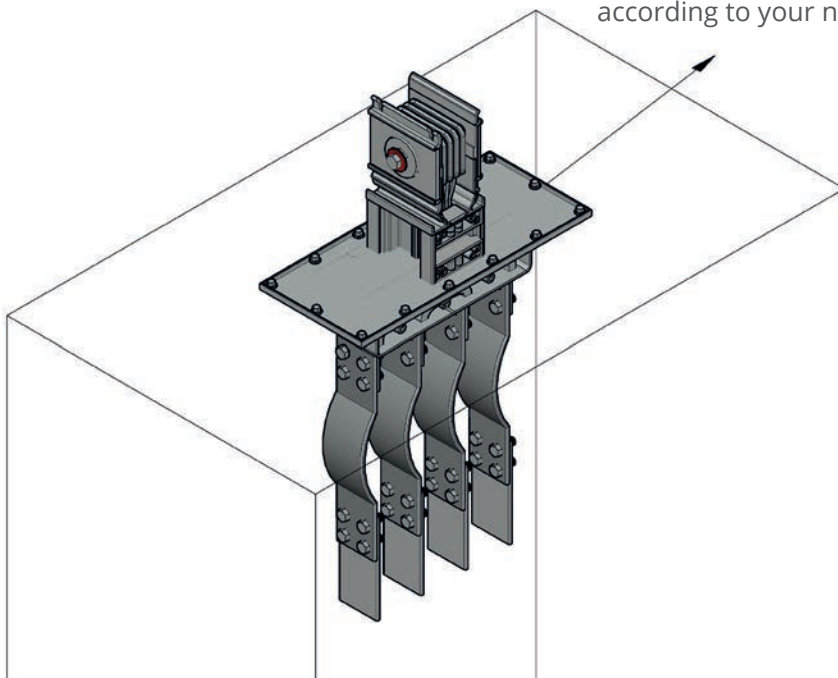
1250 A Aluminum Flexible Busbar  
IP 55 4 Conductors  
**HP-KA125T2FB**

FLEXIBLE BARASI CU			
AL		CU	
AMR	W	AMR	W
400A	300-450	550A	300-450
500A	300-450	650A	300-450
630A	300-450	800A	300-450
800A	300-450	1000A	300-450
1000A	300-450	1250A	300-450
1250A	300-450	1350A	300-450
1350A	300-450	1600A	300-450
1600A	300-450	2000A	300-450
2000A	300-450	2250A	300-450
2500A	300-450	2500A	300-450
2500A	300-450	2000A	300-450
3000A	300-450	2500A	300-450
3200A	300-450	3300A	300-450
4000A	300-450	3600A	300-450
5000A	300-450	4000A	300-450
6300A	300-450	4250A	300-450
		5000A	300-450
		6300A	300-450

## Flexible

Flexible braided connections are used where it is necessary to mechanically separate the transformer to the connection interface of the busbar to prevent vibration transmission.

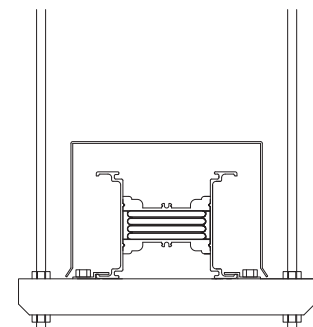
The distance between phases can be designed according to your needs



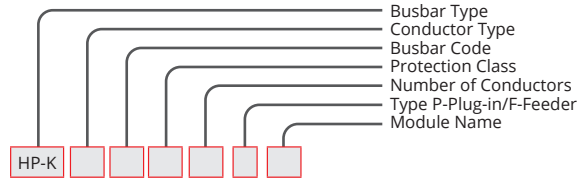
HP-K

## Canopy

It is necessary to use a canopy system outdoors where the IP55 protection degree is not sufficient. The application of the canopy system does not change the protection degree of the busbar.



# Panel Adapter Box Flange

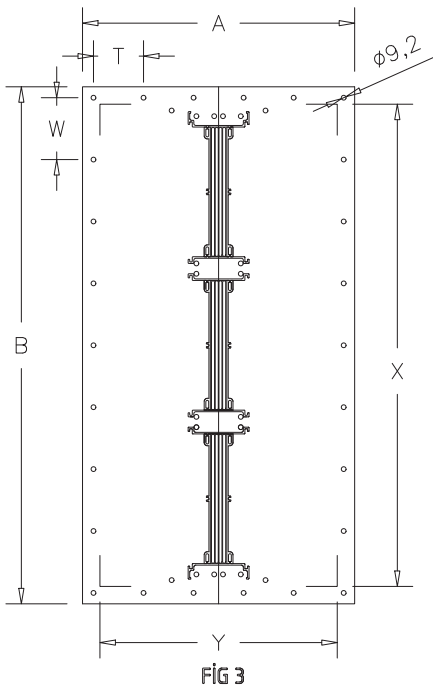
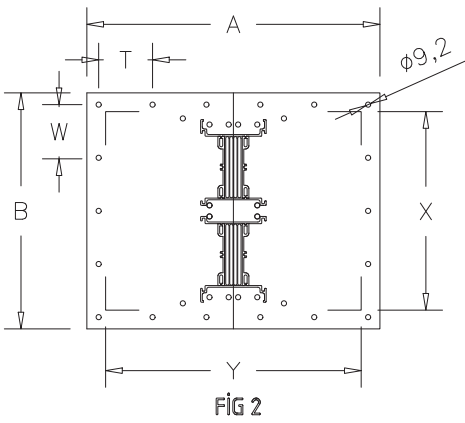
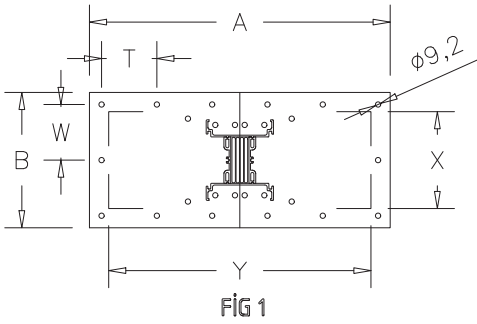
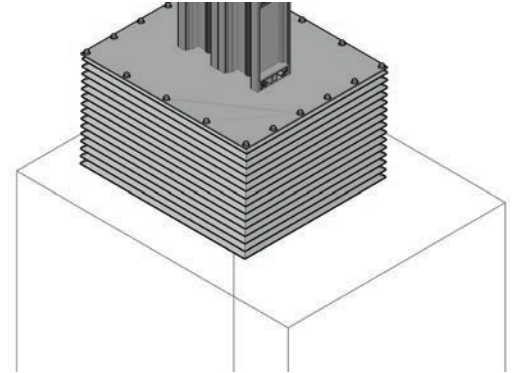


Panel Bellows Flange	PKF
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## SAMPLE ORDER

2500 A Aluminum  
Panel Adapter Box  
IP 55 4 Conductors

**HP-HA255T2R1PKF**



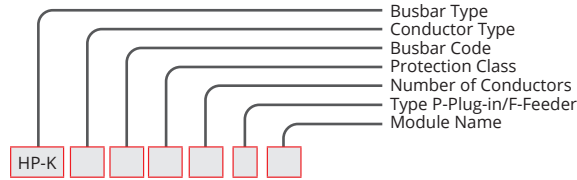
### CONNECTION TOP FLANGE DIMENSIONS (AL)

AMR.	A (mm)	B (mm)	Y (mm)	X (mm)	T (mm)	R	W (mm)	Ø9 MM R	FIG
400A	520	198	460	130	97	6	77.5	3	1
500A	520	198	460	130	97	6	77.5	3	1
630A	520	198	460	130	97	6	77.5	3	1
800A	520	212	460	145	97	6	85	3	1
1000A	520	237	460	170	97	6	97.5	3	1
1250A	520	267	460	200	97	6	112.5	3	1
1350A	520	282	460	215	97	6	120	3	1
1600A	520	317	460	250	97	6	91.65	4	1
2000A	520	357	460	290	97	6	78.75	5	1
2500A	520	407	460	340	97	6	91.25	5	1
2500A	520	424	460	357	97	6	95.6	5	2
3000A	520	485	460	418	97	6	88.5	6	2
3200A	520	524	460	457	97	6	96.5	6	2
4000A	520	604	460	537	97	6	112.5	6	2
5000A	520	704	460	637	97	6	132.5	6	2
6300A	520	852	460	785	97	6	101.25	9	3

### CONNECTION TOP FLANGE DIMENSIONS (CU)

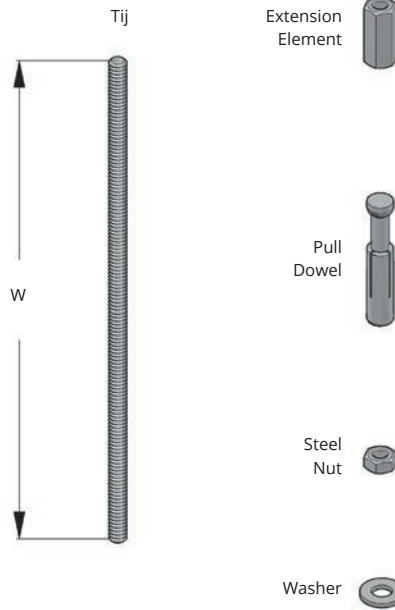
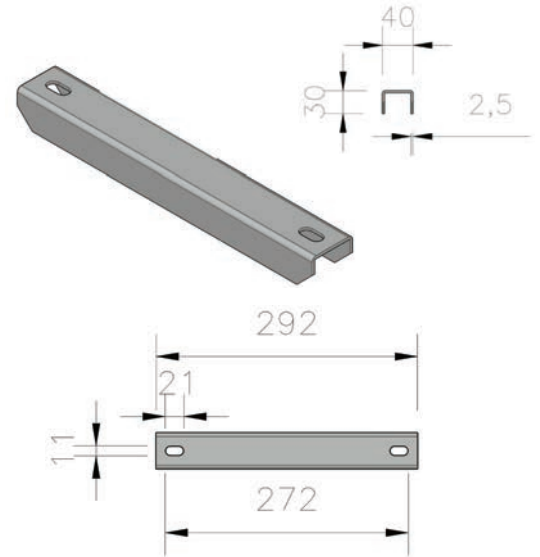
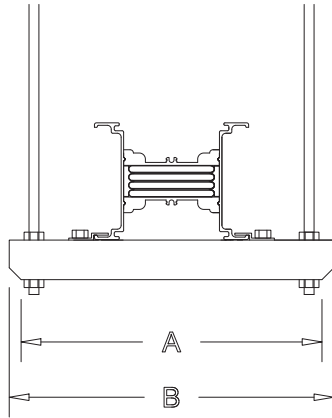
AMR.	A (mm)	B (mm)	Y (mm)	X (mm)	T (mm)	R	W (mm)	Ø9 MM R	FIG
550A	520	198	460	130	97	6	77.5	3	1
650A	520	198	460	130	97	6	77.5	3	1
800A	520	198	460	130	97	6	77.5	3	1
1000A	520	217	460	150	97	6	85	3	1
1250A	520	227	460	160	97	6	92.5	3	1
1350A	520	237	460	170	97	6	97.5	3	1
1600A	520	252	460	185	97	6	105	3	1
2000A	520	282	460	215	97	6	120	3	1
2250A	520	317	460	250	97	6	91.6	4	1
2500A	520	357	460	290	97	6	105	4	1
2000A	520	315	460	248	97	6	90.8	4	2
2500A	520	345	460	298	97	6	100.83	4	2
3300A	520	425	460	358	97	6	95.6	5	2
3600A	520	455	460	388	97	6	82.5	6	2
4000A	520	484	460	417	97	6	88.5	6	2
4250A	520	524	460	457	97	6	96.6	6	2
5000A	520	604	460	537	97	6	93.75	7	2
6300A	520	732	460	665	97	6	86.25	9	3

# Horizontal Suspension Set (U)



Special Horizontal Suspension Set Horizontal Application	YUP
--	-----

**SAMPLE ORDER**  
 5000 A Aluminum  
 Horizontal Suspension  
 IP 55 4 Conductors  
**HP-KA505T2YUP**



CONNECTION ELEMENTS		
Name	W(mm)	Code
B-E 12 Tij Hanger(M10)	500	BE101
B-E 12 Tij Hanger(M10)	1000	BE102
B-E 14 Tij Hanger(M12)	500	BE103
B-E 14 Tij Hanger(M12)	1000	BE104
(M10) Extension Element	-	BE105
(M12) Extension Element	-	BE106
M 10 Pull Dowel	-	BE107
M 12 Pull Dowel	-	BE108
M 10 Steel Nut	-	BE109
M 12 Steel Nut	-	BE110
M 10 Washer	-	BE111
M 12 Washer	-	BE112

