




ENYSTAR®

Distribution board up to 250 A with door

- combinable enclosure system
- degree of protection IP 65
- made of high-quality thermoplastic
- protection class II, 
- in accordance with IEC 60 439-3

Design fast, simply, more clever
www.ENYGUIDE.eu

Assembly movie





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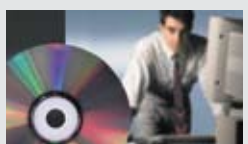
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For additional information and planning aids (e. g. CAD Parts library of signs and symbols) please refer to the digital catalogue as well as in the InterNet at www.hensel-electric.de



Combinable enclosure system with doors



Easy operation of the devices behind a door with protection against accidental contact.



Quick assembly




Facilities for earth connection according to British Standard

Distribution boards with door up to 250 A

combinable enclosure system from high-quality thermoplastic, degree of protection IP 65 in accordance with IEC 60 439-3

Distribution boards up to 250 A with door

- for indoor and protected outdoor installation
- dust-proof and protected against water (IP 65)
- protection class II 
- colour: grey, RAL 7035

Doors

- all enclosure sizes with door
- transparent and opaque
- door hinge changeable
- sealable
- locking facilities: lockable, door fasteners for tool and hand operation
- operation of the devices behind the door protected with covers
- no overhangig handles

Quick assembly

- closed or open enclosure walls, which can fast and easily be closed with closing plate sets
- integrated gaskets
- safe connectors

Pre-assembled enclosures with electrical functions

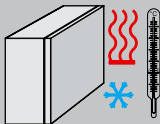

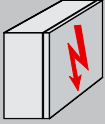

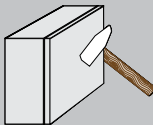
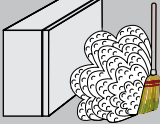

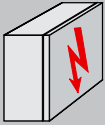
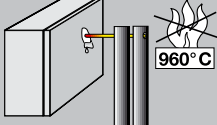
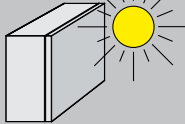

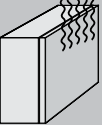
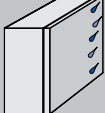
- electrical functions in enclosures with protection covers
- Connection Box for installation of devices that must be operated externally, such as plug devices, pushbuttons and switches
- EMC compliant busbar system
- N conductors with the same current carrying capacity as the phase conductors
- bus-mounted fusegear
- cable entry via flanges up to 72 mm cable diameter



As standard busbar system EMC-compliant with N/PEN conductor in the area of phase conductors and with the same current carrying capacity as the phase conductors.

ENYSTAR Distributors with removable DIN rail rack and cable entry for earthing armoured cables according to British Standards

- fast and easy external mounting and wiring of DIN rail equipment outside the box
- facilities for earth connection according to British Standards
- cable entry for armoured cables via metal glands for earth connections

 Ambient conditions	<p>Ambient temperature</p> <ul style="list-style-type: none"> ■ for empty enclosures: - 25°C up to + 70° C ■ for distribution boards ¹⁾ in accordance with IEC 60 439-3: -5° C up to 35° C, max. + 40° C <p>Relative humidity: 50% at 40° C, 100% at 25° C</p> <p>¹⁾ The ambient temperature for distribution boards is reduced by the installed equipment technology!</p>
 Application area	<p>The enclosures are suitable for the protected outdoor installation - harsh environment and / or protected outdoor.</p> <p>However the climatic influences and effects on the equipment are to be considered.</p>
 Insulation	<p>Insulated enclosures (Protection class II) </p>
 Impact strength	<p>degree of protection against mechanical load IK 08 (5 Joule) in accordance with IEC 62 262</p>
 Protection against foreign solid objects and direct contact	<p>Dust-proof degree of protection IP 65</p>
 Protection against ingress of water with harmful effects	<p>Protected against water jets degree of protection IP 65</p>
 Electrical parameters	<p>Rated current: 250 A Rated insulation voltage: AC 690 V, DC 1000 V ²⁾, IEC 60 664</p> <p>²⁾ the rated insulation voltage is possibly reduced by the installed equipment technology</p>
	<p>material: thermoplastic</p>
 Burning behaviour	<p>Glow wire test 960°C in accordance with IEC 60 695-2-11 flame-retardant, self-extinguishing UL Subject 94, V-2</p>
 UV resistance	<p>The material is examined and therefore qualified for outdoor installation (harsh environment and / or outdoor) during direct sun radiation</p>
 Chemical resistance	<p>Resistance against acid 10% and alkaline 10%, petrol and mineral oil</p>
 Toxic behaviour	<p>Silicone- and halogen-free</p>
 Resistance to corrosion	<p>Material resistant against corrosion from ambient humidity or from industrial processes</p>

Dependent on the system

Dependent on material

Combinable enclosures with door and closing plates

- 4 box sizes:
276 x 186 mm,
276 x 366 mm,
276 x 546 mm and
546 x 366 mm
- fast and easy to assemble to larger combinations after removing flanges and closing plates



Empty enclosures with closing plates for wall openings.



Empty enclosure as single enclosure with closed walls.



Circuit breaker boxes with closing plates for wall openings.



Circuit breaker box as single enclosure with closed walls.

Wide range of accessories:

- DIN rails or mounting plates for the installation of electrical equipment
- covers for equipment installation
- terminals

Multipurpose high quality enclosure system

Wide range of accessories:
- different kind of flanges for cable entry up to 72 mm cable diameter

Enclosures usable as single enclosures with door and closed walls

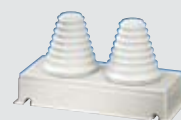
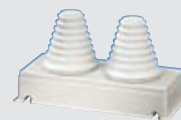
or

combinable to larger combinations in all directions after removing flanges and closing plates



Doors:
transparent or opaque
left or right hinged,
changeable

- Wide range of accessories:
- different kind of flanges for cable entry up to 72 mm cable diameter
 - DIN rails or mounting plates for equipment assembly
 - covers for installation of equipment
 - terminals





Combinable distribution boards with door (functional enclosures)



Empty boxes



Circuit breaker boxes



KWH meter boxes



HRC fuse boxes with fuse switch disconnectors



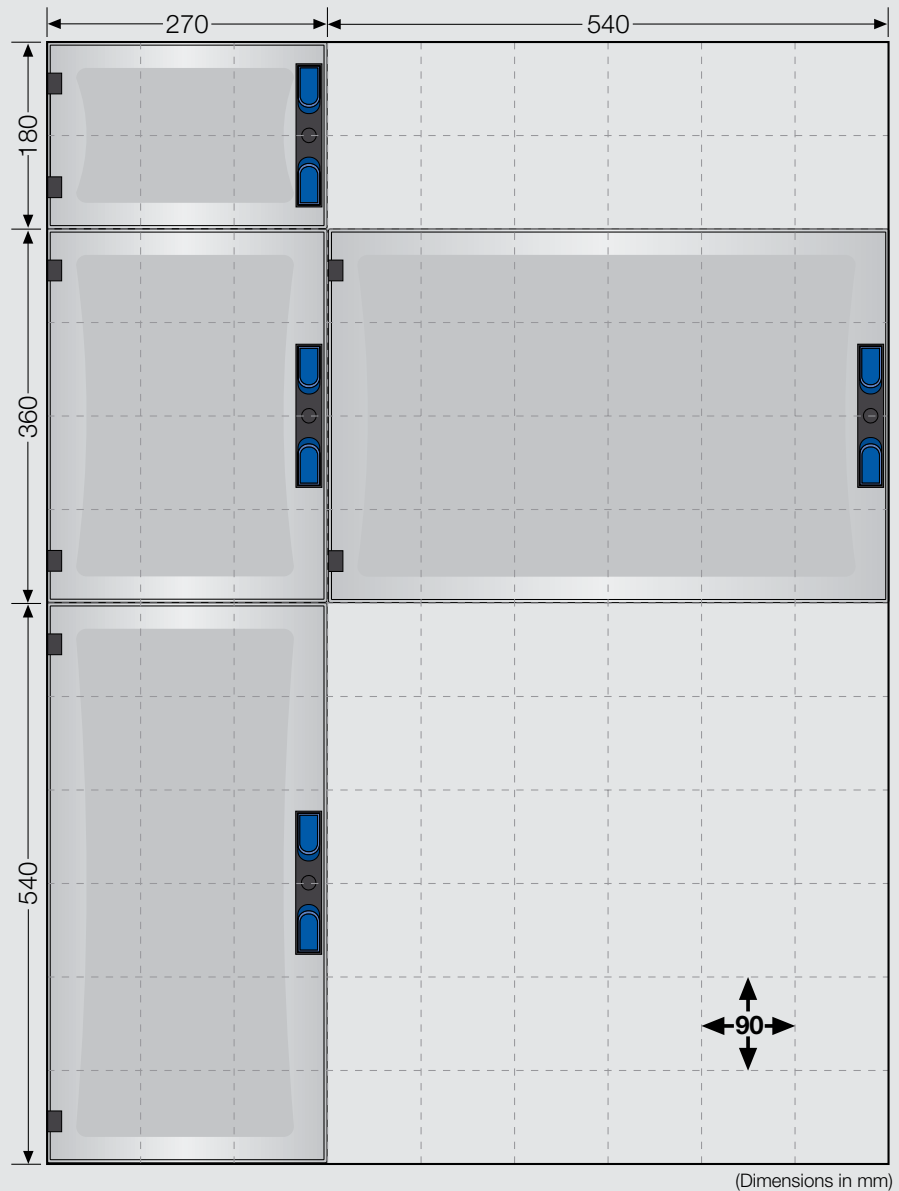
Busbar boxes



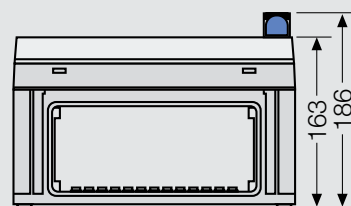
HRC fuse boxes with fuse switch disconnectors



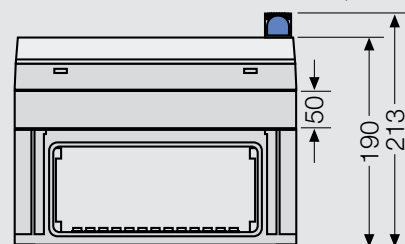
Isolator boxes with built-in switch disconnectors and MCCB circuit-breaker boxes



(Dimensions in mm)



Standard enclosure depth for all enclosure sizes



Extension frame for extending installation depths by 50 mm

Combinable distribution boards with door

- modular structure of enclosures in grid of 90 mm
- 4 enclosure sizes:
270 x 180 mm,
270 x 360 mm,
270 x 540 mm and
540 x 360 mm
- to assemble fast and simply to larger combinations
- Order closing plate sets, single closing plates and flanges separately.



**Can be combined and extended
on all sides**



Because of the increasing requirements flexibility is essential in the electrical installation.

ENYSTAR enclosures can be combined and arranged freely in order to adapt the system flexibly to the individual requirements in site:

Combination next to each other or one above the other.



Combination of enclosures
in horizontal direction.



The same enclosures
combined
in vertical
direction.

ENYSTAR® Connection Box

The ENYSTAR Connection Box allows a simple and fast installation of devices, that must be operated externally. Such as plug devices, pushbuttons, switches or also Touch panels.

The new Connection Box is installed like the remaining system via safe plug connectors.

The new ENYSTAR Connection Box is available in different designs and standard equipments.

Large doors for all box sizes allow a simple accessibility of the electrical functions.



Distribution board with
72 modules (6 x 12 x 18 mm)
built-up of 2 x FP 1318
with closing plates



Distribution board with 125 A feeding,
36 modules (3 x 12 x 18 mm) and
a terminal box for PE and N

**Combinable and extendable
in all directions**

Application examples

ENYSTAR distribution board
with protection devices or cables
and equipment



**ENYSTAR distribution board with
DIN-rail and IT equipment**

Enclosure solutions for IT infrastructure,
with routers, switches or small PLC.



Distribution boards are usually used in working place proximity. Their application is various. Here the demands and requirements that result from the installation site must be adhered to.

General requirements concerning distribution boards:

1. Clear separation between operation area and distribution area

For areas in distribution boards to which unskilled persons have access standards require special protective measures:

- Life parts are to be protected against accidental contact by a cover.
- Devices, which may be operated only by an electrical skilled person, are to be arranged in a separate area, which is to be opened only with tool.

2. Fast and safe operating of the intended devices, e.g. series built-in equipment and switching devices

3. No removable covers or parts

so that electrotechnical unskilled persons can easily operate.

Additional specific requirements when used in commercial and industrial applications:

1. High degree of protection IP 65

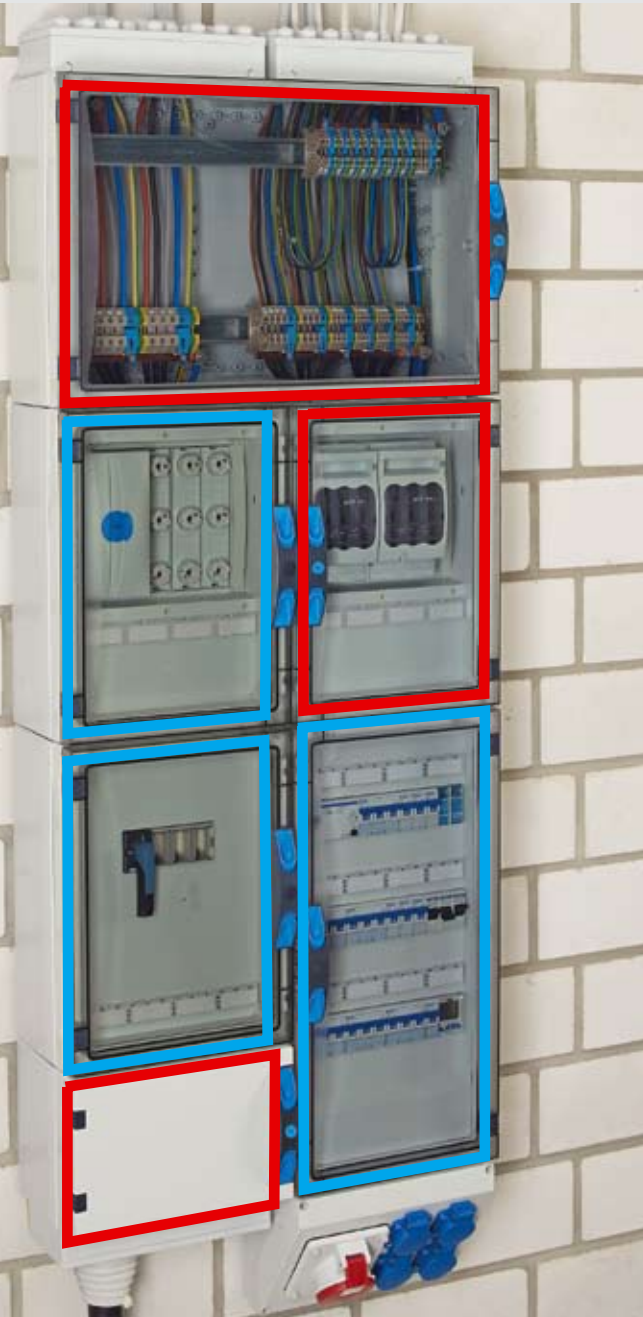
dust-proof and waterproof

2. Robust material for use in rough environments

high-quality thermoplastic material for high mechanical loads.


3. Corrosion resistance

Material resistant to corrosion by atmospheric humidity or industrial processes.



Modular distribution boards for the special requirements in trade and industry ...



- Total insulated enclosures, protection class II 
- High degree of protection IP 65: dust-proof and water-proof
- Corrosion-resistant enclosures by high-quality thermoplastic material
- High mechanical strength IK 08 for heavy duty usage in commercial and industrial applications

... and also clearly separated functional areas!

- Modular design for clear separation of the access and operation areas for electrical skilled persons and unskilled persons.
- Large, transparent doors for a quick control and convenient operation of the built-in equipment
- Fast opening and closing of the doors in a single operation
- At any time an expandable, modular system

Access and operation only by electrical skilled persons



To the following areas **only an electrical skilled person** may have access:

- feeding-in
- back-up fuse
- outgoing terminals.

Therefore access is possible **only with appropriate tools**. The access can be prevented by optionally lockable doors. Electrotechnical unskilled persons have no access here.

Access is usually necessary only with first or post installation, with maintenance work or examinations!

Operation also by electrotechnical unskilled persons



To areas with installation equipment, like series built-in equipment, fuses up to 63 A, circuit-breakers and IT-components the user **as an unskilled person** is to have a fast access.

Here devices must be operated directly to keep operating interruptions as short as possible.

Therefore the devices are behind a door, which can be opened fast and simply **by hand**.

- In areas with these devices a **protection against direct contact with hazardous live parts IP XXC** is required for the operator. All live parts are covered.

Circuit breaker boxes
for devices up to 63 A
with PE and N terminals
 pages 182 - 185

FP 1109
 1x9x18 mm
new

FP 1108
 1x9x18 mm
 with closing plates

FP 1219
 2x12x18 mm
new

FP 1218
 2x12x18 mm
 with closing plates

FP 1319
 3x12x18 mm
new

FP 1318
 3x12x18 mm
 with closing plates

FP 1409
 2x27x18 mm
new

FP 1408
 2x27x18 mm
 with closing plates

FP 1418
 3x17x18 mm
 with closing plates

FP 1211
 1x12x18 mm
 for miniature circuit
 breakers (MCB)

Circuit breaker boxes for the installation of DIN rail equipment in accordance with DIN 43 880 from 9 up to 54 modules.

Circuit breaker boxes
for devices up to 63 A
without PE and N terminals
 pages 186

FP 1105
 1x12x18 mm

FP 1215
 2x12x18 mm

FP 1315
 3x12x18 mm

FP 1415
 2x27x18 mm

Circuit breaker boxes for the installation of DIN rail equipment in accordance with DIN 43 880 from 9 up to 54 modules.

Circuit breaker boxes
for devices up to 63 A
with removable DIN rail rack
without PE and N terminals
 pages 187 - 189

FP 1106
 1x9x18 mm

FP 1107
 1x9x18 mm
 with closing plates

FP 1216
 2x12x18 mm

FP 1217
 2x12x18 mm
 with closing plates

FP 1316
 3x12x18 mm

FP 1317
 3x12x18 mm
 with closing plates

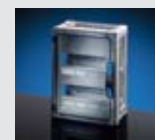
FP 1406
 2x27x18 mm

FP 1417
 3x17x18 mm
 with closing plates


Removable DIN rail rack for e.g. earth connection (British standard).

Circuit breaker boxes for the installation of DIN rail equipment in accordance with DIN 43 880 from 9 up to 54 modules.

Circuit breaker boxes
for devices up to 100 A
without PE and N terminals
 pages 190 - 191

FP 1101
 1x12x18 mm

FP 1249
 2x12x18 mm
new

FP 1349
 3x12x18 mm
new

FP 1439
 2x27x18 mm
new

FP 1211
 1x12x18 mm
 for miniature circuit
 breakers (MCB)
**with PE and
 N terminals**

FP 1100
 terminal box
new

Circuit breaker boxes for the installation of DIN rail equipment in accordance with DIN 43 880 from 9 up to 54 modules.

KWH meter boxes

page 192



FP 2211
with support
for 1 meter



FP 2212
with support
for 1 electronic
consumer meter
(eHz)



FP 2213
with support
for 2 electronic
consumer meters
(eHz)



FP 2312
with support
for 2 meters or
1 meter + 1 DIN rail

KWH meter boxes for the use in
unmetered area after consultation with
local power supply companies.
Meter boxes sealable.

Isolator boxes

pages 199 - 201



FP 5101 63 A
3-pole, PE + N



FP 5103 63 A
4-pole + PE



FP 5102 100 A
3-pole, PE + N



FP 5104 100 A
4-pole + PE



FP 5201
125 A
3-pole, PE + N
new



FP 5202
125 A
4-pole, PE
new



FP 5211
160 A
3-pole, PE + N



FP 5213
160 A
4-pole + PE



FP 5312
250 A
3-pole, PE + Na

Isolator boxes with built-in switch
disconnectors in accordance with
IEC 60 947-3



**Customised
solutions?
Contact us!**

**Empty enclosures
with transparent door**

pages 178 - 179


FP 0100
mounting
dimensions
220x130x140 mm

FP 0101
mounting
dimensions
220x130x140 mm
with closing plates

FP 0210
mounting
dimensions
220x310x140 mm

FP 0211
mounting
dimensions
220x310x140 mm
with closing plates

FP 0310
mounting
dimensions
220x490x140 mm

FP 0311
mounting
dimensions
220x490x140 mm
with closing plates

FP 0400
mounting
dimensions
490x310x140 mm

FP 0401
mounting
dimensions
490x310x140 mm
with closing plates

FP 0411
mounting
dimensions
310x490x140 mm
with closing plates

Empty boxes for the installation of different electrical devices either directly over attachments in the bottom or on DIN rails or mounting plates.

**Empty enclosures
with opaque door**

pages 180 - 181


FP 0120
mounting
dimensions
220x130x140 mm

FP 0121
mounting
dimensions
220x130x140 mm
with closing plates

FP 0230
mounting
dimensions
220x310x140 mm

FP 0231
mounting
dimensions
220x310x140 mm
with closing plates

FP 0330
mounting
dimensions
220x490x140 mm

FP 0331
mounting
dimensions
220x490x140 mm
with closing plates

FP 0420
mounting
dimensions
490x310x140 mm

FP 0421
mounting
dimensions
490x310x140 mm
with closing plates

FP 0431
mounting
dimensions
310x490x140 mm
with closing plates

Empty boxes for the installation of different electrical devices either directly over attachments in the bottom or on DIN rails or mounting plates.

**Busbar boxes
with device equipping**

page 193

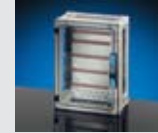

FP 3226
250 A, 5-pole
1 NH 00C
with terminals
for direct busbar
connections

FP 3426
250 A, 5-pole
2 NH 00C
with terminals
for direct busbar
connections

As standard EMC compliant busbar system: with N/PEN conductor in the area of phase conductors and with the same current carrying capacity as the phase conductors.

Busbar boxes

page 194 - 195


FP 3212
250 A, 5-pole

FP 3402
250 A, 5-pole

FP AP 21
cover for fusegear
space units: 12

FP AP 41
cover for fusegear
space units:
10 + 16

FP BA 70
blanking cover
H 160 x B 126 mm
space units: 7

NH RT 00C
HRC 00C bus-
mounted fuse
switch disconnect-
tor, 3-pole, 125 A
space units: 5

ZS RS 18
D0 2 bus-mounted
fuse base 63 A
space units: 2

As standard EMC compliant busbar system: with N/PEN conductor in the area of phase conductors and with the same current carrying capacity as the phase conductors.

HRC fuse boxes with fuse switch disconnecter

page 198



FP 4211
1xHRC 00C, 125 A
3-pole, PE + N



FP 4212
2xHRC 00C, 125 A
3-pole, PE + N



FP 4312
1xHRC 1, 250 A
3-pole, PE + N

HRC fuse boxes with fuse switch disconnectors in accordance with IEC 60 947-3

MCCB circuit-breaker boxes

page 202



FP 5216
160 A
3-pole, PE + N



FP 5325
250 A
3-pole, PE + N

MCCB circuit-breaker boxes with circuit-breaker in accordance with IEC 60 947-2, MCCB with overload and short-circuit release



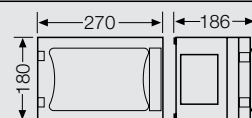
**Customised solutions?
Contact us!**

- door fastener with tool operation
- door locking sealable
- please order DIN rails, mounting plates or covers additionally

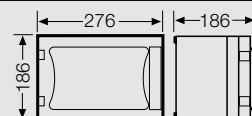
- material: thermoplastic
- colour: grey, RAL 7035



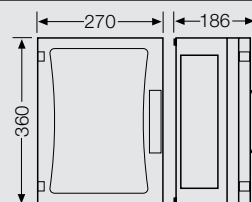
FP 0100	box size 1
max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order closing plate sets, single closing plates and flanges separately	



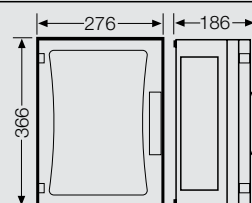
FP 0101	box size 1
with closing plates max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order flanges separately degree of protection IP 65	



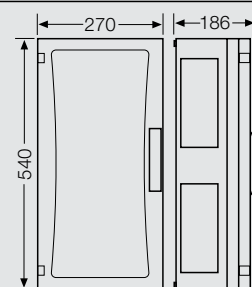
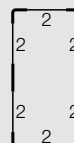
FP 0210	box size 2
max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order closing plate sets, single closing plates and flanges separately	



FP 0211	box size 2
with closing plates max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order flanges separately degree of protection IP 65	



FP 0310	box size 3
max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 6 items order closing plate sets, single closing plates and flanges separately	


Box walls

Wall 1 (180 mm)

 Wall opening:
100 x 80 mm

Wall 2 (270 mm)

 Wall opening:
190 x 80 mm

2 x Wall 2 (270 mm)

 Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm

Wall 3 (360 mm)

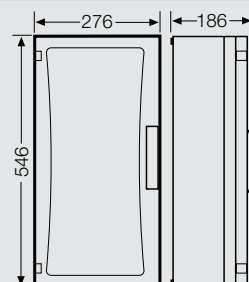
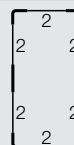
 Wall opening:
280 x 80 mm

- door fastener with tool operation
- Door locking sealable
- please order DIN rails, mounting plates or covers additionally

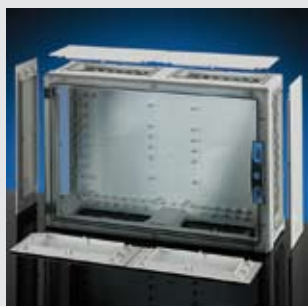
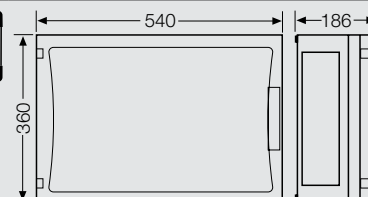
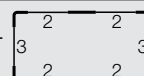
- material: thermoplastic
- colour: grey, RAL 7035


FP 0311 box size 3
with closing plates

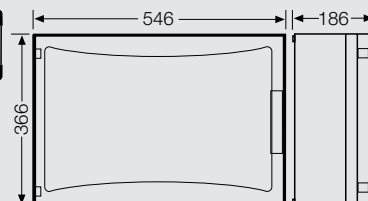
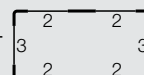
max. installation depth
 with built-in mounting plate 136 mm
 with built-in DIN rail 125 mm
 attached enclosure connectors: 6 items
 order flanges separately
 degree of protection IP 65


FP 0400 box size 4

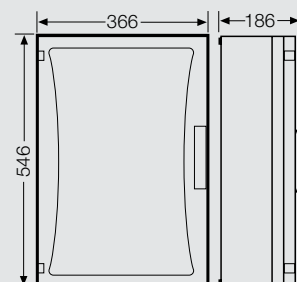
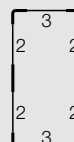
max. installation depth
 with built-in mounting plate 136 mm
 with built-in DIN rail 125 mm
 attached enclosure connectors: 6 items
 order closing plate sets, single closing plates and flanges separately


FP 0401 box size 4
with closing plates

max. installation depth
 with built-in mounting plate 136 mm
 with built-in DIN rail 125 mm
 attached enclosure connectors: 6 items
 order flanges separately
 degree of protection IP 65


FP 0411 box size 4
with closing plates

max. installation depth
 with built-in mounting plate 136 mm
 with built-in DIN rail 125 mm
 attached enclosure connectors: 6 items
 order flanges separately
 degree of protection IP 65



order closing plate sets,
 single closing plates
 and flanges separately


Box walls

Wall 1 (180 mm)

Wall opening:
 100 x 80 mm


Wall 2 (270 mm)

Wall opening:
 190 x 80 mm


2 x Wall 2 (270 mm)

Wall opening:
 190 x 80 mm


Wall 3 (360 mm)

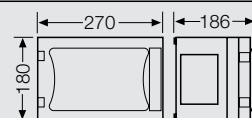
Wall opening:
 280 x 80 mm

- door fastener with tool operation
- Door locking sealable
- please order DIN rails, mounting plates or covers additionally