SPECIAL HORIZONTAL SUSPENSION SET HORIZONTAL APPLICATION						
	(AL)		(CU)			
	AMR	A	B	AMR	A	B
400A	252	292	550A	252	292	
500A	252	292	650A	252	292	
630A	252	292	800A	252	292	
800A	268	308	1000A	268	308	
1000A	292	332	1250A	282	322	
1250A	322	362	1350A	292	332	
1350A	337	377	1600A	322	362	
1600A	372	412	2000A	352	392	
2000A	412	452	2250A	372	412	
2500A	462	502	2500A	412	452	
2500A	497	519	2000A	369	409	
3000A	539	579	2500A	419	459	
3200A	579	619	3300A	479	519	
4000A	659	699	3600A	509	549	
5000A	759	799	4000A	539	579	
6300A	1056	1096	4250A	579	619	
			5000A	659	699	
			6300A	905	945	

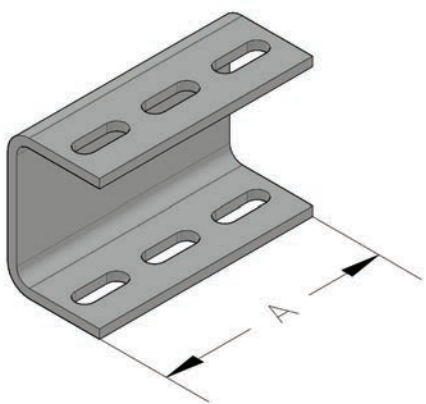
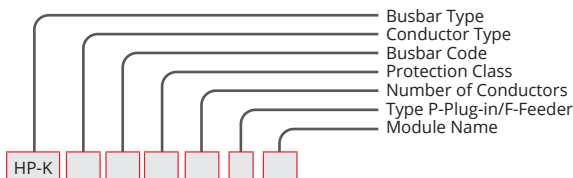
HP-K

Drill Bit Diameter:

M10.....Ø14

M12.....Ø16

# Special Horizontal Suspension (U)

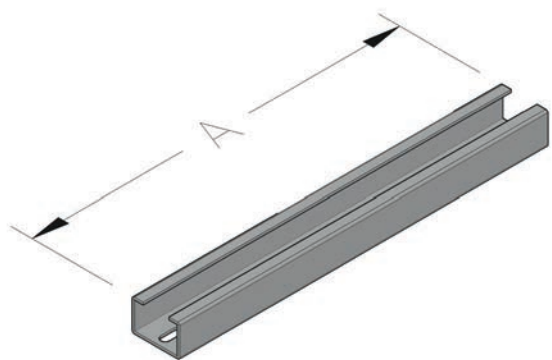


Horizontal Ceiling Kit	YTK
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### SAMPLE ORDER

1000 A Aluminum  
Horizontal Ceiling Kit  
IP 55 4 Conductors

**HP-KA105T2YTK**



Horizontal Suspension Set Special	YVA
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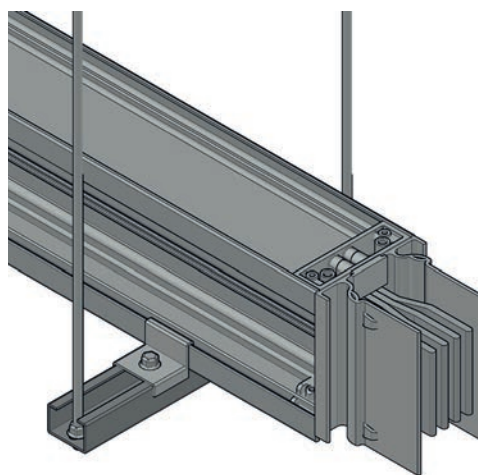
### SAMPLE ORDER

1000 A Aluminum  
Horizontal Suspension  
IP 55 4 Conductors

**HP-KA105T2YVA**

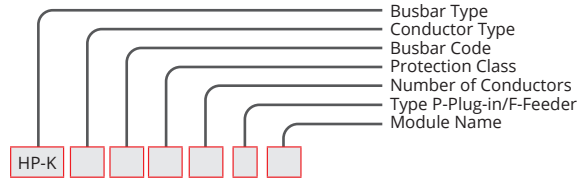
HORIZONTAL CEILING CONNECTION KIT (U PROFILE)			
AL		CU	
AMR	A	AMR	A
400A	100	550A	100
500A	100	650A	100
630A	100	800A	100
800A	100	1000A	100
1000A	100	1250A	100
1250A	100	1350A	100
1350A	100	1600A	100
1600A	100	2000A	100
2000A	100	2250A	100
2500A	100	2500A	100
2500A	100	2000A	100
3000A	100	2500A	100
3200A	100	3300A	100
4000A	100	3600A	100
5000A	100	4000A	100
6300A	100	4250A	100
		5000A	100
		6300A	100

HORIZONTAL SUSPENSION SET HORIZONTAL SPECIAL (U PROFILE)			
AL		CU	
AMR	A	AMR	A
400A	252	550A	252
500A	252	650A	252
630A	252	800A	252
800A	267	1000A	267
1000A	292	1250A	282
1250A	322	1350A	292
1350A	337	1600A	307
1600A	372	2000A	337
2000A	412	2250A	372
2500A	462	2500A	412
2500A	479	2000A	369
3000A	539	2500A	419
3200A	579	3300A	479
4000A	659	3600A	509
5000A	759	4000A	539
6300A	907	4250A	579
		5000A	659
		6300A	907



HORIZONTAL SUSPENSION SET VERTICAL SPECIAL (U PROFILE)			
AL		CU	
AMR	A	AMR	A
400A	355	550A	355
500A	355	650A	355
630A	355	800A	355
800A	355	1000A	355
1000A	355	1250A	355
1250A	355	1350A	355
1350A	355	1600A	355
1600A	355	2000A	355
2000A	355	2250A	355
2500A	355	2500A	355
2500A	355	2000A	355
3000A	355	2500A	355
3200A	355	3300A	355
4000A	355	3600A	355
5000A	355	4000A	355
6300A	355	4250A	355
		5000A	355
		6300A	355

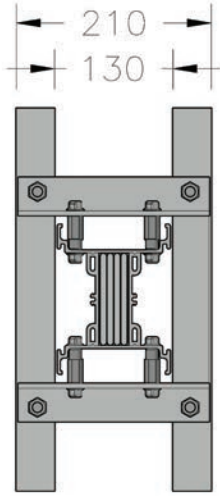
# Spring Type Suspension Set



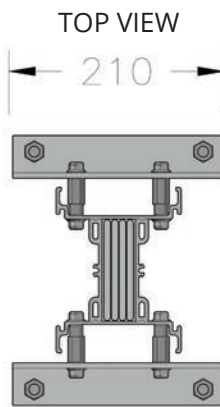
Shaft Suspension Set	HPS
----------------------	-----

### SAMPLE ORDER

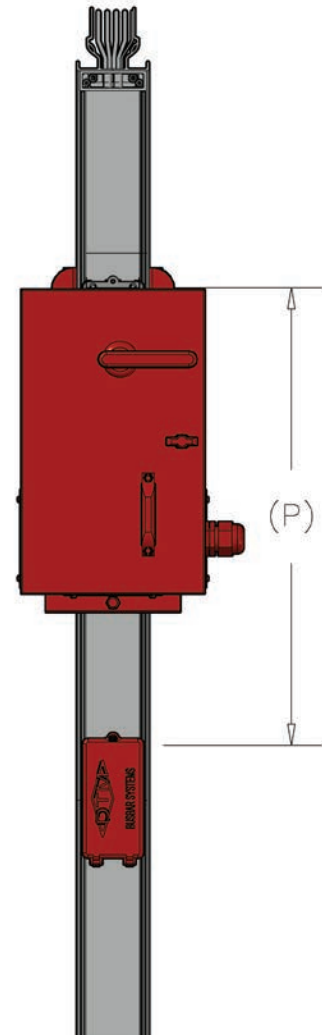
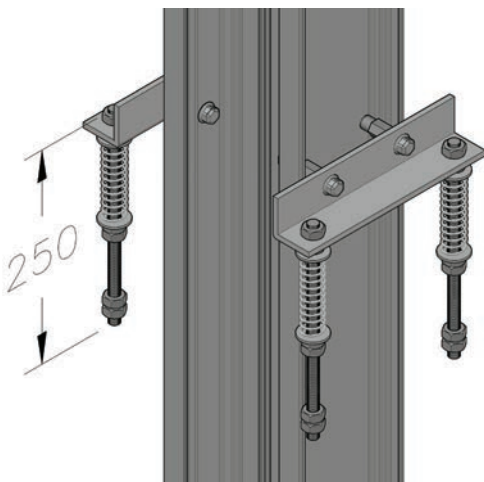
1250 A Aluminum  
Shaft Suspension  
IP 55 4 Conductors  
**HP-KA125T2HPS**



CUSTOMER SIDE  
60x40 U PROFILE



SIDE VIEW



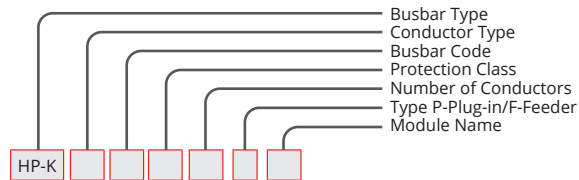
SHAFT SUSPENSION KIT	
AMR	AMR
HPS04	HPS05
HPS05	HPS06
HPS06	HPS07
HPS08	HPS09
HPS10	HPS13
HPS12	HPS15
HPS14	HPS17
HPS16	HPS21
HPS20	HPS23
HPS25	HPS24
HPS26	HPS22
HPS30	HPS27
HPS32	HPS33
HPS40	HPS36
HPS50	HPS41
HPS63	HPS42
	HPS51
	HPS63

OUTPUT UNIT	MINIMUM HOLE PITCH
AMR	P (mm)
50A-200A	650
400A	900
600A	1000
800A	1000
1000A	1300
1200A	1300

HP-K

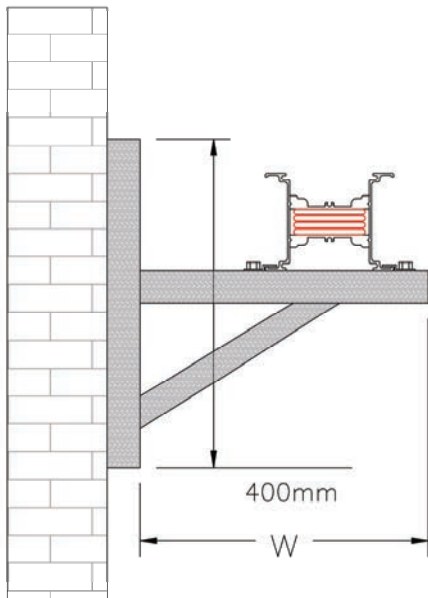


# Wall Type Suspension Set



Wall Suspension Set Horizontal Application	DYA
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Wall Suspension Standard (HORIZONTAL)



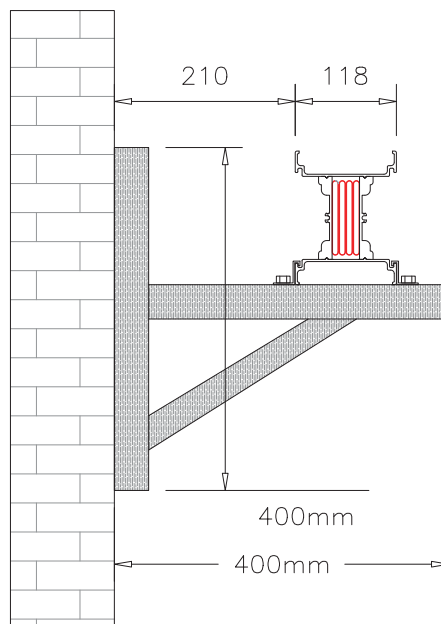
## SAMPLE ORDER

1600 A Aluminum  
Wall Suspension  
IP 55 4 Conductors

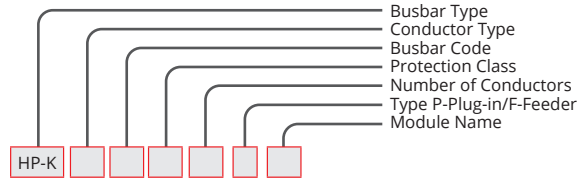
**HP-KA165T2DYA**

WALL SUSPENSION SET (HORIZONTAL)			
AL		CU	
AMR	W	AMR	W
400A	372	550A	372
500A	372	650A	372
630A	372	800A	372
800A	387	1000A	387
1000A	412	1250A	402
1250A	442	1350A	412
1350A	457	1600A	427
1600A	492	2000A	457
2000A	532	2250A	492
2500A	582	2500A	532
2500A	599	2000A	489
3000A	659	2500A	539
3200A	699	3300A	599
4000A	779	3600A	629
5000A	879	4000A	659
6300A	1027	4250A	699
		5000A	779
		6300A	879