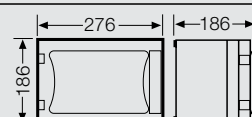
- material: thermoplastic
- colour: grey, RAL 7035



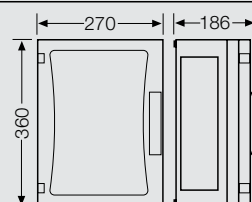
FP 0120	box size 1
max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order closing plate sets, single closing plates and flanges separately	



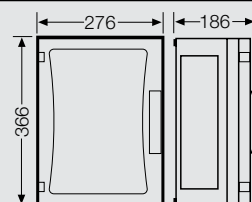
FP 0121	box size 1
with closing plates max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order flanges separately degree of protection IP 65	



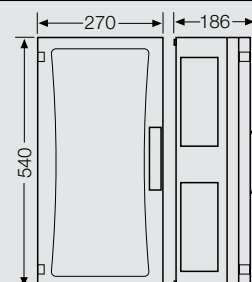
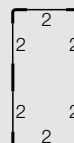
FP 0230	box size 2
max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order closing plate sets, single closing plates and flanges separately	



FP 0231	box size 2
with closing plates max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 4 items order flanges separately degree of protection IP 65	



FP 0330	box size 3
max. installation depth with built-in mounting plate 136 mm with built-in DIN rail 125 mm attached enclosure connectors: 6 items order closing plate sets, single closing plates and flanges separately	


Box walls

Wall 1 (180 mm)

 Wall opening:
100 x 80 mm

Wall 2 (270 mm)

 Wall opening:
190 x 80 mm

2 x Wall 2 (270 mm)

 Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm

Wall 3 (360 mm)

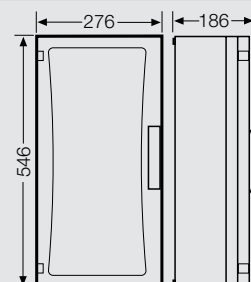
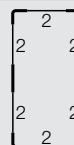
 Wall opening:
280 x 80 mm

- door fastener with tool operation
- Door locking sealable
- please order DIN rails, mounting plates or covers additionally

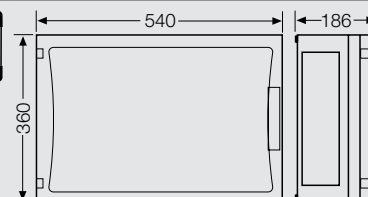
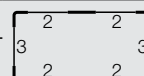
- material: thermoplastic
- colour: grey, RAL 7035


FP 0331 box size 3
with closing plates

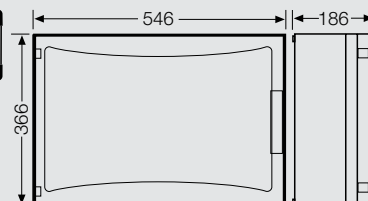
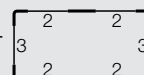
max. installation depth
with built-in mounting plate 136 mm
with built-in DIN rail 125 mm
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65


FP 0420 box size 4

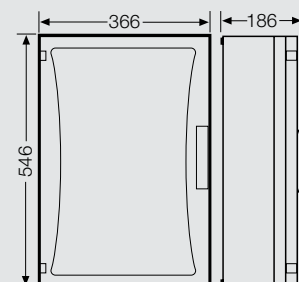
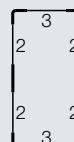
max. installation depth
with built-in mounting plate 136 mm
with built-in DIN rail 125 mm
attached enclosure connectors: 6 items
order closing plate sets, single closing plates and flanges separately


FP 0421 box size 4
with closing plates

max. installation depth
with built-in mounting plate 136 mm
with built-in DIN rail 125 mm
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65


FP 0431 box size 4

max. installation depth
with built-in mounting plate 136 mm
with built-in DIN rail 125 mm
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65



order closing plate sets,
single closing plates
and flanges separately


Box walls

Wall 1 (180 mm)

Wall opening:
100 x 80 mm


Wall 2 (270 mm)

Wall opening:
190 x 80 mm


2 x Wall 2 (270 mm)

Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm


Wall 3 (360 mm)

Wall opening:
280 x 80 mm

Circuit breaker boxes for the installation of DIN rail equipment up to 63 A Operation also by unskilled persons

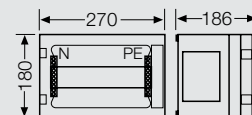
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with PE and N terminals
- FIXCONNECT® terminal technology for PE and N

- material: thermoplastic
- colour: grey, RAL 7035



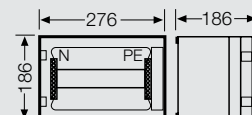
FP 1109 **box size 1** **new**
9 modules: 1 x 9 x 18 mm

1-row
PE+N x cross section
2 x 25 mm², Cu
8 x 4 mm², Cu
attached enclosure connectors: 4 items
order closing plate sets, single closing
plates and flanges separately



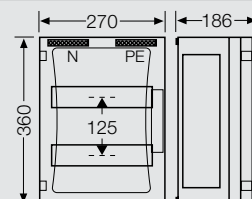
FP 1108 **box size 1**
9 modules: 1 x 9 x 18 mm

with closing plates
1-row
PE+N x cross section
2 x 25 mm², Cu
8 x 4 mm², Cu
attached enclosure connectors: 4 items
order flanges separately
degree of protection IP 65



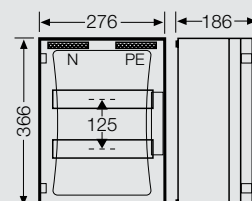
FP 1219 **box size 2** **new**
24 modules: 2 x 12 x 18 mm

2-row
PE+N x cross section
3 x 25 mm², Cu
8 x 4 mm², Cu
attached enclosure connectors: 4 items
order closing plate sets, single closing
plates and flanges separately



FP 1218 **box size 2**
24 modules: 2 x 12 x 18 mm

with closing plates
2-row
PE+N x cross section
3 x 25 mm², Cu
8 x 4 mm², Cu
attached enclosure connectors: 4 items
order flanges separately
degree of protection IP 65



Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm

Circuit breaker boxes for the installation of DIN rail equipment up to 63 A Operation also by unskilled persons

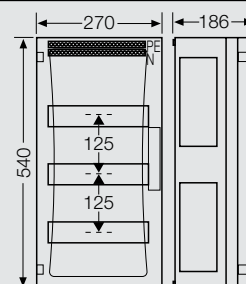
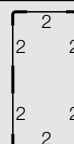
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with PE and N terminals
- FIXCONNECT® terminal technology for PE and N

- material: thermoplastic
- colour: grey, RAL 7035



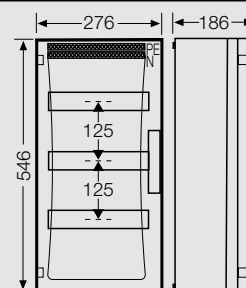
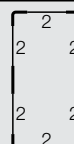
FP 1319 box size 3 **new** 36 modules: 3 x 12 x 18 mm

3-row
PE+N x cross section
6 x 25 mm², Cu
24 x 4 mm², Cu
attached enclosure connectors: 6 items
order closing plate sets, single closing
plates and flanges separately



FP 1318 box size 3 36 modules: 3 x 12 x 18 mm

with closing plates
3-row
PE+N x cross section
6 x 25 mm², Cu
24 x 4 mm², Cu
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65



order closing plate sets,
single closing plates
and flanges separately

Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm



Circuit breaker boxes for the installation of DIN rail equipment up to 63 A Operation also by unskilled persons

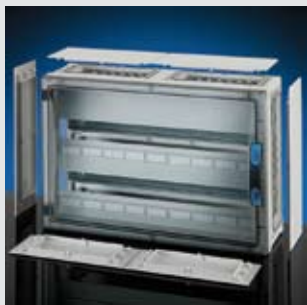
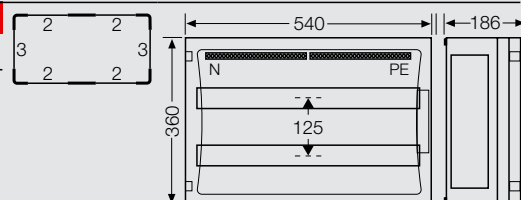
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with PE and N terminals
- FIXCONNECT® terminal technology for PE and N

- material: thermoplastic
- colour: grey, RAL 7035



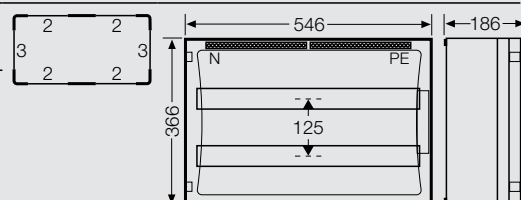
FP 1409 **box size 4** **new** 54 modules: 2 x 27 x 18 mm

2-row
PE+N x cross section
6 x 25 mm², Cu
24 x 4 mm², Cu
attached enclosure connectors: 6 items
order closing plate sets, single closing
plates and flanges separately



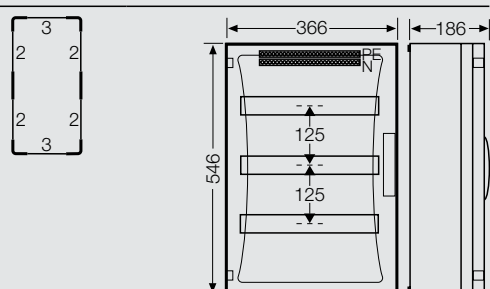
FP 1408 **box size 4** 54 modules: 2 x 27 x 18 mm

with closing plates
2-row
PE+N x cross section
6 x 25 mm², Cu
24 x 4 mm², Cu
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65



FP 1418 **box size 4** 51 modules: 3 x 17 x 18 mm

with closing plates
3-row
PE+N x cross section
6 x 25 mm², Cu
24 x 4 mm², Cu
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65



Order closing plate
sets, single closing
plates and flanges
separately



Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm

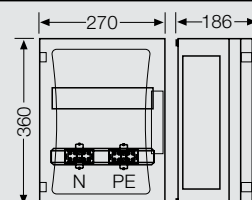
- **for installation of DIN rail equipment up to 125 A**
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- **with PE and N terminals**
- FIXCONNECT® terminal technology for PE and N
- order closing plate sets, single closing plates and flanges separately

- material: thermoplastic
- colour: grey, RAL 7035



FP 1211 box size 2
12 modules: 1 x 12 x 18 mm

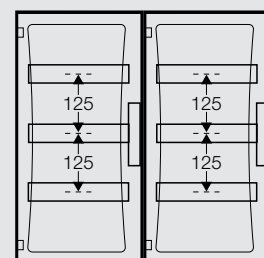
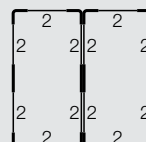
for miniature circuit breakers (MCB)
 1-row
 with 1 DIN rail 216 mm wide
 (for installation depth of 72 mm)
 cover can be sealed
 with lockable blanking strips
 attached enclosure connectors: 4 items
 PE+N x cross section
 2 x 25 mm², 4 x 16 mm²



Example:

2 x FP 1318
72 modules: 6 x 12 x 18 mm

with closing plates
 2 x 3-row
 PE+N x cross section
 6 x 25 mm², Cu
 24 x 4 mm², Cu
 attached enclosure connectors: 6 items
 order flanges separately
 degree of protection IP 65



Order closing plate sets, single closing plates and flanges separately

Box walls



Wall 1 (180 mm)
 Wall opening:
 100 x 80 mm



Wall 2 (270 mm)
 Wall opening:
 190 x 80 mm



2 x Wall 2 (270 mm)
 Wall opening:
 190 x 80 mm Wall opening:
 190 x 80 mm



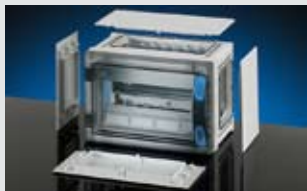
Wall 3 (360 mm)
 Wall opening:
 280 x 80 mm

Circuit breaker boxes for the installation of DIN rail equipment up to 63 A

Operation also by unskilled persons

- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- without PE and N terminals

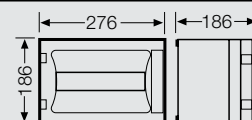
- material: thermoplastic
- colour: grey, RAL 7035



FP 1105 box size 1
9 modules: 1 x 9 x 18 mm

with closing plates

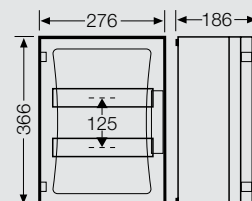
1-row
attached enclosure connectors: 4 items
order flanges separately
degree of protection IP 65



FP 1215 box size 2
24 modules: 2 x 12 x 18 mm

with closing plates

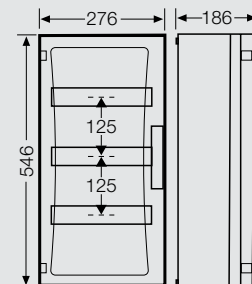
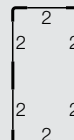
2-row
attached enclosure connectors: 4 items
order flanges separately
degree of protection IP 65



FP 1315 box size 3
36 modules: 3 x 12 x 18 mm

with closing plates

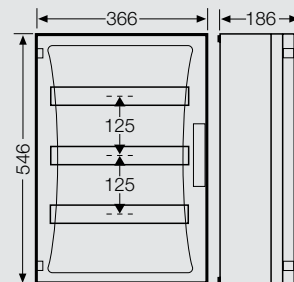
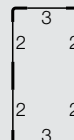
3-row
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65



FP 1415 box size 4
51 modules: 3 x 17 x 18 mm

with closing plates

3-row
attached enclosure connectors: 6 items
order flanges separately
degree of protection IP 65



Box walls



Wall 1 (180 mm)

Wall opening:
100 x 80 mm



Wall 2 (270 mm)

Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)

Wall opening:
190 x 80 mm



Wall 3 (360 mm)

Wall opening:
280 x 80 mm

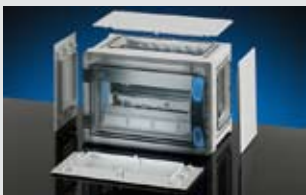
Circuit breaker boxes for the installation of DIN rail equipment up to 63 A

Operation also by unskilled persons

- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880
- with removable DIN rail rack for earth connection
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- without PE and N terminals
- material: thermoplastic
- colour: grey, RAL 7035



FP 1106	box size 1 9 modules: 1 x 9 x 18 mm		
	1-row attached enclosure connectors: 4 items order closing plate sets, single closing plates and flanges separately		



FP 1107	box size 1 9 modules: 1 x 9 x 18 mm		
	with closing plates 1-row attached enclosure connectors: 4 items order flanges separately degree of protection IP 65		



FP 1216	box size 2 24 modules: 2 x 12 x 18 mm		
	2-row attached enclosure connectors: 4 items order closing plate sets, single closing plates and flanges separately		



FP 1217	box size 2 24 modules: 2 x 12 x 18 mm		
	with closing plates 2-row attached enclosure connectors: 4 items order flanges separately degree of protection IP 65		



Removable DIN rail rack for e.g. earth connection (British standard)



Order closing plate sets, single closing plates and flanges separately

Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm

Circuit breaker boxes for the installation of DIN rail equipment up to 63 A

Operation also by unskilled persons

- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880

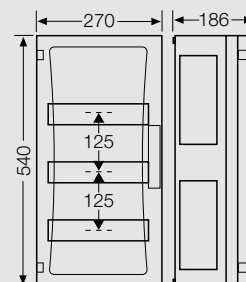
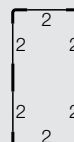
- material: thermoplastic
- colour: grey, RAL 7035

- with removable DIN rail rack for earth connection

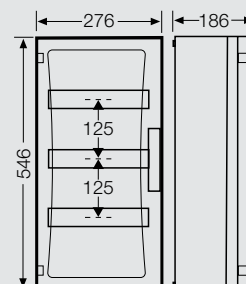
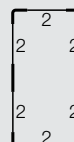
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- without PE and N terminals



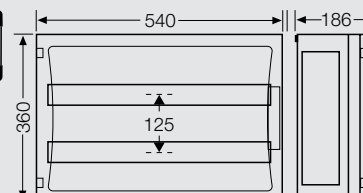
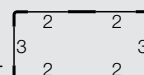
FP 1316	box size 3 36 modules: 3 x 12 x 18 mm
	3-row attached enclosure connectors: 6 items order closing plate sets, single closing plates and flanges separately



FP 1317	box size 3 36 modules: 3 x 12 x 18 mm
	with closing plates 3-row attached enclosure connectors: 6 items order flanges separately degree of protection IP 65



FP 1406	box size 4 54 modules: 2 x 27 x 18 mm
	2-row attached enclosure connectors: 6 items order closing plate sets, single closing plates and flanges separately



Removable DIN rail rack for e.g. earth connection (British standard)

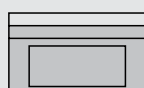


Order closing plate sets, single closing plates and flanges separately

Box walls



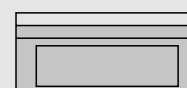
Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm

Circuit breaker boxes for the installation of DIN rail equipment up to 63 A

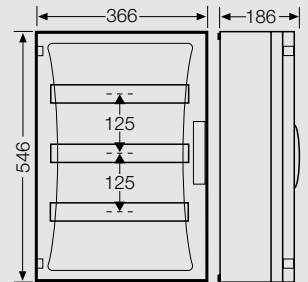
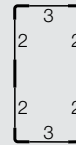
Operation also by unskilled persons

- for installation of DIN rail equipment up to 63 A in accordance with DIN 43 880
- with removable DIN rail rack for earth connection
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- without PE and N terminals

- material: thermoplastic
- colour: grey, RAL 7035



FP 1417	box size 4 51 modules: 3 x 17 x 18 mm with closing plates 3-row PE+N x cross section 6 x 25 mm ² , Cu 24 x 4 mm ² , Cu attached enclosure connectors: 6 items order flanges separately degree of protection IP 65
----------------	---



Removable DIN rail rack for e.g. earth connection (British standard)



Order closing plate sets, single closing plates and flanges separately

Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm

Circuit breaker boxes for the installation of DIN rail equipment up to 100 A

Operation also by unskilled persons

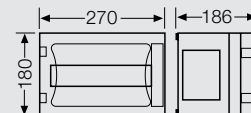
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- door locking with hand operation
- Door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- without PE and N terminals

- material: thermoplastic
- colour: grey, RAL 7035



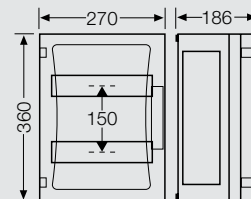
FP 1101 **box size 1**
12 modules: 1 x 12 x 18 mm

1-row
attached enclosure connectors: 4 items
order closing plate sets, single closing plates and flanges separately



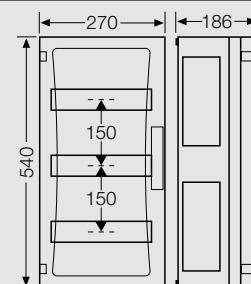
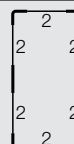
FP 1249 **box size 2** **new**
24 modules: 2 x 12 x 18 mm

2-row
attached enclosure connectors: 4 items
order closing plate sets, single closing plates and flanges separately



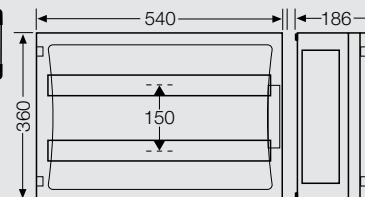
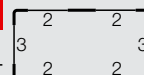
FP 1349 **box size 3** **new**
36 modules: 3 x 12 x 18 mm

3-row
attached enclosure connectors: 6 items
order closing plate sets, single closing plates and flanges separately



FP 1439 **box size 4** **new**
54 modules: 2 x 27 x 18 mm

2-row
attached enclosure connectors: 6 items
order closing plate sets, single closing plates and flanges separately



Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



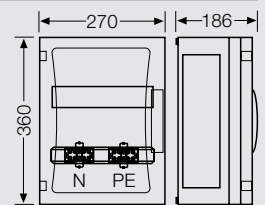
Wall 3 (360 mm)
Wall opening:
280 x 80 mm

- for installation of DIN rail equipment up to 125 A
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- order closing plate sets, single closing plates and flanges separately

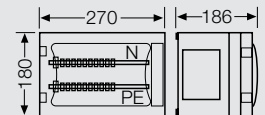
- material: thermoplastic
- colour: grey, RAL 7035


FP 1211 box size 2
12 modules: 1 x 12 x 18 mm

for miniature circuit breakers (MCB)
 1-row
 with 1 DIN rail 216 mm wide
 (for installation depth of 72 mm)
 cover can be sealed
 with lockable blanking strips
 attached enclosure connectors: 4 items
 PE+N x cross section
 2 x 25 mm², 4 x 16 mm²


FP 1100 Terminal box
new

rated current: 125 A
 door fastener with tool operation
 with opaque door
 terminals per PE + N:
 24 x 1.5-16 mm², Cu
 1 x 4-35 mm², Cu



Order closing plate sets, single closing plates and flanges separately


Box walls

Wall 1 (180 mm)

Wall opening:
100 x 80 mm


Wall 2 (270 mm)

Wall opening:
190 x 80 mm


2 x Wall 2 (270 mm)

Wall opening: 190 x 80 mm Wall opening: 190 x 80 mm

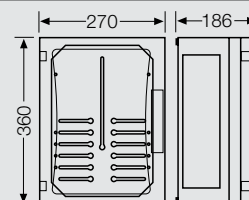

Wall 3 (360 mm)

Wall opening:
280 x 80 mm

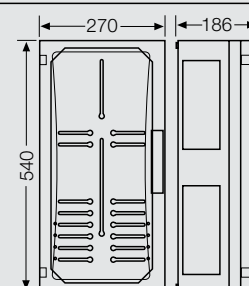
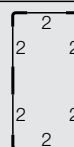
- door fastener with tool operation
- door locking sealable
- use in unmetered area after consultation with local power supply companies
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035


FP 2211 box size 2

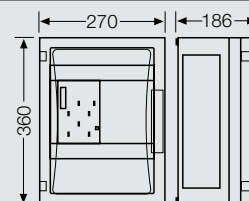
max. installation depth 136 mm
with integrated KWH meter support and
meter fixing screws
attached enclosure connectors: 4 items


FP 2312 box size 3

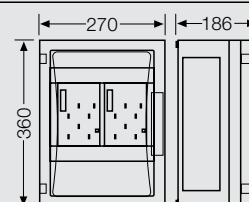
max. installation depth 136 mm
with integrated supports for 2 KWH meters and meter fixing screws
or for the installation of 1 KWH meter and 1 additional DIN rail
attached enclosure connectors: 6 items


FP 2212 box size 2

max. installation depth 95 mm
with support for 1 electronic consumer meter (eHz)
with pre-assembled connecting cables
attached enclosure connectors: 4 items
connecting cable length:
incoming 4 x 1000 mm
outgoing 3 x 1000 mm


FP 2213 box size 2

max. installation depth 95 mm
with supports for 2 electronic consumer meters (eHz)
with pre-assembled connecting cables
attached enclosure connectors: 4 items
connecting cable length:
incoming 4 x 1000 mm
outgoing 3 x 1000 mm



Example:
ENYSTAR KWH meter box
with installed electronic
consumer meter (eHz)



Order closing plate
sets, single closing
plates and flanges
separately


Box walls

Wall 1 (180 mm)

Wall opening:
100 x 80 mm


Wall 2 (270 mm)

Wall opening:
190 x 80 mm


2 x Wall 2 (270 mm)

Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm


Wall 3 (360 mm)

Wall opening:
280 x 80 mm

Busbar boxes

with fuse switch disconnectors in accordance with EN 60 947-3, size HRC 00C, 3-pole

Access and operation only by skilled persons

- door fastener with tool operation
- door locking sealable
- mounted onto busbars
- with PE and N for copper conductors
- N conductor with the same current carrying capacity as the phase conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035



FP 3226	fuse size 1 x HRC 00C, 3-pole		
<p>1 terminal per PE+N rated connecting capacity terminals for incoming cables: 10-70 mm², Mi VS 100/160 terminals for outgoing cables: 1.5-35 mm² rated voltage: AC 690 V for terminal technology refer to index technical data busbar rated current 250 A attached enclosure connectors: 6 items</p>			



FP 3426	fuse size 2 x HRC 00C, 3-pole		
<p>2 terminals per PE+N rated connecting capacity terminals for incoming cables: 10-70 mm², Mi VS 100/160 terminals for outgoing cables: 1.5-35 mm² rated voltage: AC 690 V for terminal technology refer to index technical data busbar rated current 250 A attached enclosure connectors: 6 items</p>			



FP SV 25	Busbar connector
<p>5-pole rated current: 250 A for the connection of ENYSTAR busbar boxes</p>	

Order closing plate sets, single closing plates and flanges separately



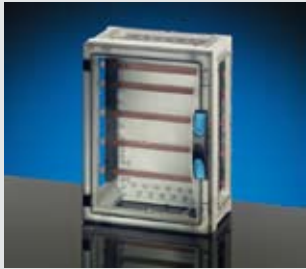
Box walls

<p>Wall 1 (180 mm) Wall opening: 100 x 80 mm</p>	<p>Wall 2 (270 mm) Wall opening: 190 x 80 mm</p>	<p>2 x Wall 2 (270 mm) Wall opening: 190 x 80 mm Wall opening: 190 x 80 mm</p>	<p>Wall 3 (360 mm) Wall opening: 280 x 80 mm</p>

Busbar boxes

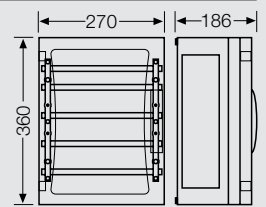
Access and operation only by skilled persons

- door fastener with tool operation
- door locking sealable
- N conductor with the same current carrying capacity as the phase conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035



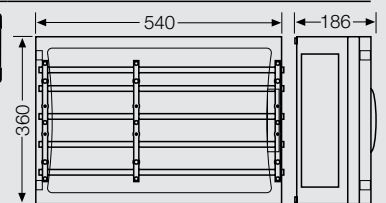
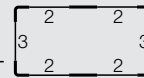
FP 3212 box size 2
busbar rated current 250 A

5-pole,
centreline spacing of busbars 60 mm
installation width: 216 mm,
space unit: 12
attached enclosure connectors: 4 items



FP 3402 box size 4
busbar rated current 250 A

5-pole,
centreline spacing of busbars 60 mm
installation width: 180 mm and 288 mm,
space units: 10 and 16
attached enclosure connectors: 6 items



FP SV 25 Busbar connector

5-pole
rated current: 250 A
for the connection of ENYSTAR busbar boxes

Order closing plate
sets, single closing
plates and flanges
separately



Box walls



Wall 1 (180 mm)
Wall opening:
100 x 80 mm



Wall 2 (270 mm)
Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)
Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)
Wall opening:
280 x 80 mm



FP AP 21	Cover for fusegear
as protection against contact for box size 2 for busbar boxes for bus-mounting fusegear NH RT 00C and ZS RS 18 cut-out height: 160 mm x Width: 216 mm, space unit: 12	



FP AP 41	Cover for fusegear
as protection against contact for box size 4 for busbar boxes for bus-mounting fusegear NH RT 00C and ZS RS 18 cut-out height: 160 mm x Width: 180 mm, space unit: 10 cut-out height: 160 mm x Width: 288 mm, space unit: 16	



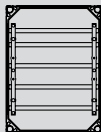
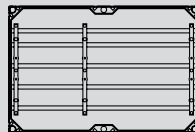
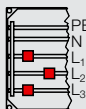
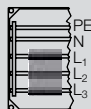
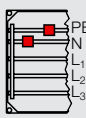
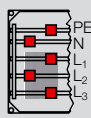

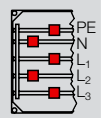
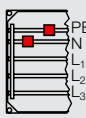
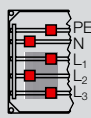

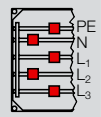
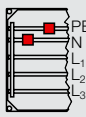
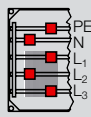

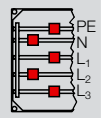
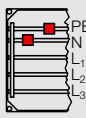
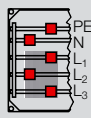

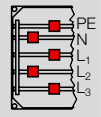
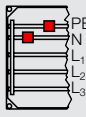

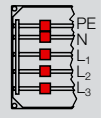

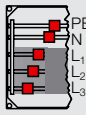
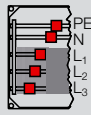
FP BA 70	Blanking cover
for blanking of unused openings in covers and terminals for direct busbar connection 16-70 mm ² height: 160 mm x width: 126 mm, space unit: 7 divisible every 18 mm	