Wall Type Suspension Standard (VERTICAL)



# Spring Type Shaft Suspension Set



Spring Type Hanger	SA
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**SAMPLE ORDER**

1000 A Aluminum  
Spring Hanger  
IP 55 4 Conductors  
**HP-KA105T2SA**

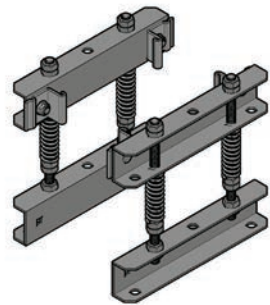


FIG 2

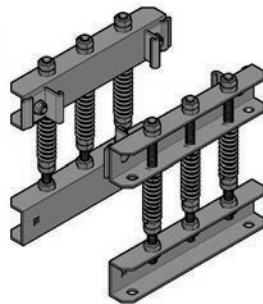


FIG 3

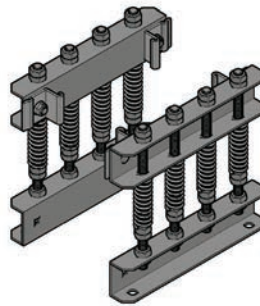
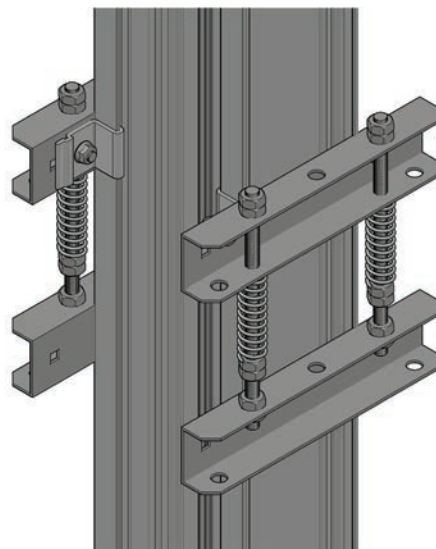


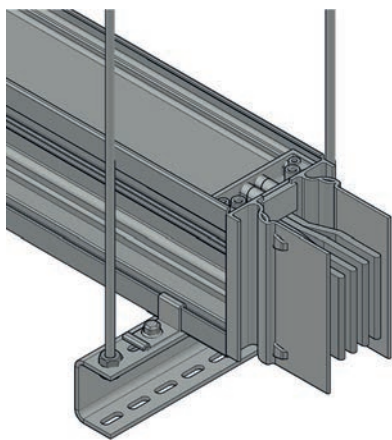
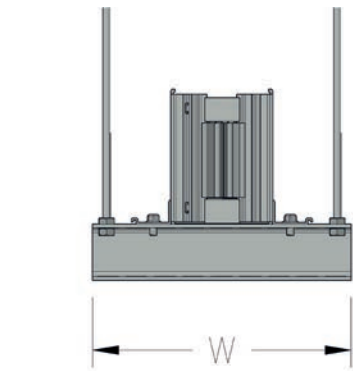
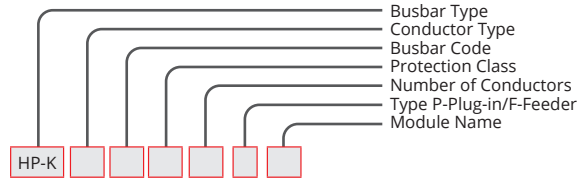
FIG 4



SPRING TYPE SHAFT HANGER CONNECTION FIGURES			
AL		CU	
400A	FIG2	550A	FIG2
500A	FIG2	650A	FIG2
630A	FIG2	800A	FIG2
800A	FIG2	1000A	FIG2
1000A	FIG2	1250A	FIG3
1250A	FIG2	1350A	FIG3
1350A	FIG2	1600A	FIG3
1600A	FIG2	2000A	FIG3
2000A	FIG3	2250A	FIG3
2500A	FIG3	2500A	FIG3
2500A	FIG3	2000A	FIG4
3000A	FIG4	2500A	FIG4
3200A	FIG4	3300A	FIG4
4000A	FIG4	3600A	FIG4
5000A	FIG4	4000A	FIG4
6300A	FIG4	4250A	FIG4
		5000A	FIG4
		6300A	FIG4

HP-K

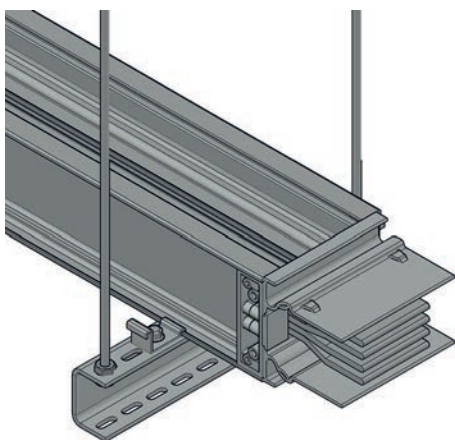
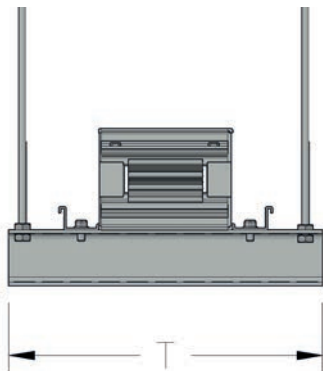
# Horizontal Suspension Set



Horizontal Suspension Set Vertical Application	YUD
---	-----

**SAMPLE ORDER**  
800 A Aluminum  
Horizontal Suspension  
IP 55 4 Conductors  
**HP-KA085T2YUD**

HORIZONTAL SUSPENSION SET VERTICAL APPLICATION			
AL		CU	
AMR	W	AMR	W
400A	300	550A	300
500A	300	650A	300
630A	300	800A	300
800A	300	1000A	300
1000A	300	1250A	300
1250A	300	1350A	300
1350A	300	1600A	300
1600A	300	2000A	300
2000A	300	2250A	300
2500A	300	2500A	300
2500A	300	2000A	300
3000A	300	2500A	300
3200A	300	3300A	300
4000A	300	3600A	300
5000A	300	4000A	300
6300A	300	4250A	300
		5000A	300
		6300A	300

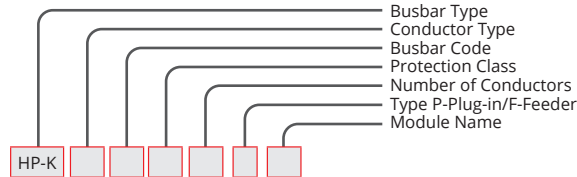
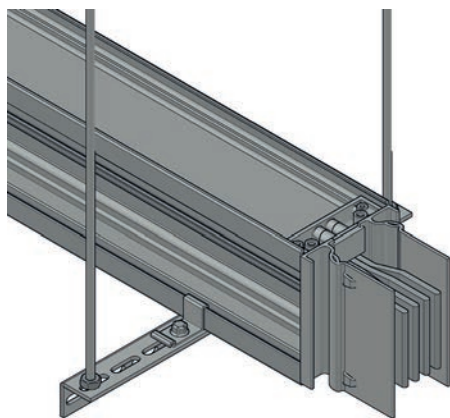
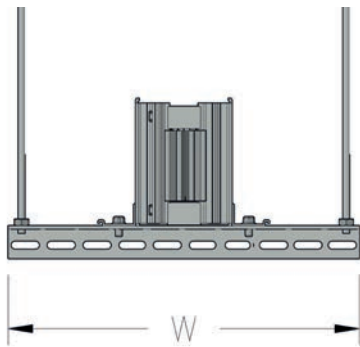


Horizontal Suspension Set Horizontal Application	YUY
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**SAMPLE ORDER**  
1000 A Aluminum  
Horizontal Suspension  
IP 55 4 Conductors  
**HP-KA105T2YUY**

HORIZONTAL SUSPENSION SET HORIZONTAL APPLICATION			
AL		CU	
AMR	T	AMR	T
400A	252	550A	252
500A	252	650A	252
630A	252	800A	252
800A	267	1000A	267
1000A	292	1250A	282
1250A	322	1350A	292
1350A	337	1600A	307
1600A	372	2000A	337
2000A	412	2250A	372
2500A	462	2500A	412
2500A	479	2000A	369
3000A	539	2500A	419
3200A	579	3300A	479
4000A	659	3600A	509
5000A	759	4000A	539
6300A	907	4250A	579
		5000A	659
		6300A	907

### Horizontal Suspension Set (L)



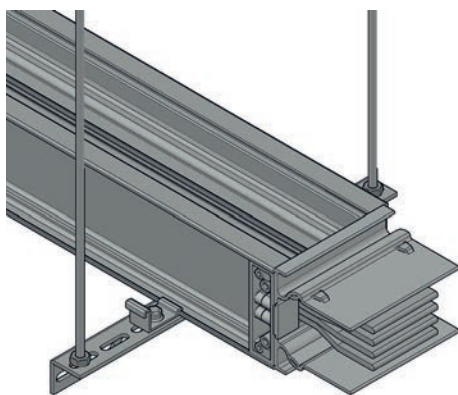
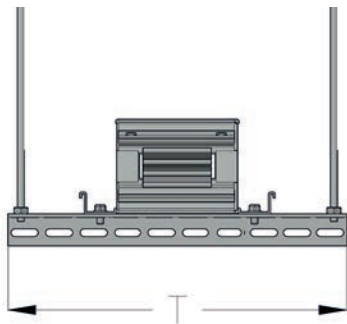
Horizontal Suspension Set Vertical Application	YLD
--	-----

**SAMPLE ORDER**

1350 A Aluminum  
Horizontal Bracket Suspension  
IP 55 4 Conductors

**HP-KA135T2YLD**

HORIZONTAL SUSPENSION SET VERTICAL APPLICATION (L Bracket) 50X50			
AL		CU	
AMR	W	AMR	W
400A	300	550A	300
500A	300	650A	300
630A	300	800A	300
800A	300	1000A	300
1000A	300	1250A	300
1250A	300	1350A	300
1350A	300	1600A	300
1600A	300	2000A	300
2000A	300	2250A	300
2500A	300	2500A	300
2500A	300	2000A	300
3000A	300	2500A	300
3200A	300	3300A	300
4000A	300	3600A	300
5000A	300	4000A	300
6300A	300	4250A	300
		5000A	300
		6300A	300



Horizontal Suspension Set Horizontal Application	YLY
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**SAMPLE ORDER**

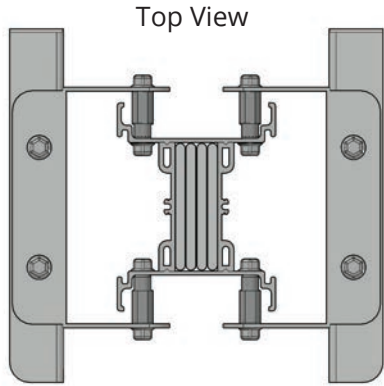
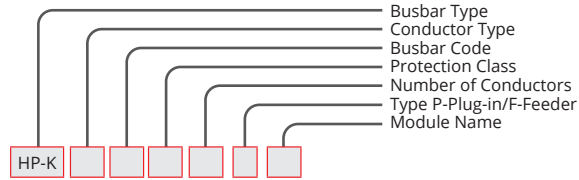
1600 A Aluminum  
Horizontal Bracket Suspension  
IP 55 4 Conductors

**HP-HA165T2YLY**

HORIZONTAL SUSPENSION SET HORIZONTAL APPLICATION (L Bracket) 50X50			
AL		CU	
AMR	T	AMR	T
400A	252	550A	252
500A	252	650A	252
630A	252	800A	252
800A	267	1000A	267
1000A	292	1250A	282
1250A	322	1350A	292
1350A	337	1600A	307
1600A	372	2000A	337
2000A	412	2250A	372
2500A	462	2500A	412
2500A	479	2000A	369
3000A	539	2500A	419
3200A	579	3300A	479
4000A	659	3600A	509
5000A	759	4000A	539
6300A	907	4250A	579
		5000A	659
		6300A	907