NH RT 00C	HRC 00C bus-mounted fuse switch disconnect
3-pole, width 90 mm x height: 160 mm, space unit: 5 for retrofitting on busbars busbar thickness 5 mm and distance 60 mm between bars rated current: 125 A rated voltage: AC 690 V connection: 1.5-50 mm ² , Cu	



ZS RS 18	D0-bus-mounted fuse base
3-pole, width 36 mm x height: 160 mm, space unit: 2 for retrofitting on busbars busbar thickness 5 mm and distance 60 mm between bars rated current: 63 A rated voltage: AC 400 V connection: 1.5-16 mm ² , Cu	

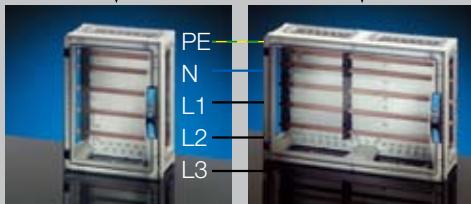
Type	busbars	width	cross-section	wiring strip	tightening torque	installation in: busbar boxes ...
Terminals for direct busbar connections for copper conductors solid (sol), stranded (s), flexible (f) with gas-tight crimped end sleeve and for laminated wiring strip. Remarks: For observance of insulation resistance clearances of 10 mm are necessary between different potentials and of 15 mm between conductive metal parts.						 
						... with covers for the combination with fusegear ...  
						... and blanking strips  
	KS 16 F	... x 5 mm	11 mm	1.5-16 mm ² Cu	4.0 Nm	PE N L ₁ L ₂ L ₃   
	KS 35 F	... x 5 mm	16 mm	4-35 mm ² Cu	6.0 Nm	PE N L ₁ L ₂ L ₃   
	KS 70 F	... x 5 mm	21 mm	10-70 mm ² Cu	10.0 Nm	PE N L ₁ L ₂ L ₃   
	KS 150 F	12 x 5 mm	28 mm	35-150 mm ² Cu	12.0 Nm	PE N L ₁ L ₂ L ₃  
	KS 240/12	12x5 mm	32 mm	35-240 mm ² Cu/ Alu	40 Nm	PE N L ₁ L ₂ L ₃ 
Before connection aluminum conductors need to be prepared according to the relevant technical recommendations.						
Connection module 5-pole, for bus-mounting in busbar boxes with covers width: 144 mm, space units: 8 items						
	AM RK 150	12 x 5 mm	L1-L3, N	35-150 mm ² Cu	12.0 Nm	PE N L ₁ L ₂ L ₃  
			PE	10-70 mm ² Cu	10.0 Nm	

Application possibilities of busbar boxes with covers with bus-mounted fusegear and terminals for direct busbar connection



FP AP 21

FP AP 41



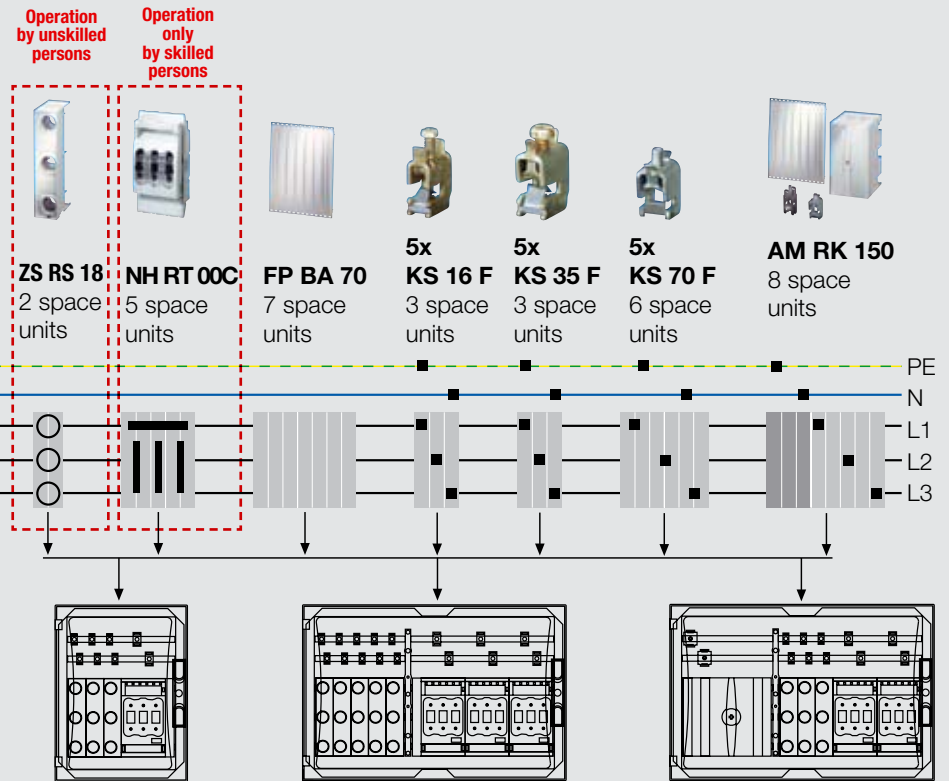
FP 3212

12 space units

FP 3402

10 + 16 space units

Fusegear and terminals for direct busbar connection



Application possibilities of busbar boxes without covers with bus-mounted fusegear and terminals for direct busbar connection



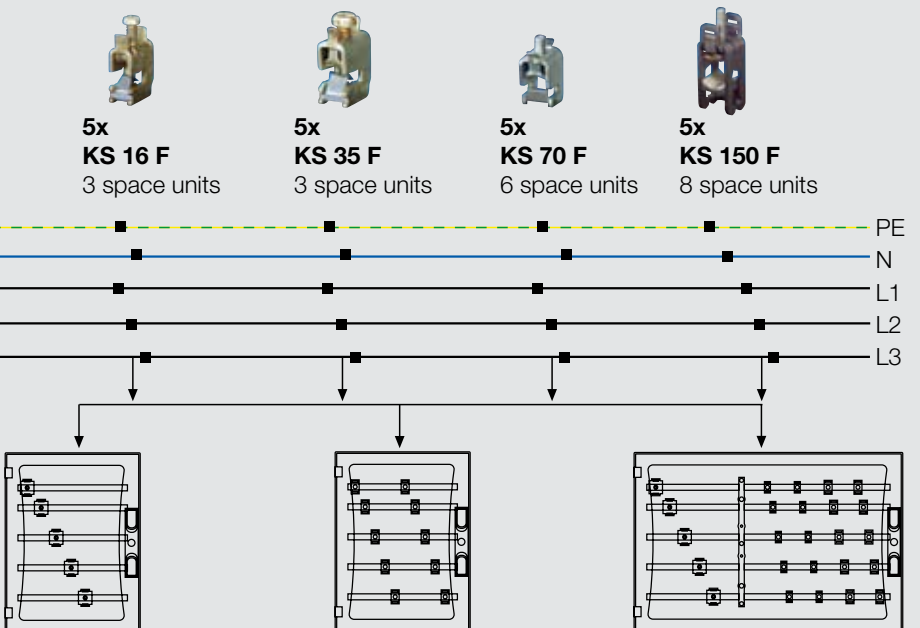
FP 3212

12 space units

FP 3402

10 + 16 space units

Terminals for direct busbar connection

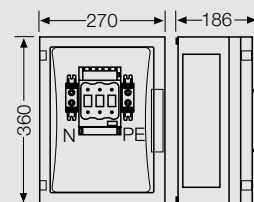


HRC fuse boxes with fuse switch disconnectors
fuse switch disconnectors in accordance with IEC 60 947-3
Access and operation only by skilled persons

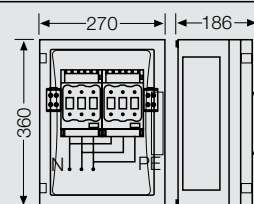
- door fastener with tool operation
- door locking sealable
- with PE and N terminals for copper conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035
- rated voltage: AC 690 V



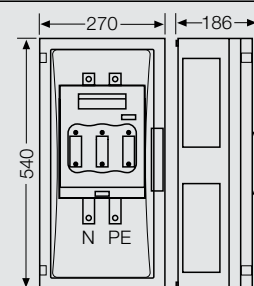
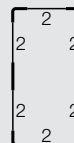
FP 4211	box size 2 fuse size 1 x HRC 00C
3-pole rated current: 125 A connection: 2.5-50 mm ² , terminal, Cu attached enclosure connectors: 4 items	



FP 4212	box size 2 fuse size 2 x HRC 00C
3-pole rated current: 125 A connection: 2.5-50 mm ² , terminal, Cu attached enclosure connectors: 4 items with connection for splitting-up incoming cable	



FP 4312	box size 3 fuse size 1 x HRC 1
3-pole rated current: 250 A connection: M 10 / Mi VS 250+VA 400 for terminal technology refer to index technical data attached enclosure connectors: 6 items	



Order closing plate
sets, single closing
plates and flanges
separately

Box walls



Wall 1 (180 mm)
 Wall opening:
 100 x 80 mm



Wall 2 (270 mm)
 Wall opening:
 190 x 80 mm



2 x Wall 2 (270 mm)
 Wall opening:
 190 x 80 mm Wall opening:
 190 x 80 mm



Wall 3 (360 mm)
 Wall opening:
 280 x 80 mm

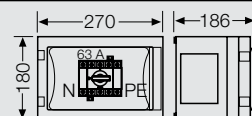
Isolator boxes
switch disconnectors in accordance with IEC 60 947-3
Operation also by unskilled persons

- door locking with hand operation
- door locking sealable
- with PE and N terminals for copper conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035



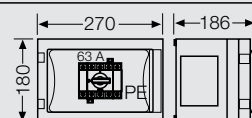
FP 5101 **box size 1**
switch disconnector 63 A

3-pole + PE + N
 connection: 2.5-35 mm², Cu / Mi VS 100
 switching capacity:
 AC 23 A/B 400 V 30 kW
 maximum back-up fuse: 80 A
 rated voltage: U_e = 690 V
 lockable handle
 attached enclosure connectors: 4 items



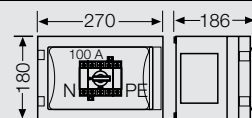
FP 5103 **box size 1**
switch disconnector 63 A

4-pole + PE
 connection: 2.5-35 mm², Cu / Mi VS 100
 switching capacity:
 AC 23 A/B 400 V 30 kW
 maximum back-up fuse: 80 A
 rated voltage: U_e = 690 V
 lockable handle
 attached enclosure connectors: 4 items



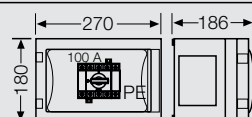
FP 5102 **box size 1**
switch disconnector 100 A

3-pole + PE + N
 connection: 10-35 mm², Cu / Mi VS 100
 switching capacity:
 AC 22 A/B 400 V 40 kW
 maximum back-up fuse: 100 A
 rated voltage: U_e = 690 V
 lockable handle
 attached enclosure connectors: 4 items



FP 5104 **box size 1**
switch disconnector 100 A

4-pole + PE
 connection: 10-35 mm², Cu / Mi VS 100
 switching capacity:
 AC 22 A/B 400 V 40 kW
 maximum back-up fuse: 100 A
 rated voltage: U_e = 690 V
 lockable handle
 attached enclosure connectors: 4 items



Order closing plate sets, single closing plates and flanges separately


Box walls


Wall 1 (180 mm)
 Wall opening:
 100 x 80 mm



Wall 2 (270 mm)
 Wall opening:
 190 x 80 mm



2 x Wall 2 (270 mm)
 Wall opening:
 190 x 80 mm Wall opening:
 190 x 80 mm



Wall 3 (360 mm)
 Wall opening:
 280 x 80 mm

Isolator box

switch disconnectors in accordance with IEC 60 947-3

Operation also by unskilled persons

- door locking with hand operation
- door locking sealable
- with PE and N terminals for copper conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035


FP 5201

box size 2
switch disconnector 125 A

new



3-pole + PE + N

connection: 70 mm², Cu / Mi VS 160

Switching capacity:

AC 23 A/B 400 V 55 kW

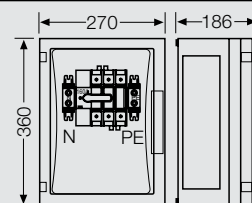
maximum back-up fuse: 125 A

rated voltage: U_e= 690 V

lockable handle

attached enclosure connectors: 4 items

wiring area top/bottom changeable


FP 5202

box size 2
switch disconnector 125 A

new



4-pole + PE

connection: 70 mm², Cu / Mi VS 160

Switching capacity:

AC 23 A/B 400 V 55 kW

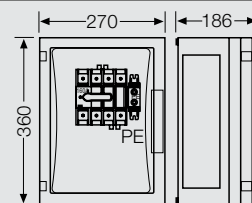
maximum back-up fuse: 125 A

rated voltage: U_e= 690 V

lockable handle

attached enclosure connectors: 4 items

wiring area top/bottom changeable


FP 5211

box size 2
switch disconnector 160 A



3-pole + PE + N

connection: 70 mm², Cu / Mi VS 160

Switching capacity:

AC 23 A/B 400 V 75 kW

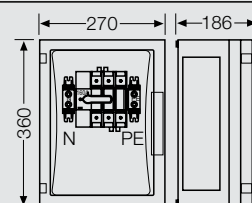
maximum back-up fuse: 160 A

rated voltage: U_e= 690 V

lockable handle

attached enclosure connectors: 4 items

wiring area top/bottom changeable


FP 5213

box size 2
switch disconnector 160 A



4-pole + PE

connection: 70 mm², Cu / Mi VS 160

Switching capacity:

AC 23 A/B 400 V 75 kW

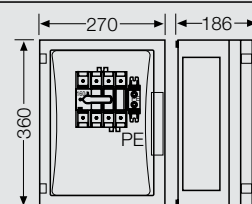
maximum back-up fuse: 160 A

rated voltage: U_e= 690 V

lockable handle

attached enclosure connectors: 4 items

wiring area top/bottom changeable



Box walls



Wall 1 (180 mm)

Wall opening:
100 x 80 mm



Wall 2 (270 mm)

Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)

Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)

Wall opening:
280 x 80 mm

Isolator box
switch disconnectors in accordance with IEC 60 947-3
Operation also by unskilled persons