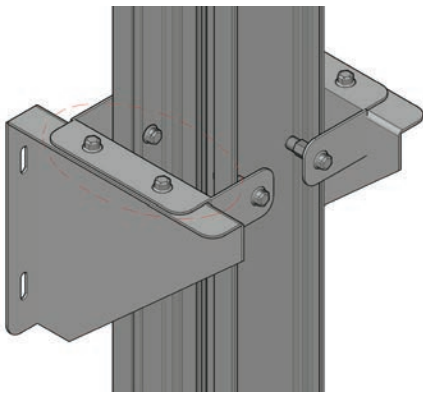
HP-K

# Shaft Wall Suspension Set

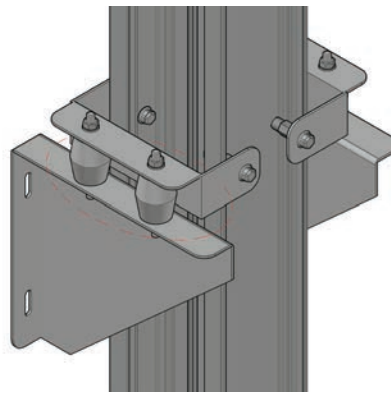


Shaft Wall Suspension Kit	SD
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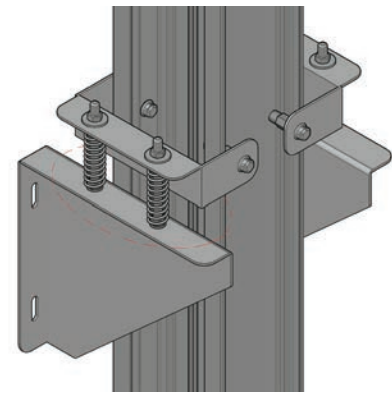
**SAMPLE ORDER**  
 800 A Aluminum  
 Horizontal Suspension  
 IP 55 4 Conductors  
**HP-KA085T2SD3**



(1)  
Still



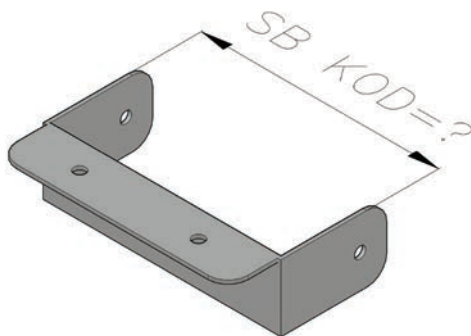
(2)  
Rubberized



(3)  
Spring

Shaft Busbar Connection Element	SB
---------------------------------	----

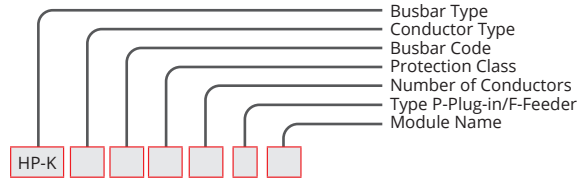
**SAMPLE ORDER**  
 1000 A Aluminum  
 Shaft Connection Element  
 IP 55 4 Conductors  
**HP-KA105T2SBA5**



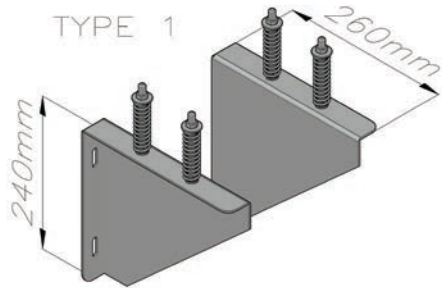
SHAFT CONNECTION ELEMENT (SPECIAL)			
AL		CU	
AMR	CODE	AMR	CODE
400A	SBA1	550A	SBC1
500A	SBA2	650A	SBC2
630A	SBA3	800A	SBC3
800A	SBA4	1000A	SBC4
1000A	SBA5	1250A	SBC5
1250A	SBA6	1350A	SBC6
1350A	SBA7	1600A	SBC7
1600A	SBA8	2000A	SBC8
2000A	SBA9	2250A	SBC9
2500A	SBA10	2500A	SBC10
2500A	SBA11	2000A	SBC11
3000A	SBA12	2500A	SBC12
3200A	SBA13	3300A	SBC13
4000A	SBA14	3600A	SBC14
5000A	SBA15	4000A	SBC15
6300A	SBA16	4250A	SBC16
		5000A	SBC17
		6300A	SBC18



# Shaft Wall Suspension Set



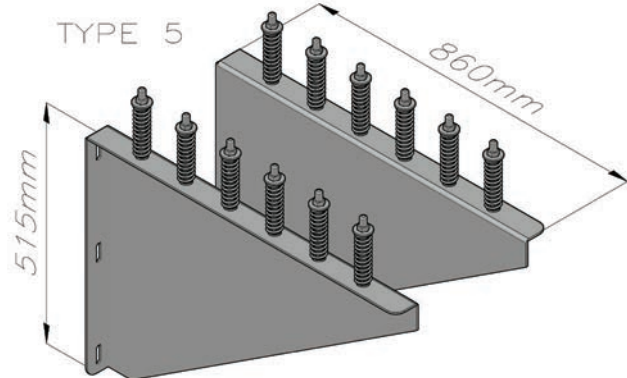
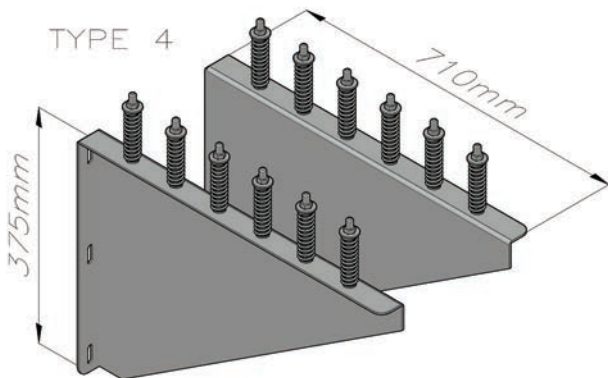
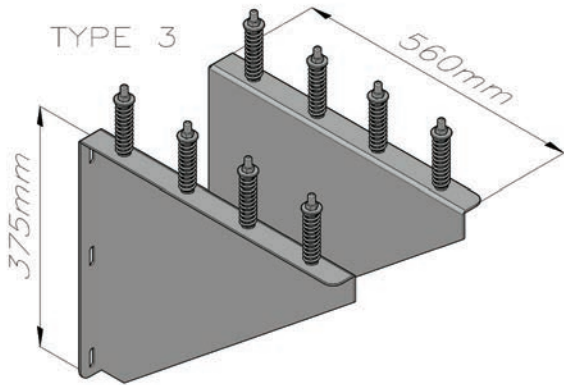
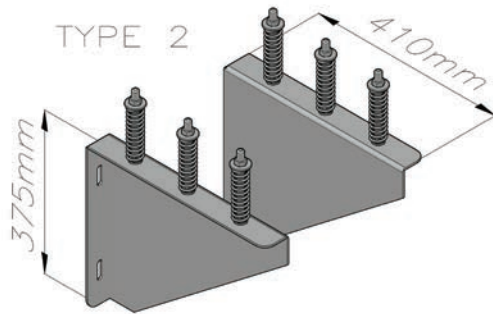
Shaft Wall Suspension Kit	TYPE
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### SAMPLE ORDER

1000 A Aluminum  
Shaft Wall Suspension Set  
IP 55 4 Conductors

**HP-KA105T2TYPE1**

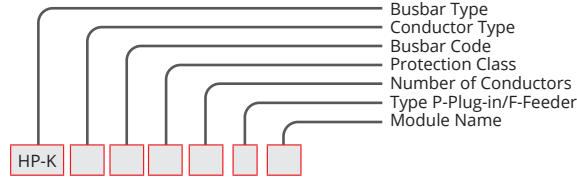
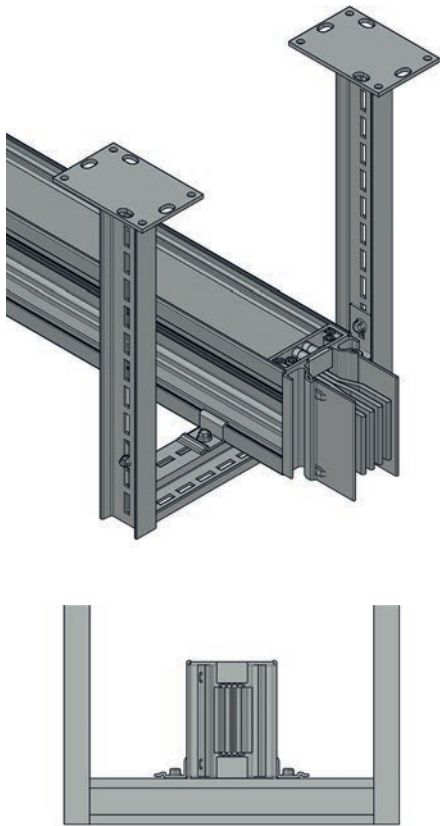


SHAFT WALL SUSPENSION SET TABLOSU			
AL		CU	
AMR	TPYE	AMR	TPYE
400A	TYPE1	550A	TYPE1
500A	TYPE1	650A	TYPE1
630A	TYPE1	800A	TYPE1
800A	TYPE1	1000A	TYPE1
1000A	TYPE1	1250A	TYPE1
1250A	TYPE2	1350A	TYPE2
1350A	TYPE2	1600A	TYPE2
1600A	TYPE2	2000A	TYPE2
2000A	TYPE2	2250A	TYPE2
2500A	TYPE2	2500A	TYPE2
2500A	TYPE4	2000A	TYPE2
3000A	TYPE3	2500A	TYPE3
3200A	TYPE3	3300A	TYPE3
4000A	TYPE4	3600A	TYPE3
5000A	TYPE5	4000A	TYPE4
6300A	TYPE5	4250A	TYPE4
		5000A	TYPE5
		6300A	TYPE5

HP-K



# Horizontal NPI Suspension Set

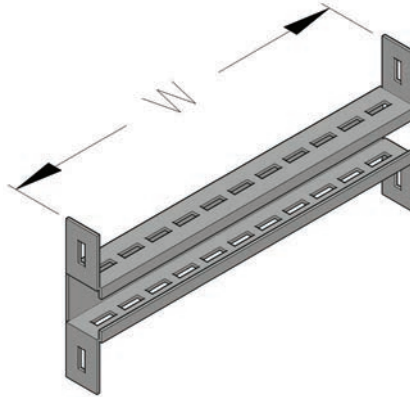


Horizontal Suspension Set Vertical Application	YID
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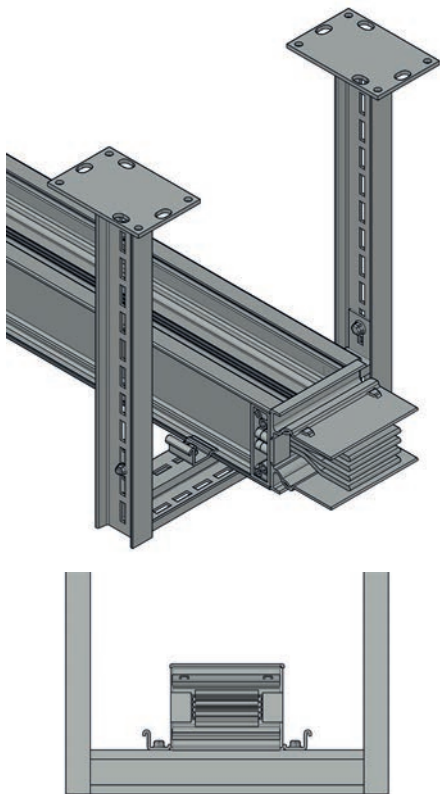
### SAMPLE ORDER

800 A Aluminum Suspension  
IP 55 4 Conductor

**HP-KA085T2YID**



HORIZONTAL SUSPENSION SET VERTICAL APPLICATION			
AL		CU	
AMR	W	AMR	W
400A	300	550A	300
500A	300	650A	300
630A	300	800A	300
800A	300	1000A	300
1000A	300	1250A	300
1250A	300	1350A	300
1350A	300	1600A	300
1600A	300	2000A	300
2000A	300	2250A	300
2500A	300	2500A	300
2500A	300	2000A	300
3000A	300	2500A	300
3200A	300	3300A	300
4000A	300	3600A	300
5000A	300	4000A	300
6300A	300	4250A	300
		5000A	300
		6300A	300

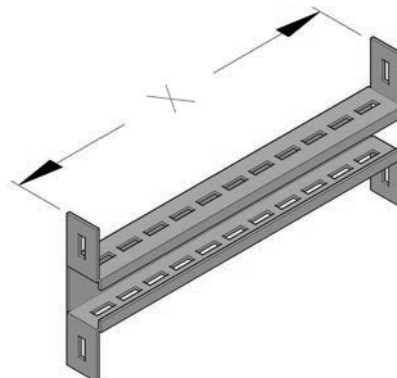


Horizontal Suspension Set Horizontal Application	YIY
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### SAMPLE ORDER

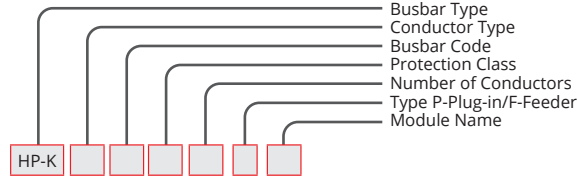
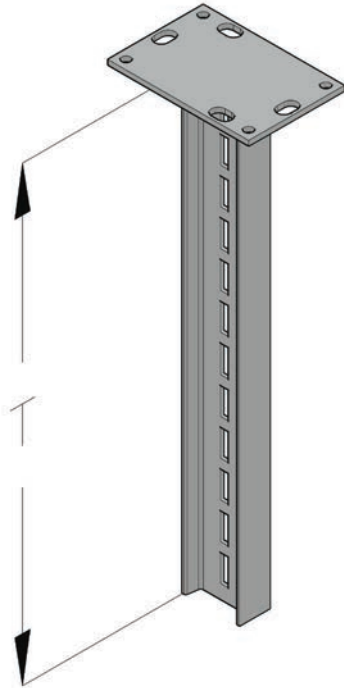
1000 A Aluminum Horizontal Suspension  
IP 55 4 Conductors

**HP-KA105T2YIY**



HORIZONTAL SUSPENSION SET HORIZONTAL APPLICATION			
AL		CU	
AMR	W	AMR	W
400A	252	550A	252
500A	252	650A	252
630A	252	800A	252
800A	267	1000A	267
1000A	292	1250A	282
1250A	322	1350A	292
1350A	337	1600A	307
1600A	372	2000A	337
2000A	412	2250A	372
2500A	462	2500A	412
2500A	479	2000A	369
3000A	539	2500A	419
3200A	579	3300A	479
4000A	659	3600A	509
5000A	759	4000A	539
6300A	907	4250A	579
		5000A	659
		6300A	907

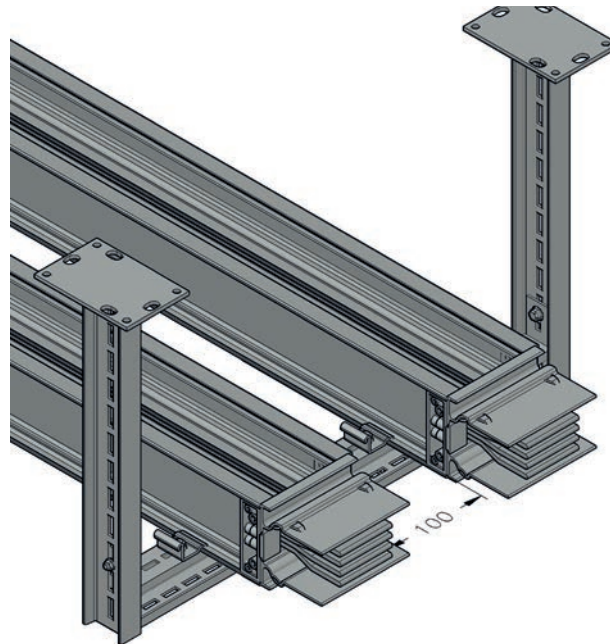
Ceiling NPI Suspension



Ceiling Suspension NPI	IYD
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**SAMPLE ORDER**  
 1600 A Aluminum  
 Ceiling NPI Suspension  
 IP 55 4 Conductors  
**HP-KA165T2IYD**

NPI CEILING CONNECTION ELEMENT		
Name	T (mm)	Code
NPI ASKI (5)	500	NPI5
NPI ASKI (10)	1000	NPI10
NPI ASKI (15)	1500	NPI15
NPI ASKI (20)	2000	NPI20



HP-K

## TECHNICAL TABLE (HP-K AL)

### ALUMINUM CONDUCTOR (AL)

Rated Current	In	A	400	500	630	800	1000	
Busbar Code			HP-KA04	HP-KA05	HP-KA06	HP-KA08	HP-KA10	
Protection Class	IP55							
Standards	IEC 61439-6 TS EN 61439-6 IEC 61439-1 TS EN 61439-1							
Max. Rated Operating Voltage	Ue	Vac	1000					
Rated Impact Withstand Voltage	Uimp	kV	8					
Frequency	f	Hz	50					
Rated Insulation Voltage	Ui	V	1000	Category IV				
Mechanical Impact Resistance (IK Code)	Plug-in Busbar IK10							
Measures for the Protection of People	Basic Protection (TS HD 60364-4-41, item A1)							
Short Term Current (1s)	Icw	kA	15	18	25	35	60	
Peak Withstand Current	Ipk	kA	32	36	52,6	73,6	105,5	
Rated Short Time Current for Neutral Conductor (1s)	Icw	kA	9,8	9,8	14	20	30,2	
Rated Peak Withstand Current for Neutral Conductor	Ipk	kA	17	17	30,5	44	64	
Rated Short Time Current For Protection Circuit (1s)	Icw	kA	9,8	9,8	14	20	30,2	
Rated Peak Withstand Current for Protection Circuit	Ipk	kA	17	17	30,5	44	64	
Resistance at 20 °C Conductor Temperature	R <sub>20</sub>	mΩ/m	0.280	0.236	0.155	0.110	0.080	
Resistance at 35 °C Ambient Air Temperature	R	mΩ/m	0.310	0.264	0.174	0.140	0.090	
Temperature Independent Reactance	X	mΩ/m	0.032	0.022	0.026	0.025	0.016	
Impedance at 20 °C Conductor Temperature	Z <sub>20</sub>	mΩ/m	1.023	0.854	0.616	0.478	0.366	
Impedance at 35 °C Ambient Air Temperature	Z <sub>35</sub>	mΩ/m	1.396	1.186	0.829	0.631	0.366	

## TECHNICAL TABLE (HP-K CU)

### COPPER CONDUCTOR (CU)

Rated Current	In	A	550	650	800	1000	1250	1350	1600
Busbar Code			HP-KC05	HP-KC06	HP-KC07	HP-KC09	HP-KC13	HP-KC15	HP-KC17
Protection Class	IP55								
Standards	IEC 61439-6 TS EN 61439-6 IEC 61439-1 TS EN 61439-1								
Max. Rated Operating Voltage	Ue	Vac	1000						
Rated Impact Withstand Voltage	Uimp	kV	8						
Frequency	f	Hz	50						
Rated Insulation Voltage	Ui	V	1000	Category IV					
Mechanical Impact Resistance (IK Code)	Plug-in Busbar IK10								
Measures for the Protection of People	Basic Protection (TS HD 60364-4-41, item A1)								
Short Term Current (1s)	Icw	kA	25	25	40	50	60	60	80
Peak Withstand Current	Ipk	kA	50,5	50,5	85	104	132	132	175,5
Rated Short Time Current for Neutral Conductor (1s)	Icw	kA	15,8	15,8	25	32	34	36	50
Rated Peak Withstand Current for Neutral Conductor	Ipk	kA	30	30	50,5	63,2	75,5	75,5	101
Rated Short Time Current For Protection Circuit (1s)	Icw	kA	15,8	15,8	25	32	34	36	50
Rated Peak Withstand Current for Protection Circuit	Ipk	kA	30	30	50,5	63,2	75,5	75,5	101
Resistance at 20 °C Conductor Temperature	R <sub>20</sub>	mΩ/m	0,125	0,102	0,077	0,058	0,046	0,040	0,035
Resistance at 35 °C Ambient Air Temperature	R	mΩ/m	0,165	0,140	0,100	0,074	0,059	0,051	0,045
Temperature Independent Reactance	X	mΩ/m	0,044	0,034	0,028	0,023	0,019	0,016	0,015
Impedance at 20 °C Conductor Temperature	Z <sub>20</sub>	mΩ/m	0.587	0.491	0.395	0.297	0.252	0.200	0.170
Impedance at 35 °C Ambient Air Temperature	Z <sub>35</sub>	mΩ/m	0.752	0.647	0.500	0.373	0.311	0.253	0.223



<b>The operating current <math>I_b</math> calculation is made according to the formula below.</b>		
$I_b = \frac{P \times F}{\sqrt{3} \times U_e \times \cos \varphi}$		
Parameters to consider		
P: Total power of the feeder load F: Feeder load coefficient		
Feeder load coefficient varies according to the place where the power is used. It may need to be calculated for each use. Some usage purposes and floor numbers are given in the table below.		
<b>Usage Areas:</b>	<b>Number of Users:</b>	<b>Coefficient:</b>
Industrial	1 to 10	0,8-0,9
Industrial	10 to 20	0,7-0,8
Industrial	20 to 40	0,6-0,7
Service	Large Offices	0,7-0,8
Service	Shopping Malls	0,8-0,9
U <sub>e</sub> : Operating voltage (V)		
Example: The area of use is industrial		
Number of Users 15		
Uniform power unit 125kw		
Max. Operating voltage 400V		
cosφ 0,95		
$I_b = \frac{P \times F}{\sqrt{3} \times U_e \times \cos \varphi}$		
Total power 15x125=1875kw 1875000 (W) P		
Coefficient: 0,8		
$I_b = \frac{1875000 \times 0,8}{1,73 \times 400 \times 0,95} = 2281 \text{ A}$		
As a manufacturer, it should be taken into account when increasing power in the future. Therefore, getting a 20% margin surplus makes your busbar safe.		
2281 A X 20% =2737 A		
Available currents 3200 A AL 3200 A CU		
It is necessary to control the temperature level of the place of use. Busbar conductors are designed for an average daily temperature of 40 °C. According to the temperature increase, the busbar should be pulled to a higher level. Let's look at the application below.		
K : Reduction coefficient according to ambient temperature		
40°	1	
45°	0,95	
50°	0,90	
55°	0,85	
60°	0,80	
65°	0,74	
70°	0,67	

Example: Average (daily) temperature 60 °C Busbar	
The operating current is 2737 A. According to 60°C temperature	
2737 A /0,80=3421 A	
If the ambient temperature is 60 °C, 4000 A conductors should be selected.	
<b>Calculate the voltage drop <math>\Delta V\%</math> according to the formula below.</b>	
$\Delta V\% = D \times t \times I_b \times L / U_e \times 100$	
And the following parameters are taken into account.	
D: Load distribution factor, A line that changes according to the feeder direction and point is counted. This multiplier allows you to calculate quickly.	
D=1 Receive Feeder from one side and supply at the end point. D=0.5 Receive Feeder from one side and supply in equal proportion. T : Unit voltage drop value is in the table (Page 115) { $t = \sqrt{3} \times 1000 \times (R \times \cos \varphi + X \times \sin \varphi)$ } R : Resistance ( mohm/m ) X : Reactance ( mohm/m ) According to the Cos φ values (μV), the values are given in 1 ampere /m t.	
I <sub>b</sub> : Sum of all extra effective charges	
L: Total length of busbar line	
U <sub>e</sub> : Feeder voltage	
Example: The calculation of 4000 A Busbar is as follows. (tap off at the Feeder endpoint from one side)	
(L) Line Length	100 mt
(I <sub>b</sub> ) Effective load	2400 A
U <sub>e</sub> : Feeder voltage	400 V
Cos φ	0,80
(D) Load distribution factor	1
(t) The unit voltage drop value can be obtained from the table. 29,06 (V) %10 <sup>-6</sup>	
(ΔV) Maximum allowable voltage drop 3%	
$\Delta V\% = D \times t \times I_b \times L / U_e \times 100$	
$\Delta V\% = \frac{1 \times 29,06 \times 10^{-6} \times 2400 \times 100 \times 100}{400} = 1,74\%$	
The value found is less than 3%. 4000 A Busbar selection is suitable according to voltage drop calculation.	