- door locking with hand operation
- door locking sealable
- with PE and N terminals for copper conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035


FP 5312
box size 3
switch disconnecter 250 A
3-pole + PE + N

connection: M 10

 (max. 1 x 150 mm² per phase) or

VA 400 + Mi VS 250

switching capacity:

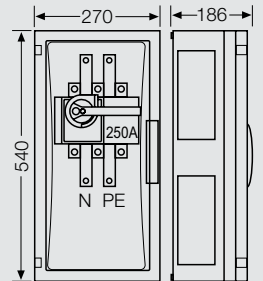
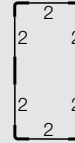
AC 23 A/B 400 V 132 kW

maximum back-up fuse: 250 A

 rated voltage: U_e = 500 V

tightening torque for terminal: 20.0 Nm

wiring area top/bottom changeable


 Order closing plate
sets, single closing
plates and flanges
separately

Box walls

Wall 1 (180 mm)

 Wall opening:
100 x 80 mm

Wall 2 (270 mm)

 Wall opening:
190 x 80 mm

2 x Wall 2 (270 mm)

 Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm

Wall 3 (360 mm)

 Wall opening:
280 x 80 mm

MCCB circuit-breaker box

circuit-breaker in accordance with IEC 60 947-2

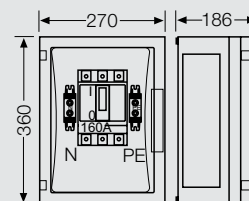
Access and operation only by skilled persons

- door locking with hand operation
- door locking sealable
- lockable handle
- MCCB with overload and short-circuit release
- with PE and N terminals for copper conductors
- order closing plate sets, single closing plates and flanges separately
- material: thermoplastic
- colour: grey, RAL 7035
- rated voltage: AC 690 V



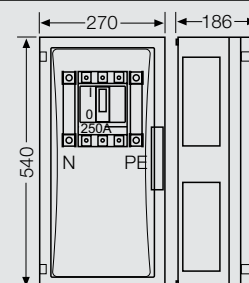
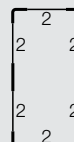
FP 5216 box size 2 circuit-breaker 160 A

3-pole + PE + N
connection: 70 mm², Cu / Mi VS 160
setting range overload release:
112-160 A
rated ultimate short-circuit breaking
capacity $I_{cs} = I_{cu}$:
at AC 415 V 36 kA
at AC 690 V 8 kA
attached enclosure connectors: 4 items



FP 5325 box size 3 circuit-breaker 250 A

3-pole + PE + N
connection: 150 mm², Cu / Mi VS 250
setting range overload release:
175-250 A
rated ultimate short-circuit breaking
capacity $I_{cs} = I_{cu}$:
bei AC 415 V 36 kA
bei AC 690 V 8 kA
attached enclosure connectors: 6 items



Order closing plate
sets, single closing
plates and flanges
separately



Box walls



Wall 1 (180 mm)

Wall opening:
100 x 80 mm



Wall 2 (270 mm)

Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)

Wall opening:
190 x 80 mm Wall opening:
190 x 80 mm



Wall 3 (360 mm)

Wall opening:
280 x 80 mm

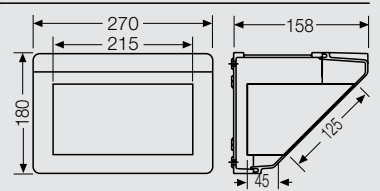


Connection Box	204
Extension frames, DIN rails, spacer	205
Mounting plates for IT equipment, accessories	206 - 207
Mounting plates for the installation of devices	208
Covers, sealing device for covers	209
Partition, blanking strips	210
PE / N terminals, main line branch terminals	211 - 212
Accessories for switches, terminals	213
Busbar, busbar support, wiring strips	214
Terminals for direct busbar connections	215
Wall separators, closing plates	216
Closing plate sets	217
Flanges	218 - 219
Canopy	219
Connectors, facility for sealing, Conversion kit for door fastener, door lock, dust protection cover, external brackets, mounting profiles, wallet for circuit diagram	220



FP CB 210 Connection Box

for mounting on box walls (270 mm)
hinged mounting area
for the installation of devices that must be operated
externally, such as plug devices, push buttons and
switches
degree of protection: IP 65



Example:

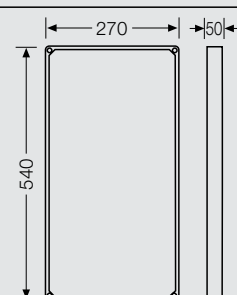
the Connection Box allows a simple and fast installation of devices, that must be operated externally, such as plug devices, push buttons and switches.





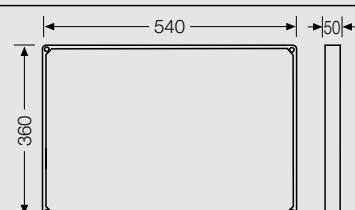
FP ZR 30 Extension frame

for ENYSTAR enclosure size 3
for extension of the installation depth by 50 mm
suitable for the admission of cover FP AP 30
in different installation depths



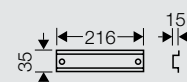
FP ZR 40 Extension frame

for ENYSTAR enclosure size 4
for extension of the installation depth by 50 mm
suitable for the admission of cover FP AP 40
in different installation depths



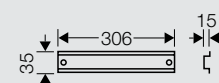
FP TS 27 DIN rail

in accordance with DIN EN 60 715
for ENYSTAR enclosures sizes 1, 2 und 3
for equipment or terminals with clip-on mounting
with fixing screws



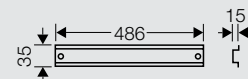
FP TS 36 DIN rail

in accordance with DIN EN 60 715
for ENYSTAR enclosures sizes 2 and 4
for equipment or terminals with clip-on mounting
with fixing screws



FP TS 54 DIN rail

in accordance with DIN EN 60 715
for ENYSTAR enclosures sizes 3 and 4
for equipment or terminals with clip-on mounting
with fixing screws



FP DS 02 Spacer

for spacing DIN rails ENYSTAR
2 items
with fixing screws für Gehäuseboden
height: 29.5 or 53.5 mm



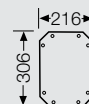
FP MP 15 Mounting plate for IT equipment **new**

material: metal
with grid perforations to take IT equipment
for ENYSTAR empty boxes sizes 1, 2 and 3
with fixing screws



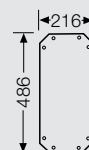
FP MP 25 Mounting plate for IT equipment **new**

material: metal
with grid perforations to take IT equipment
for ENYSTAR empty boxes sizes 2, 3 and 4
with fixing screws



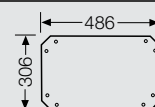
FP MP 35 Mounting plate for IT equipment **new**

material: metal
with grid perforations to take IT equipment
for ENYSTAR empty boxes sizes 3 and 4
with fixing screws



FP MP 45 Mounting plate for IT equipment **new**

material: metal
with grid perforations to take IT equipment
for ENYSTAR empty boxes sizes 4
with fixing screws



Example:

Enclosure solutions for connections to IT infrastructure, which can hold routers, switches or small PLC in a protected environment.

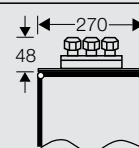




FP FG 230 Flange with divisible cable entry

new

for box wall 2 (270 mm)
to feed in pre-assembled cables with plugs
or couplings
without knockouts
attached enclosure connectors: 2
divisible
seal insert can be drilled individually



FDE 11 Seal insert, degree of protection IP 65

new

seal insert for the conversion of separable flange FP FG 230
sealing range: Ø 7-10.5 mm
ambient temperature - 25° to + 35° C
set with 3 pieces



FDE 13 Seal insert, degree of protection IP 65

new

seal insert for the conversion of separable flange FP FG 230
sealing range: Ø 9-13 mm
ambient temperature - 25° to + 35° C
set with 3 pieces



FDE 16 Seal insert, degree of protection IP 65

new

seal insert for the conversion of separable flange FP FG 230
sealing range: Ø 11.5-15.5 mm
ambient temperature - 25° to + 35° C
set with 3 pieces



FDE 18 Seal insert, degree of protection IP 65

new

seal insert for the conversion of separable flange FP FG 230
sealing range: Ø 14-18 mm
ambient temperature - 25° to + 35° C
set with 3 pieces



FDE 21 Seal insert, degree of protection IP 65

new

seal insert for the conversion of separable flange FP FG 230
sealing range: Ø 17-20.5 mm
ambient temperature - 25° to + 35° C
set with 3 pieces

Example: Flange with divisible cable entry for pre-assembled cables with plugs or couplings





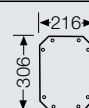
FP MP 10 Mounting plate

material: laminated paper
for ENYSTAR empty boxes sizes 1, 2 and 3
material thickness 4 mm
with fixing screws



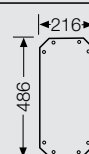
FP MP 20 Mounting plate

material: laminated paper
for ENYSTAR empty boxes sizes 2, 3 and 4
material thickness 4 mm
with fixing screws



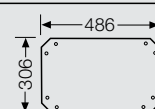
FP MP 30 Mounting plate

material: laminated paper
for ENYSTAR empty boxes sizes 3 and 4
material thickness 4 mm
with fixing screws



FP MP 40 Mounting plate

material: laminated paper
for ENYSTAR empty box size 4
material thickness 4 mm
with fixing screws



FP BZ 13 Fixing screw

for assembling DIN rails or mounting plates at the base of the box
for material thicknesses of 2.5 to 4 mm
self-tapping
galvanised
length 13 mm

Example:





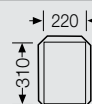
FP AP 10 Cover without cut-outs

for retrofitting
for ENYSTAR enclosures size 1
material: thermoplastics
as protection cover or for installation of equipment
colour grey, RAL 7035



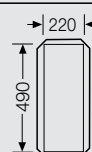
FP AP 20 Cover without cut-outs

for retrofitting
for ENYSTAR enclosures size 2
material: thermoplastics
as protection cover or for installation of equipment
colour grey, RAL 7035



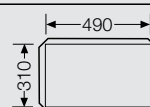
FP AP 30 Cover without cut-outs

for retrofitting
for ENYSTAR enclosures size 3
material: thermoplastics
as protection cover or for installation of equipment
colour grey, RAL 7035



FP AP 40 Cover without cut-outs

for retrofitting
for ENYSTAR enclosures size 4
material: thermoplastics
as protection cover or for installation of equipment
colour grey, RAL 7035



FP PL 2 Sealing device for covers

can be retrofitted
2 pieces
installable in all enclosures, except for enclosures for DIN rail mounted devices
with fixing screws

Example:





FP TW 18 Partition (180 mm)

to push-in between enclosures
colour grey, RAL 7035



FP TW 27 Partition (270 mm)

to push-in between enclosures
colour grey, RAL 7035



FP TW 36 Partition (360 mm)

to push-in between enclosures
except between two busbar boxes
colour grey, RAL 7035



AS 12 Blanking strip

for the covering of spare equipment openings,
for material thickness up to 3 mm
12 modules 18 mm each,
divisible every 9 mm
colour: grey, RAL 7035



AS 18 Blanking strip

for the covering of spare equipment openings,
for material thickness up to 3 mm
18 modules 18 mm each,
divisible every 9 mm
colour: grey, RAL 7035

Example: Partition between feeding and outgoing circuits.
In case of reinstallation is no access to live parts.





FC PN 20 PE and N terminal

FIXCONNECT® technology
for installation on DIN rails in accordance with IEC 60 715, top hat profile 35 mm
for enclosures with 1 x 12 modules (reduced to 9 modules)
PE+N x cross section: 2 x 25 mm², 8 x 4 mm²
current carrying capacity 80 A



FP FC 24 PE and N terminal

FIXCONNECT® technology
for enclosures with 2 x 12 modules
PE+N x cross section: 3 x 25 mm², 12 x 4 mm², Cu
with fixing screws
current carrying capacity 80 A
not applicable in enclosures 1 x 12 modules
N bar disconnectable for different potentials



FP FC 36 PE and N terminal

FIXCONNECT® technology
for enclosures with 3 x 12 modules
PE+N x cross section: 6 x 25 mm², 24 x 4 mm², Cu
with fixing screws
current carrying capacity 80 A
N bar disconnectable for different potentials



FP FC 54 PE and N terminal

FIXCONNECT® technology
for enclosures with 2 x 27 modules
PE+N x cross section: 6 x 25 mm², 24 x 4 mm², Cu
with fixing screws
current carrying capacity 80 A
N bar disconnectable for different potentials



FP FC 51 PE and N terminal

FIXCONNECT® technology
for enclosures with 3 x 17 modules
PE+N x cross section: 8 x 25 mm², 32 x 4 mm², Cu
with fixing screws
current carrying capacity 80 A
N bar disconnectable for different potentials



FC PE 10 PE terminal

for installation on DIN rails in accordance with IEC 60 715, top hat profile 35 mm
for enclosures with 1 x 12 modules (reduced to 9 modules)
FIXCONNECT® technology
number x cross-section per PE: 2 x 25 mm², 8 x 4 mm², Cu
current carrying capacity 80 A



FP FC 054 PE terminal

FIXCONNECT® technology
for enclosures with 2 x 12 modules, 3 x 12 modules, 2 x 27 modules
number x cross-section per PE: 6 x 25 mm², 24 x 4 mm², Cu
with fixing screws
current carrying capacity 80 A



FP FC 051 PE terminal

FIXCONNECT® technology
for enclosures with 3 x 17 modules,
number x cross-section per PE: 8 x 25 mm², 32 x 4 mm², Cu
with fixing screws
current carrying capacity 80 A



FC BS 5 FIXCONNECT® labelling system

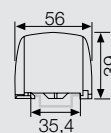
Labelling system for FIXCONNECT terminals,
not for plug-in terminals 2x25 + 4x4 mm²
for attaching of labelling strips or marking with
felt tip pen
set with 5 pieces





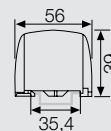
KKL 34 Main line branch terminal

3-pole as connecting terminal 25 mm²
per pole 4 x 1.5-25 mm² as L1-L3
for installation on DIN rails in accordance
with IEC 60 715,
top hat profile 35 mm
current carrying capacity 80 A
width 61 mm



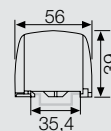
KKL 48 Main line branch terminal

4-pole as connecting terminal 25 mm²
per pole 4 x 1.5-25 mm² as L1-L3, 8 x 1.5-25 mm² as N
for installation on DIN rails in accordance
with IEC 60 715,
top hat profile 35 mm
current carrying capacity 80 A
width 100 mm