ALUMINUM	400A	500A	630A	800A	1000A	1250A	1350A	1600A	2000A	2500A	2500A	3000A	3200A	4000A	5000A	6300A		
cosφ=0,70	414,72	346,73	242,65	200,25	128,64	98,39	86,24	66,80	58,32	51,04	44,95	40,07	36,42	26,71	23,06	18,20		
cosφ=0,75	438,76	367,66	255,45	210,20	135,04	102,45	89,79	69,95	60,57	52,94	46,76	41,88	38,15	27,92	24,19	19,15		
cosφ=0,80	462,26	388,21	267,80	219,71	141,17	106,22	93,07	72,31	62,63	54,67	48,44	43,60	39,79	29,06	25,26	20,07		
cosφ=0,85	485,20	408,38	279,71	228,79	147,02	109,70	96,10	74,79	64,49	56,23	49,98	45,20	41,35	30,14	26,28	20,95		
cosφ=0,90	507,03	427,79	290,71	237,01	152,31	112,59	98,61	76,88	65,98	57,44	51,24	46,61	42,73	31,07	27,20	21,76		
cosφ=0,95	526,65	445,68	299,91	243,50	156,50	114,30	100,08	78,21	66,71	57,96	51,95	47,59	43,77	31,73	27,90	22,44		
cosφ=1	536,30	456,72	301,02	242,20	155,70	110,72	96,88	76,12	64,01	55,36	50,17	46,71	43,25	31,14	27,68	22,49		
COPPER	550A	650A	800A	1000A	1250A	1350A	1600A	2000A	2250A	2500A	2000A	2500A	3300A	3600A	4000A	4250A	5000A	6300A
cosφ=0,70	253,86	211,30	155,49	117,86	94,79	81,41	72,92	54,67	47,38	36,47	60,76	49,81	32,82	26,75	24,31	20,67	17,02	10,95
cosφ=0,75	264,33	220,47	161,72	122,28	98,25	84,44	75,51	56,83	49,20	37,68	63,01	51,80	33,94	27,61	25,17	21,28	17,54	11,21
cosφ=0,80	274,03	229,05	167,46	126,29	101,38	87,19	77,85	58,82	50,86	38,75	65,05	53,63	34,95	28,37	25,95	21,80	17,99	11,42
cosφ=0,85	282,98	237,04	172,72	129,91	104,18	89,67	79,93	60,64	52,37	39,69	66,88	55,31	35,83	29,03	26,64	22,23	18,37	11,57
cosφ=0,90	290,40	243,86	177,01	132,73	106,33	91,59	81,48	62,11	53,56	40,34	68,30	56,67	36,47	29,48	27,16	22,49	18,61	11,63
cosφ=0,95	294,77	248,32	179,37	133,95	107,16	92,40	82	62,89	54,13	40,45	68,89	57,42	36,62	29,51	27,33	22,40	18,58	11,47
cosφ=1	285,45	242,20	173,00	128,02	102,07	88,23	77,85	60,55	51,90	38,06	65,74	55,36	34,60	27,68	25,95	20,76	17,30	10,38

HP-K TECHNICAL SPECIFICATIONS

- 1) Related Standard: IEC 61439-6, IEC 61439-1
- 2) All current ratings have been performed as type tests in accredited laboratories.
- 3) DTM Busbar systems have CE Mark and ISO 9001, ISO 14001 quality system.
- 4) As the insulation and operating voltage is 1000V, the ambient temperature is max 40°, the max temperature rise should be 95 K.
- 5) Busbar housings are manufactured from 2.7 mm extruded Aluminum profile and finished with color RAL 7038 powder paint.
- 6) The conductors are wrapped with Class B Mylar film after double layer epoxy paint.
- 7) The conductors are EC-Grade and 34 m/mm<sup>2</sup> for Aluminum and 56 m/mm<sup>2</sup> ohm for Copper.
- 8) Protection Class IP 55/ IP 67 can be produced upon request.
- 9) Bolt-On type tap off box at points are up to 1000A.
- 10) Conductor surfaces are tin plated and tap off box contact elements are silver plated.

HP-K



## Technical Data

### ELECTRICAL CHARACTERISTIC VALUES

For 60hz the result is multiplied by 0.83.

$$DV\% = \frac{D \times t \times I_b \times L}{U_e} \times 100$$

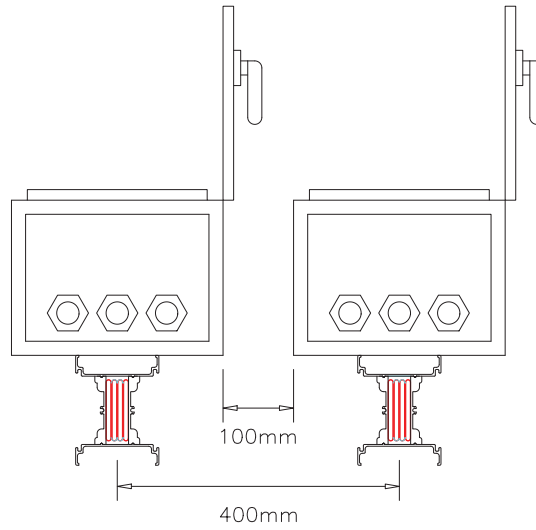
#### ALUMINUM

Nominal	Impedance x 10-3 Ω/m phase to neutral			Power Factor %								
	R	X	Z	1	0,9	0,8	0,7	0,6	0,5	0,4	0,3	
Current												
400A	6,99	3,9	8,01	9,67	11,1	11	10,6	10,1	9,51	8,81	8,05	
500A	6,99	3,9	8,01	9,67	11,1	11	10,6	10,1	9,51	8,81	8,05	
630A	6,99	3,9	8,01	9,67	11,1	11	10,6	10,1	9,51	8,81	8,05	
800A	6,5	2,31	6,9	11,2	11,2	11,4	10,7	9,94	9,08	8,16	7,18	
1000A	5,2	2,07	5,6	10,7	11,5	11,2	10,6	9,91	9,11	8,25	7,33	
1250A	3,5	1,72	3,9	8,17	11,3	12	12,2	12,2	12	11,6	11,1	
1350A	3,1	1,62	3,5	8,58	11,9	12,7	12,9	12,9	12,7	12,3	11,8	
1600A	2,5	1,28	2,9	8,65	9,71	9,57	9,21	8,73	8,16	7,51	6,81	
2000A	1,9	0,43	1,95	8,21	8,2	7,68	7,08	6,41	5,71	4,99	4,23	
2500A	1,5	0,68	1,65	7,78	8,54	8,34	7,96	7,49	6,94	6,34	5,7	
2500A	1,4	0,14	1,45	9,68	9,14	8,33	7,47	6,58	5,68	4,76	3,83	
3000A	1,15	0,37	1,21	6,03	6,90	7,74	8,52	9,24	9,87	10,34	9,94	
3200A	1,02	0,33	1,08	6,49	7,43	8,32	9,15	9,92	10,58	11,08	10,63	
4000A	5,2	2,07	5,6	10,7	11,5	7,68	7,08	6,41	5,71	4,99	4,23	
5000A	2,5	1,28	2,9	8,65	9,71	11,4	10,7	9,94	9,08	8,16	7,18	
6300A	3,5	1,8	3,5	8,65	9,71	11,4	10,7	9,94	9,08	8,16	7,18	

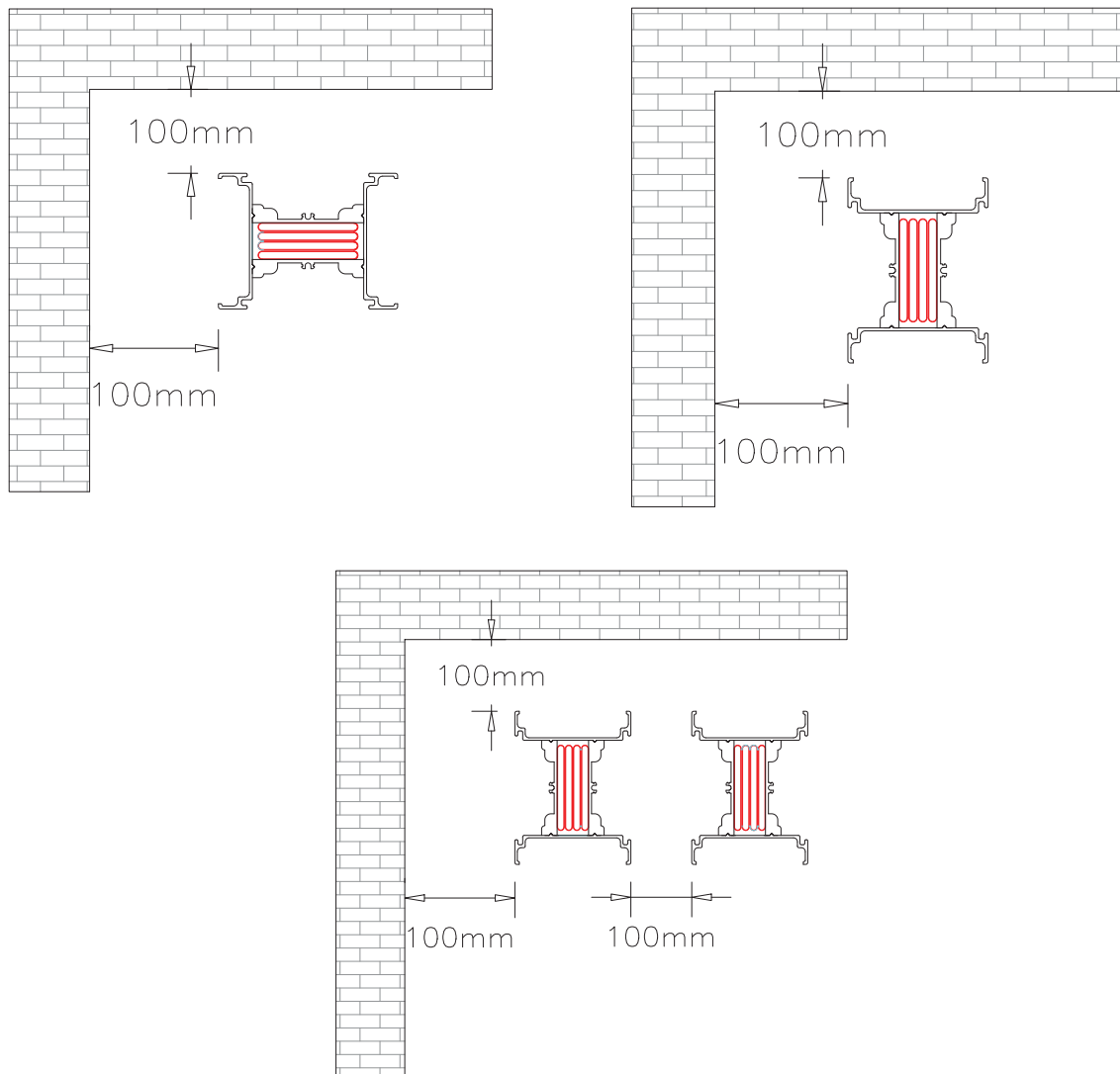
#### COPPER

Nominal	Impedance x 10-5 Ω/m phase to neutral			Power Factor %								
	R	X	Z	1	0,9	0,8	0,7	0,6	0,5	0,4	0,3	
Current												
550A	8,91	4,12	9,01	11,1	12,4	12,4	12,7	12,6	12,3	12,9	12,2	
650A	8,91	4,12	9,01	11,1	12,4	12,4	12,7	12,6	12,3	12,9	12,2	
800A	8,91	4,12	9,01	11,1	12,4	12,4	12,7	12,6	12,3	12,9	12,2	
1000A	6,1	2,24	6,5	8,44	8,15	7,68	7,51	7,92	8,01	8,12	7,98	
1250A	4,5	2,98	5,4	7,47	8,21	7,41	7,31	7,81	8,13	8,1	7,82	
1350A	4,1	1,85	4,5	6,22	8,29	7,12	7,12	7,51	8,53	10,1	8,9	
1600A	3,3	1,88	3,8	5,25	8,31	7,01	6,91	7,35	8,51	9,25	9,12	
2000A	2,5	1,61	3,01	4,16	8,01	6,98	6,15	7,12	7,03	8,63	10,1	
2250A	2	1,13	2,3	3,18	8,11	7,11	6,03	7,09	6,9	7,61	5,72	
2500A	1,5	1,08	1,85	2,56	8,61	7,05	6,19	7,38	7,12	6,98	4,02	
2000A	1,3	0,74	1,5	2,07	8,55	7,81	6,25	7,49	6,01	5,91	5,51	
2500A	1	0,45	1,1	1,52	8,38	7,03	6,12	7,01	5,15	4,51	3,41	
3300A	0,80	0,45	0,91	6,92	7,57	8,17	8,69	9,11	9,41	9,48	8,02	
3600A	0,62	0,35	0,71	6,71	7,34	7,91	8,42	8,83	9,12	9,18	8,02	
4000A	5,2	2,07	5,6	10,7	11,5	8,33	7,47	6,58	5,68	4,76	3,83	
4250A	2,5	1,28	2,9	8,65	9,71	7,68	7,08	6,41	5,71	4,99	4,23	
5000A	1,4	0,14	1,45	9,68	9,14	9,57	9,21	8,73	8,16	7,51	6,81	
6300A	6,5	2,31	6,9	11,2	11,2	11,4	10,7	9,94	9,08	8,16	7,18	

### Recommended Spaces Between Two Lines



### Sample Layout in Busbar High- Rise Buildings



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## ALUMINUM BUSBAR SIZES AND WEIGHTS

AMPER CLASS	BUSBAR MM		CONDUCTOR/SECTION				FEEDER KG/MT					
	W	H	MM		FIG.	3p3w+pe	3p4w+pe					
400A	118	102	1	6	X	25	1	5.87	6.22			
500A	118	102				30	1	6.18	6.61			
630A	118	102				40	1	6.82	7.49			
800A	118	118				55	1	8.13	8.93			
1000A	118	142				80	1	10.25	11.25			
1250A	118	172				110	1	12.66	13.84			
1350A	118	187				125	1	13.86	15.06			
1600A	118	222				160	1	16.67	19.17			
2000A	118	262				200	1	19.90	23			
2500A	118	312				250	1	23.89	27.81			
2500A	118	329	2	6	X	110	2	24.73	28.16			
3000A	118	389				140	2	29.58	33.95			
3200A	118	429				160	2	32.76	37.76			
4000A	118	509				200	2	39.21	45.47			
5000A	118	609				250	2	40.90	47.8			
6300A	118	757				3	6	X	200	3	61.05	70.2
									200	3	61.05	70.2

## COPPER BUSBAR SIZES AND WEIGHTS

AMPER CLASS	BUSBAR MM		CONDUCTOR/SECTION				FEEDER KG/MT		
	W	H	MM		FIG.	3p3w+pe	3p4w+pe		
550A	118	102	1	6	X	25	1	9.3	10.55
650A	118	102				30	1	10.35	11.84
800A	118	102				40	1	12.34	14.32
1000A	118	118				55	1	15.44	15.7
1250A	118	132				70	1	20.5	23.62
1350A	118	142				80	1	21.68	25.78
1600A	118	157				95	1	25	29
2000A	118	187				125	1	31.83	38.27
2250A	118	222				160	1	39.72	48
2500A	118	262				200	1	48.76	59.15
2000A	118	219	2	6	X	55	1	31.65	35.34
2500A	118	249				70	2	38.71	45.87
3300A	118	329				110	2	56.4	67.73
3600A	118	359				125	2	63.1	76.1
4000A	118	389				140	2	69.87	84.33
4250A	118	429				160	2	78.95	95.5
5000A	118	509				200	2	97.03	117.75
6300A	118	636	3	6	X	160	3	145.3	176.35

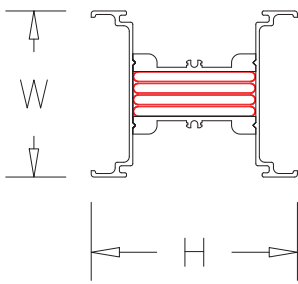


FIG 1

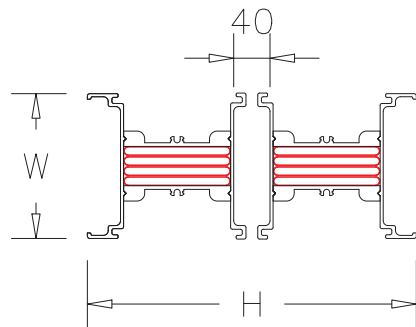


FIG 2

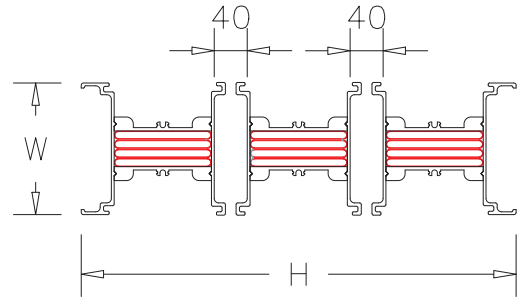


FIG 3

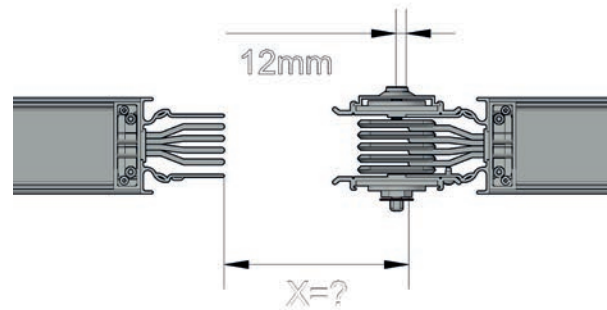
## Special Length Measures

### SPECIAL LENGTH DIMENSIONS OF THE TWO BUSBAR

X: measured length

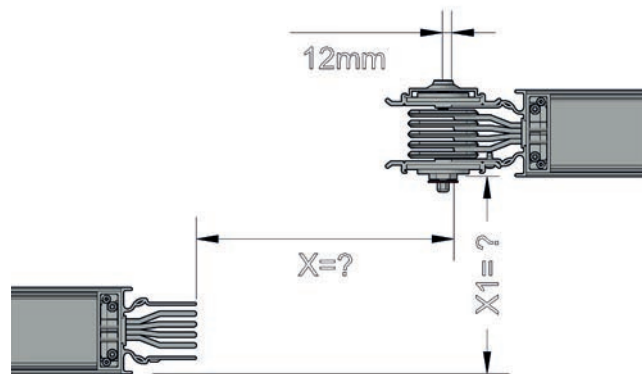
Example

X=1000 mm Additional block spacing is 24 mm.  
 $1000-24=976$  mm  
 Order size: 976mm



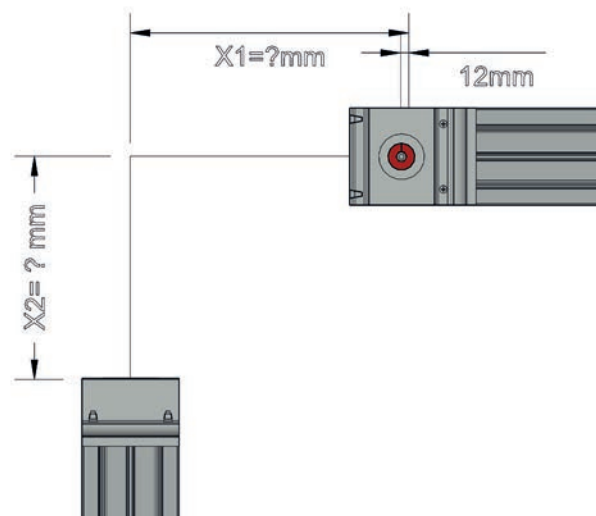
### DOUBLE VERTICAL ELBOW MEASUREMENT

X dimensions joint block = 24 mm  
 The X1 dimension should be taken from the busbar body edge to the other busbar housing edge.



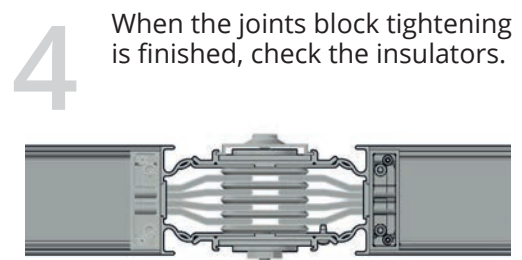
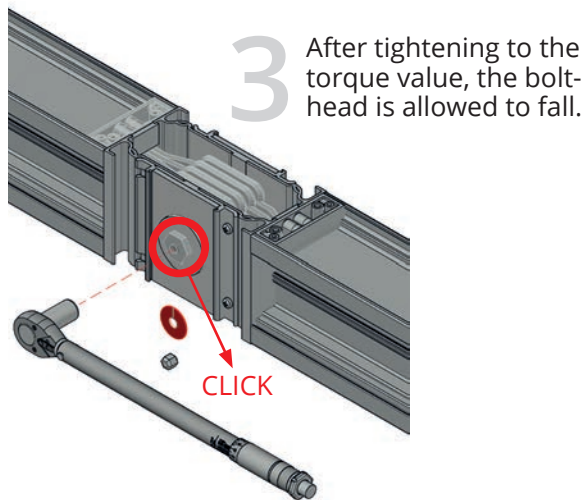
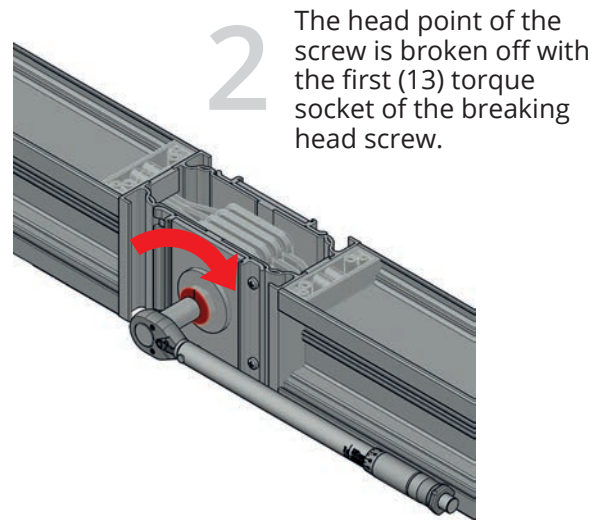
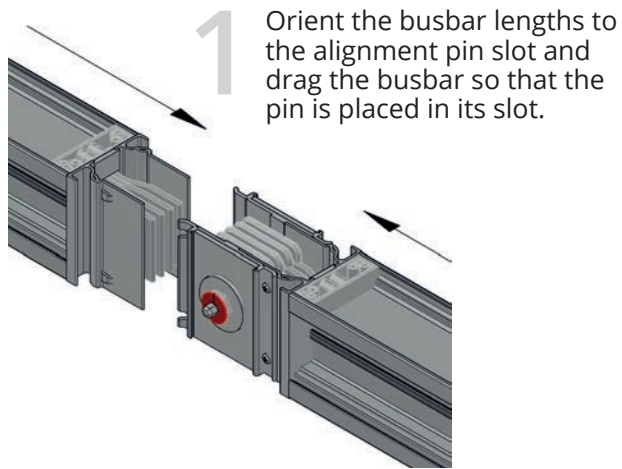
### HORIZONTAL ELBOW MEASUREMENT

X dimensions additional block = 24 mm  
 The X1 dimension should be taken from the busbar body edge to the other busbar body edge.

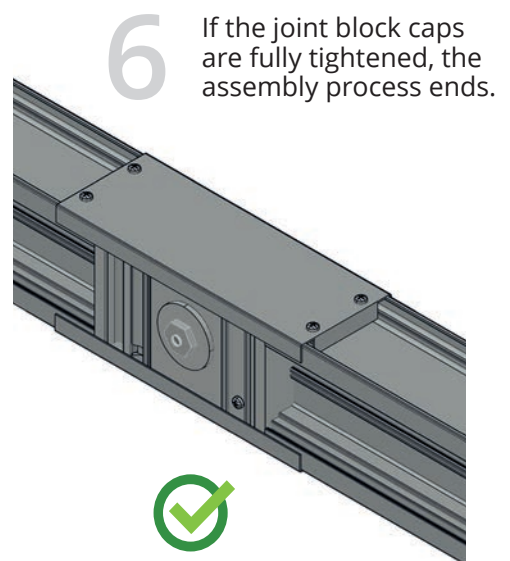
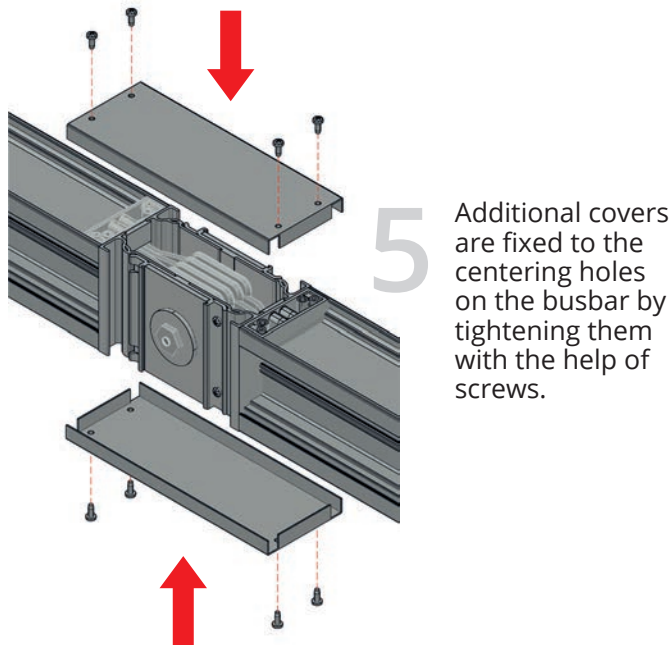


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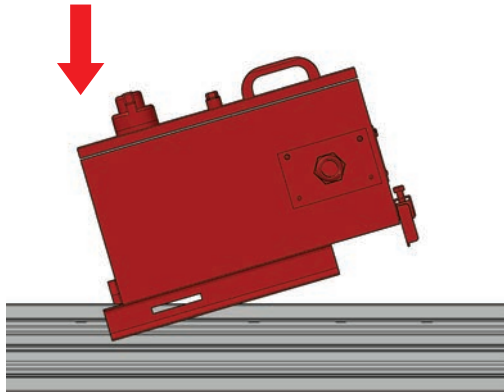
# Installation



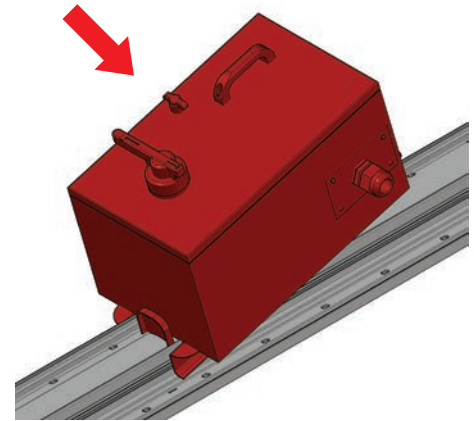
Joint block tightening value is around 60 lbft (80 Nm).