KKL 54 Main line branch terminal

5-pole as connecting terminal 25 mm²
per pole 4x 1.5-25 mm² as L1-L3, 4x 1.5-25mm² as N,
4x 1.5-25 mm² as PE
for installation on DIN rails in accordance
with IEC 60 715,
top hat profile 35 mm
current carrying capacity 80 A
width 100 mm





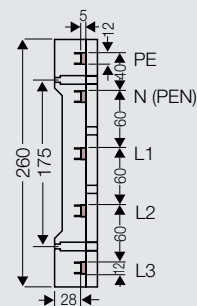
Mi HS 20	Auxiliary contact
	2-pole rated current: 6 A 2 changeover contacts for retrofitting on switch disconnectors 250 A connection with flat connector 6.3 mm
MK 0107	auxiliary changeover contact
	1-pole rated current: 6 A for circuit-breakers 160-630 A the auxiliary switches can report different functions depending on their mounting location in the circuit-breaker circuit-breaker 160/250 A = 2x ON/OFF signal + 1x tripping signal
MK 0106	Open-circuit shunt release
	for circuit-breakers 160-630 A AC 50/60 Hz, 200 up to 240 V the main contacts of the circuit-breaker are opened when voltage of more than $0.7 \times U_n$ is applied
MK 0105	Undervoltage release
	for circuit-breakers 160-630 A AC 50/60 Hz, 200 bis 240 V when the control voltage drops below $0.35 - 0.7 \times U_n$, the main contacts of the circuit-breaker are opened the closing of the contacts can only take place with voltages above $0.85 \times U_n$
VA 400	Wiring terminal up to 400 A
	terminal for direct connection of laminated copper wiring strip (Mi VS 250 and Mi VS 400) up to 400 A onto switchgear with flat contact M10 tightening torque for terminal 8.0 Nm
DA 185	Terminal for direct connection, Cu
	for mounting onto switchgear with flat contact M10 rated connecting capacity: 16-185 mm ² s (round) 16-185 mm ² s (sector) 16-185 mm ² sol (round) 16-185 mm ² sol (sector) tightening torque for terminal: 25.0 Nm


Mi SS 22 Bus bar 12 x 5 mm

length: 2400 mm
 conductor material: Cu
 busbar rated current 250 A as N/PE


FP ST 25 Busbar support 250 A

for installation in ENYSTAR empty enclosures
 centreline spacing of busbars 60 mm
 for busbars 12 x 5 mm
 with fixing screws


Mi VS 100 Wiring strip rated current 100 A

for connections of 100 A between busbars and built-in equipment
 wiring instructions for equipment (e.g. wire range ...mm²) must be observed
 length: 2000 mm
 number of sheets: 3 items
 width 9 mm
 material thickness per sheet: 0.8 mm


Mi VS 160 Wiring strip rated current 160 A

for connections of 160 A between busbars and built-in equipment
 wiring instructions for equipment (e.g. wire range ...mm²) must be observed
 length: 2000 mm
 number of sheets: 6 items
 width 9 mm
 material thickness per sheet: 0.8 mm


Mi VS 250 Wiring strip rated current 250 A

for connections of 250 A between busbars and built-in equipment
 wiring instructions for equipment (e.g. wire range ...mm²) must be observed
 length: 2000 mm
 number of sheets: 6 items
 width 15.5 mm
 material thickness per sheet: 0.8 mm

Type	busbars	width	cross-section	wiring strip	tightening torque	installation in: busbar boxes ...
Terminals for direct busbar connections for copper conductors solid (sol), stranded (s), flexible (f) with gas-tight crimped end sleeve and for laminated wiring strip. Remarks: For observance of insulation resistance clearances of 10 mm are necessary between different potentials and of 15 mm between conductive metal parts.						 ... with covers for the combination with fusegear and blanking strips
	KS 16 F	... x 5 mm	11 mm	1.5-16 mm ² Cu	4.0 Nm	PE N L ₁ L ₂ L ₃
	KS 35 F	... x 5 mm	16 mm	4-35 mm ² Cu	100 A; Mi VS 100 160 A; Mi VS 160 6.0 Nm	PE N L ₁ L ₂ L ₃
	KS 70 F	... x 5 mm	21 mm	10-70 mm ² Cu	100 A; Mi VS 100 160 A; Mi VS 160 10.0 Nm	PE N L ₁ L ₂ L ₃
	KS 150 F	12 x 5 mm	28 mm	35-150 mm ² Cu	250 A; Mi VS 250 12.0 Nm	PE N L ₁ L ₂ L ₃
	KS 240/12	12x5 mm	32 mm	35-240 mm ² Cu/ Alu	40 Nm	PE N L ₁ L ₂ L ₃
Before connection aluminum conductors need to be prepared according to the relevant technical recommendations.						
Connection module 5-pole, for bus-mounting in busbar boxes with covers width: 144 mm, space units: 8 items						
	AM RK 150	12 x 5 mm	L1-L3, N	35-150 mm ² Cu	250 A; Mi VS 250 12.0 Nm	PE N L ₁ L ₂ L ₃
			PE	10-70 mm ² Cu	160 A; Mi VS 160 10.0 Nm	



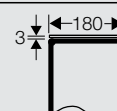
FP WT 1 Wall separator

for connecting enclosure walls of different sizes (refer to technical data)
for insertion in bases of enclosures
with 2 fixing elements



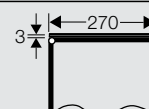
FP VP 18 Closing plate

box wall 1 (180 mm)
with 2 fixing elements
without knockouts



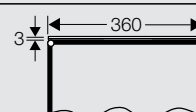
FP VP 27 Closing plate

box wall 2 (270 mm)
with 2 fixing elements
without knockouts



FP VP 36 Closing plate

box wall 3 (360 mm)
with 2 fixing elements
without knockouts





- | | |
|--|---|
| FP VS 10 | Closing plate set
box size 1 |
| box size 1 (2 x 180 mm, 2 x 270 mm)
set consisting of:
4 closing plates with 8 fixing elements
without knockouts | |



- | | |
|--|---|
| FP VS 20 | Closing plate set
box size 2 |
| box size 2 (2 x 270 mm, 2 x 360 mm)
set consisting of:
4 closing plates with 8 fixing elements
without knockouts | |



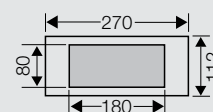
- | | |
|--|---|
| FP VS 30 | Closing plate set
box size 3 |
| box size 3 (6 x 270 mm)
set consisting of:
6 closing plates with 8 fixing elements
without knockouts | |



- | | |
|--|---|
| FP VS 40 | Closing plate set
box size 4 |
| box size 4 (4 x 270 mm, 2 x 360 mm)
set consisting of:
6 closing plates with 8 fixing elements
without knockouts | |



- | | |
|---|--|
| FP VM 27 | Metal insert for closing plates |
| for earthing of metal armoured cables
for closing plates size 270 mm | |



- | | |
|---|--|
| FP VM 36 | Metal insert for closing plates |
| for earthing of metal armoured cables
for closing plates size 360 mm | |

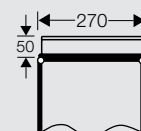
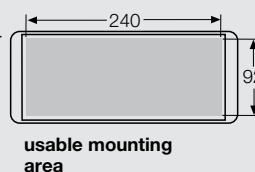


Earth connection according to British Standard installation via built-in metal insert.

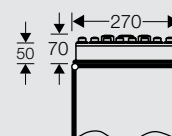



FP FG 200
Flange
box wall 2 (270 mm)

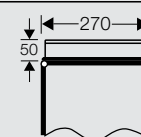
attached enclosure connectors: 2
without knockouts:


FP FG 222
Flange
box wall 2 (270 mm)

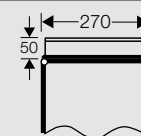
attached enclosure connectors: 2 items
with integrated grommets for cable entry
sealing range:
17 x Ø 6-13 mm
2 x Ø 9-17 mm
2 x Ø 8-23 mm
1 x Ø 11-30 mm


FP FM 225
Flange
box wall 2 (270 mm)

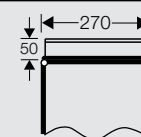
attached enclosure connectors: 2
knockouts:
7 x M 16/25, 13 x M 20/25


FP FM 232
Flange
box wall 2 (270 mm)

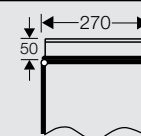
attached enclosure connectors: 2
knockouts:
8 x M 25/32, 2 x M 25/32/40


FP FM 240
Flange
box wall 2 (270 mm)

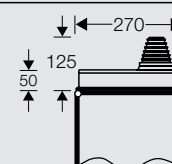
attached enclosure connectors: 2
knockouts:
2 x M 25/32, 5 x M 25/32/40


FP FM 263
Flange
box wall 2 (270 mm)

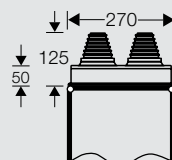
attached enclosure connectors: 2
knockouts:
2 x M 20, 2 x M 25/32, 2 x M 32/40/50,
1 x M 40/50/63


FP FG 272
Flange
box wall 2 (270 mm)

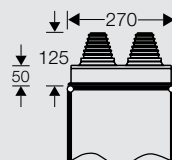
attached enclosure connectors: 2
using 1 cable entry
max. 72 mm external diameter
sealing range: Ø 30-72 mm


FP FG 273
Flange
box wall 2 (270 mm)

attached enclosure connectors: 2
for 2 cables
max. 72 mm external diameter
sealing range: 2 x je Ø 30-72 mm


FP FG 282
**Cable insert,
divisible for cable insertion from the front**
box wall 2 (270 mm)

attached enclosure connectors: 2
only with additional strain and pressure relief
(e.g. FP ZE 272)
for 2 cables, max. 72 mm external diameter
degree of protection IP 65
sealing range 2 x each Ø 30-72 mm





FP GS 27 Box fin

removable
for inserting cables across 2 boxes
for box walls 270 mm
can be retrofitted



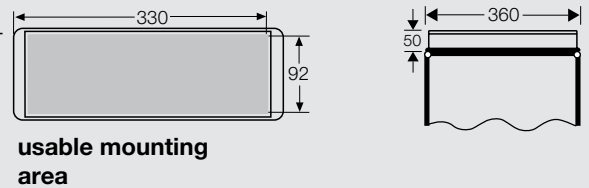
FP ZE 272 Cable strain relief

box wall 2 (270 mm)
for 2 cables with max. 60 mm external diameter



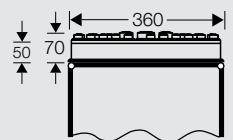
FP FG 300 Flange

box wall 3 (360 mm)
attached enclosure connectors: 2
without knockouts:



FP FG 331 Flange

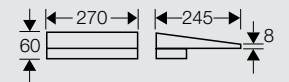
box wall 3 (360 mm)
attached enclosure connectors: 2
with integrated grommets for cable entry
sealing range
22 x Ø 6-13 mm
6 x Ø 9-17 mm
2 x Ø 8-23 mm
1 x Ø 11-30 mm



FP DB 27 Canopy

new

für box wall 270 mm
width 270 mm
depth 245 mm
attached enclosure connectors: 2



FP DB 36 Canopy

new

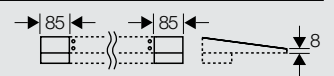
für box wall 360 mm
width 360 mm
depth 245 mm
attached enclosure connectors: 2



Mi DB 01 End plate for canopy

new

for canopy width 270 mm and 360 mm



Application of canopy:




FP GV 10 Connector

when converting existing installations
for connection of enclosures or fixation of flanges
colour: grey, RAL 7035
consisting of 10 pieces


FP PL 3 Facility for sealing

for door sealing
can be retrofitted
2 items


FP TS 1 Door lock

for converting door fasteners
from manual or tool operation to key operation
can be retrofitted


FP TS 2 Spare key

for door lock FP TS 1
(with 2 keys)


FP TW 1 Tool operation

for converting door fasteners from hand or key operation to tool operation
can be retrofitted


FP TA 1 Dust protection cover

for door fasteners after removing the tool or key operation device
can be retrofitted
consisting of 10 pieces


FP AL 40 External brackets

for external fixing of enclosures
set consisting of 4 fixing brackets, 4 screws


FP MS 1 Mounting profile

for wall mounting of ENYSTAR distribution boards up to 810 x 1260 mm
with 8 screws, washers and nuts for fastening of enclosures
sendzimir galvanised steel profile with structured powder coating
colour anthracite grey, RAL 7016
length: 1980 mm


MT SP 01 Wallet for circuit diagram

DIN A5
self-adhesive



Operating and ambient conditions	222
Standards and requirements	223
Detail dimensions in mm	224
Installation of equipment, busbar systems	225
Rated power dissipation of empty boxes	226 - 227
Assembly of enclosures	228 - 229
Wall-mounting	230
Design and engineering	231 - 233
Assembly	234 - 239

ENYCASE	Operating and ambient conditions	Empty enclosures with door and closing plates for walls	Enclosures with electrical functions
		Empty enclosures	FP 0... / FP 1... / FP 2... / FP 3... / FP 4... / FP 5...
ENYBOARD	Application area	The enclosures are suitable for the protected outdoor installation - harsh environment and / or protected outdoor. However the climatic influences and effects on the equipment are to be considered. ¹⁾	
	Ambient temperature - Average value over 24 hours - Maximum value - Minimum value	- + 70° C - 25° C	+ 35° C + 40° C - 5° C The ambient temperature for enclosures with electrical functions (distribution boards) is reduced by the installed equipment technology!
ENYSTAR®	Relative humidity - short-time	Adhere to the assembly instructions issued by the manufacturer.	50% at 40° C 100% at 25° C
	Fire protection in the event of internal faults	Demands placed on electrical devices from standards and laws Minimum requirements - Glow wire test in accordance with IEC 60 695-2-11: - 650° C for boxes and cable glands - 850° C for conducting components	
	Burning behaviour - Glow wire test IEC 60 695-2-11 - UL Subject 94	960° C V-2 flame-retardant self-extinguishing	960° C V-2 flame-retardant self-extinguishing
	Degree of protection against mechanical load	IK 08 (5 Joule)	IK 08 (5 Joule)
	Toxic behaviour	halogen-free ²⁾ silicone-free	halogen-free ²⁾ silicone-free
		<p>1) Additional information for protected outdoor installation: - In order to keep the maximum permissible ambient temperature of the installed equipment as well for the prevention from condensation additional measures as ventilation and/or heating may be necessary.</p> <p>2) "Halogen-free" in accordance with IEC 754-2 "Common test methods for cables - Determination of the amount of halogen acid gas".</p> <p>To material properties see technical data.</p>	

**ENYSTAR distribution boards
comply with the requirements
of the IEC 60 439-3**

Type-tested switchgear assemblies are switchgear and controlgear assemblies which are assembled and wired according to manufacturer data without essential deviations from the original type or system.