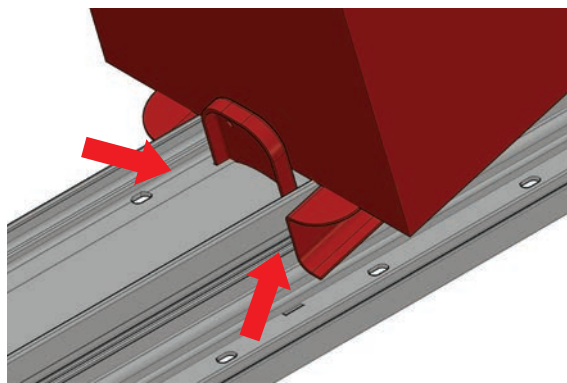
## Tap-Off Box Installation



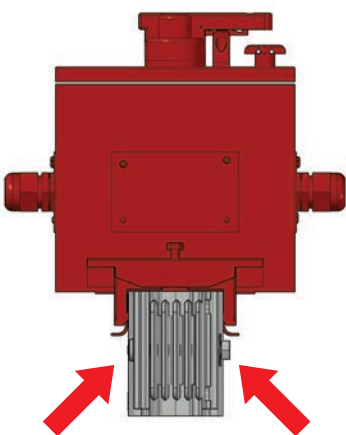
**1** While mounting the box, pay attention to the hook at the bottom input part of the output box and mount it to the body.



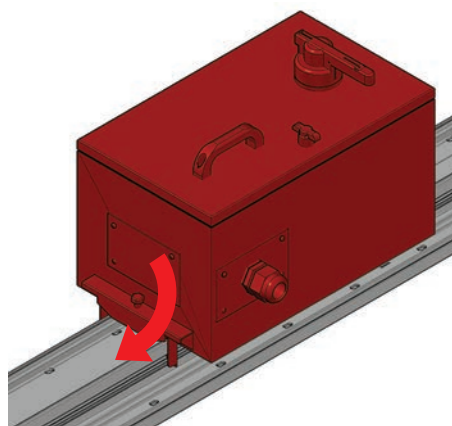
**2** The tap-off box is pressed from the top to fit the busbar.



**3** Check that the output box is attached to the busbar body with the help of hook system.

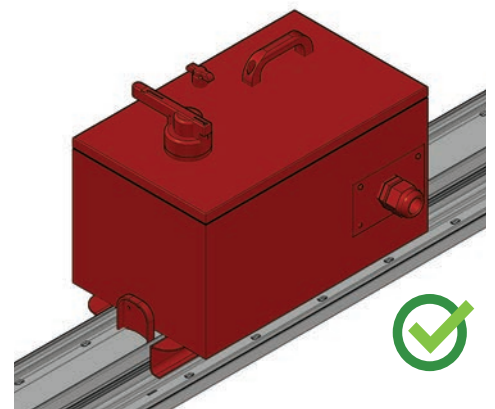


**4** It is mounted by screwing the box to the busbar body with the help of a clamp system.



**5** It is fixed to the body by tightening the clamp.

**6** Activate the tap-off box by means of a special mechanism. When the mechanism is in (OFF), it is energized when the cover is in the "ON" position.



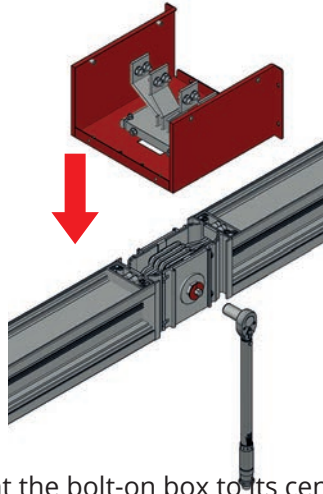
NOTE: In the (ON) position for safety reasons, the box cover is prevented from being opened by the mechanism.

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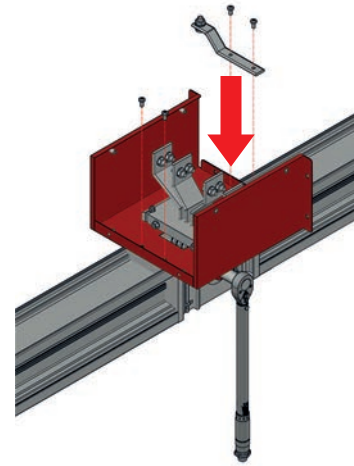
## Bolt-On Installation

1



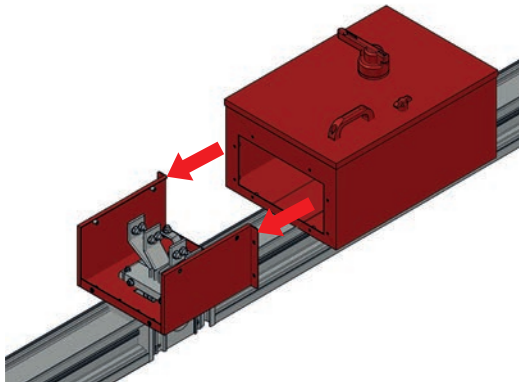
Orient the bolt-on box to its center without tightening the busbar joint point, then place the box and tighten the joint block.

2



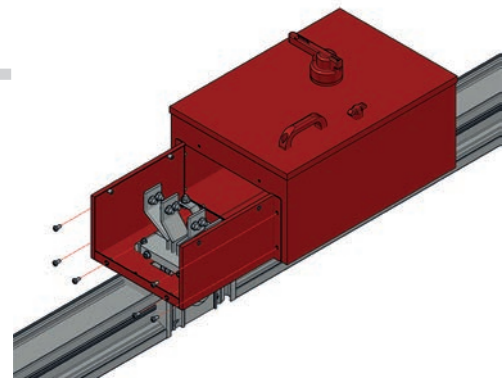
After tightening the bolt-on box to the joint, mount the grounding conductor as shown in the figure.

3



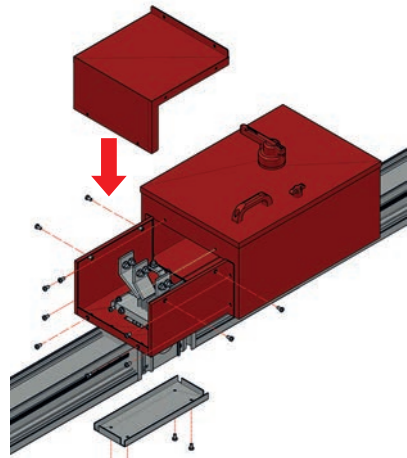
To complete the bolt-on assembly, place the joint box on the busbar and slide it towards the joint point.

4



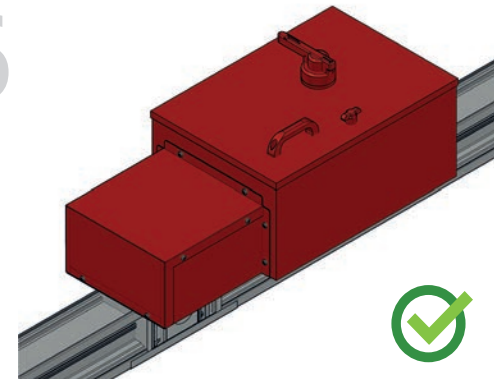
Tighten the joint box and bolt-on with M6x12 screws.

5



Fix the bolt-on cover. Then connect the busbar additional cover. Tighten with M6x12 screw.

6



After the bolt-on cover is installed, the assembly process ends.



# **QUALITY STANDARDS**

## CE DECLARATION OF CONFORMITY

**Product Group** HP-K Busbar Enerji Dağıtım Sistemleri

**Manufacturer** DTM Elektroteknik San. ve Tic. A.Ş.  
Çatalmeşe mah.Sultansuyu cad. No:129  
34794 Çekmeköy / İstanbul

We confirm that the above-mentioned product or product group produced in DTM Facilities complies with the following Standards and regulations.

### Standard

#### TS EN 61439-6

Low voltage switchgear and controller equipment  
Part 2: Equipment for power distribution in public networks

### CE-Regulation

(2006/95/AT) "Regulation on electrical equipment designed to be used within certain voltage limits"

### DATE

15.01.2015

DTM Elektroteknik A.Ş.



### DTM Elektroteknik San. Tic. A.Ş.

Çatalmeşe Mah. Sultansuyu Cad. No:129 34794 Çekmeköy /İstanbul  
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Quality

NOTES

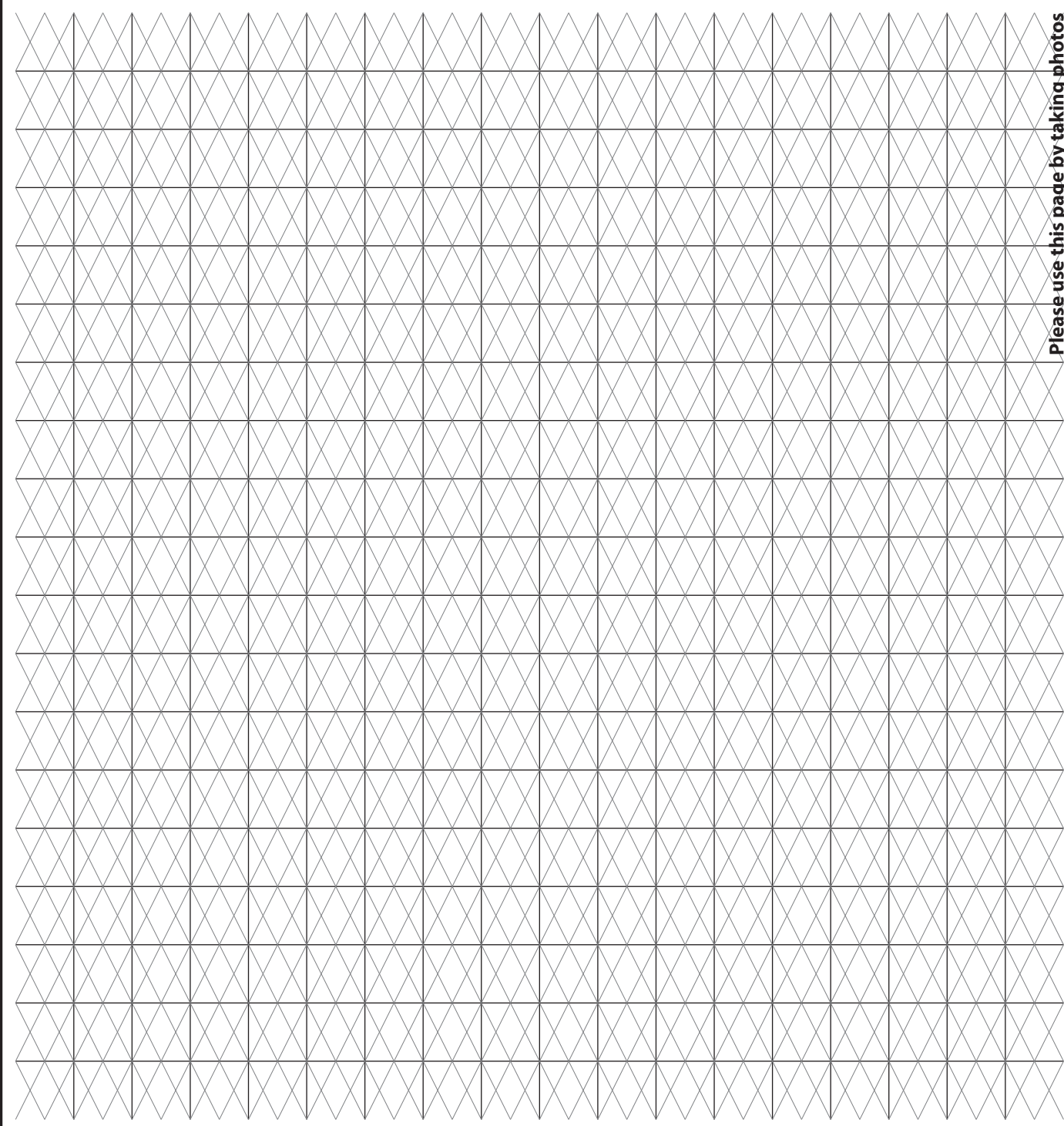


# BILL OF QUANTITY

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			PROJECT	

PROJECT NO	
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