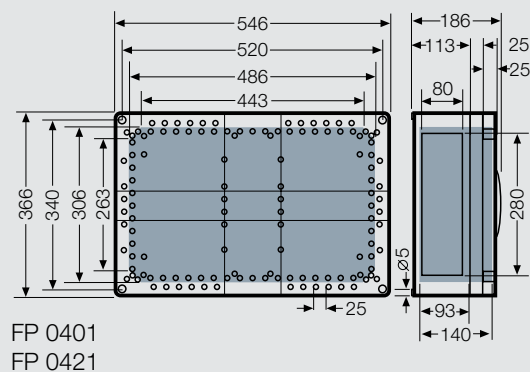
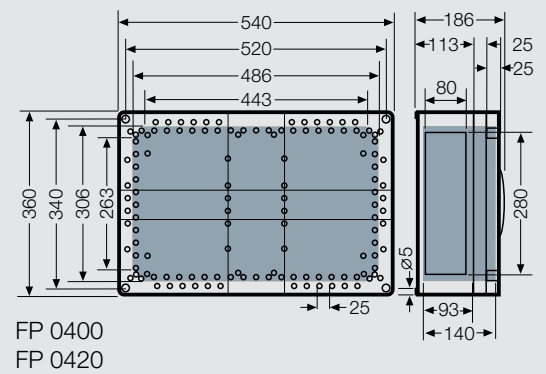
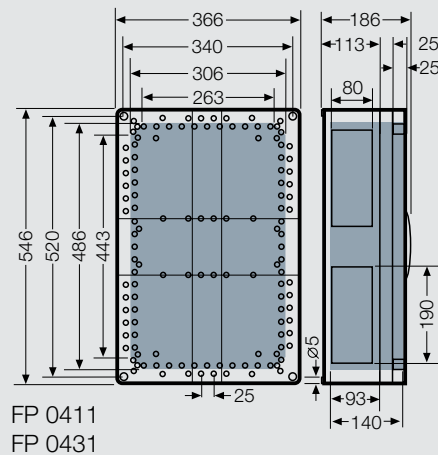
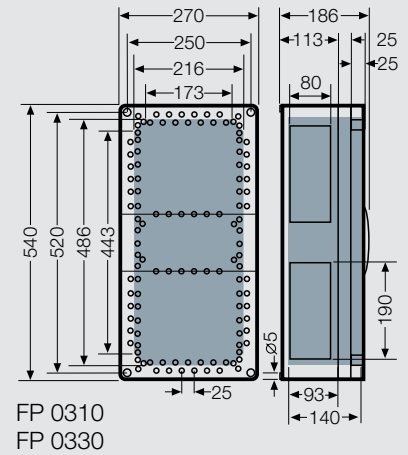
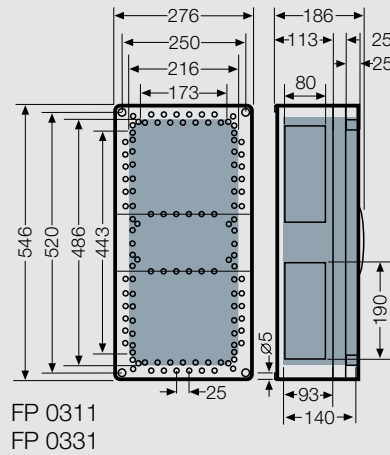
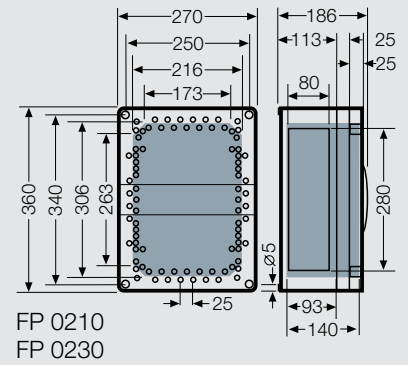
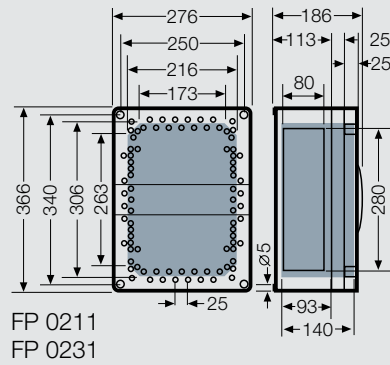
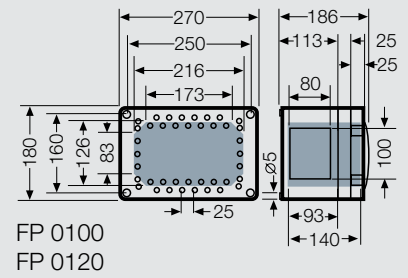
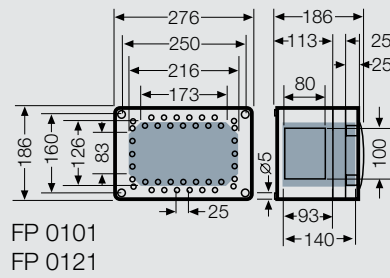
To meet these requirements for Hensel ENYSTAR Distribution boards, the following must be noted:

1. The switchgear must consist of the type-tested enclosures documented in this list.
2. The wiring of the equipment must be carried out with the cross-sections and conductor types indicated in Table "Rating of insulated conductors in switchgear assemblies", Index Technics.
3. Once the switchgear is completed, a routine test must be carried out in accordance with this standard.
4. The test must be certified with a test report.
5. The switchgear must be provided with a manufacturer's identification mark.
Compliance with important data such as
 - limit of temperature rise
 - dielectric strength
 - short-circuit withstand capacity
 - short-circuit withstand capacity of the PE conductor
 - IP degrees of protection
 - creepage distances and clearances
 is verified by type tests for this system.

Standards and requirements

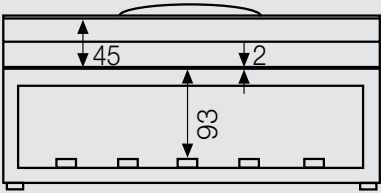
- IEC 60 439-3
... low-voltage switchgear and controlgear assemblies intended to be in places where unskilled persons have access to their use - distribution boards
- IEC 60 999, connecting devices
Safety requirements for screw-type and screwless-type clamping units for electrical copper conductors
- DIN EN 50 262
Metric threaded cable glands for electrical installations
- IEC 60 269
Low voltage fuses
- DIN 43 880
Built-in equipment for electrical installations; overall dimensions and related mounting dimensions
- IEC 60 529 / DIN VDE 0470 Teil 1
Degrees of protection provided by enclosures (IP-Code)
- IEC 60 947-2
low-voltage switchgear -Part 2, MCCB circuit-breakers
- IEC 60 947-3
low-voltage switchgear -Part 3,
switch disconnectors and switches, disconnectors, fuse combination units

Dimensions in mm



Equipment installation in covers

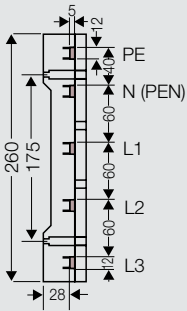
Installation depth for equipment installation in covers



Busbar system 250 A

Note to busbar boxes:

Busbar systems 250 A can be connected with busbar connector FP SV 25.



Electrical figures

Rated voltage:	AC/DC 690 V, IEC 60 664
Overvoltage category:	III
Degree of pollution:	3

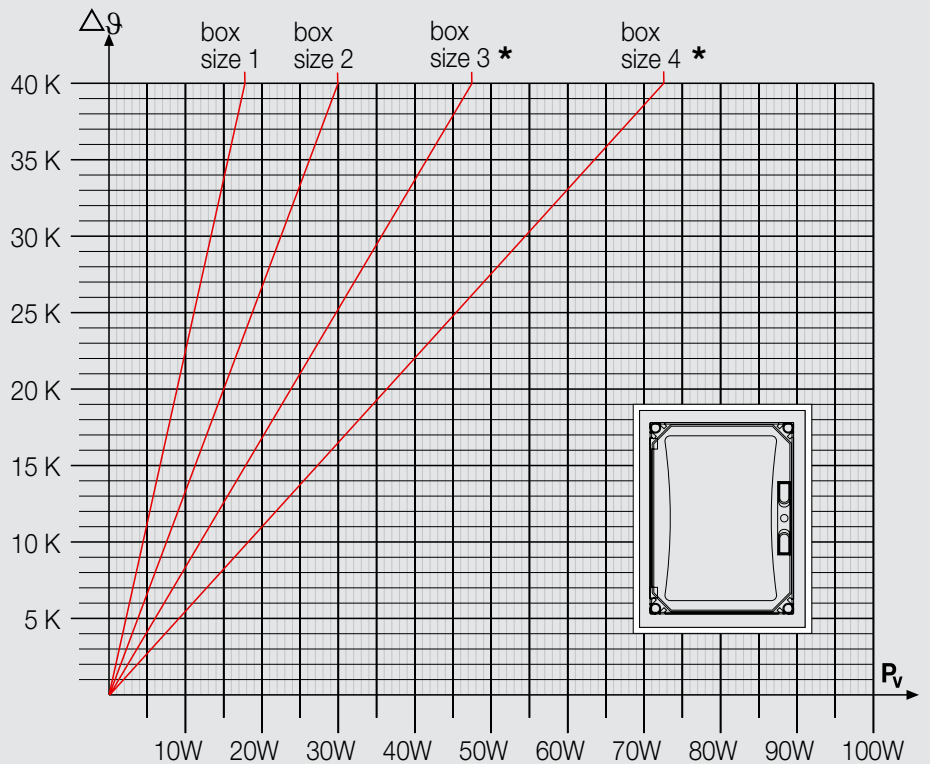
Rated current and short circuit resistance of busbars

Rated current	Busbar cross-section	Material	Rated peak withstand current		Rated short-time withstand current
A	mm		I_{pk} kA	cos	I_{CW}
250	12x5	Cu	26	0,3	13 kA / 100 ms



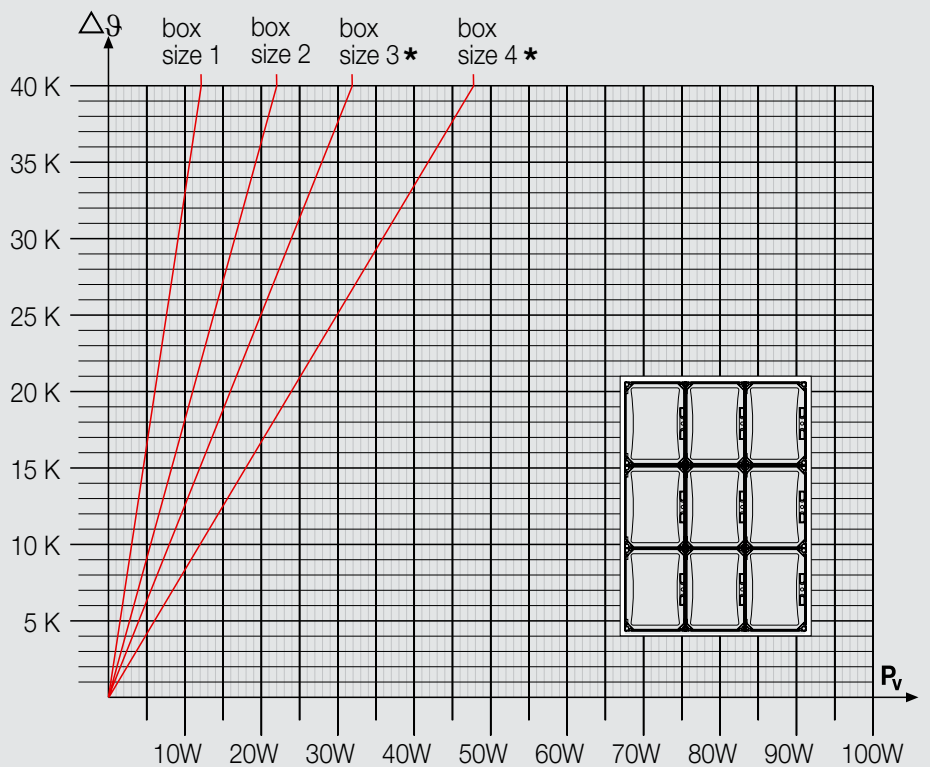
Single enclosures

Temperature rise ($\Delta\theta$) with ENYSTAR enclosures by power dissipation of electrical devices



* with/without extension frame

Assembled enclosures



Note!

The maximally permissible operating temperature inside the enclosures (ϑ_{imax}) is determined by:

- 1st Maximally permissible ambient temperature of the installed electrical devices (please consider data of the equipment manufacturers)
- 2nd Category temperature of the internal wiring and the inserted cables
- 3rd Temperature resistance of the enclosure materials and the cable entries etc.

Example: Computation of the maximum rated power dissipation (P_v)

Maximally permissible operating temperature inside the enclosure(s) (ϑ_{imax}): e.g. 55°C

Ambient temperature of the enclosure(s) (ϑ_u): 25° C

$$\begin{aligned} \text{Maximally permissible heating up inside the enclosure: } \Delta\vartheta &= \vartheta_{\text{imax}} - \vartheta_u \\ &= 55^\circ \text{ C} - 25^\circ \text{ C} = 30 \text{ K} \end{aligned}$$

Maximum permissible power dissipation of the installed equipment inclusive wiring (P_v) in accordance with diagram:

Enclosure size 3 (540 x 270 x 163 mm):

Single enclosure: $P_v = 36 \text{ W}$

Enclosures in assemblies: $P_v = 24 \text{ W}$

Example: Computation of the operating temperature inside the enclosure (ϑ_i)

Ambient temperature of the enclosure(s) (ϑ_u): 25° C

Rated power dissipation of the installed electrical equipment (P_v): 24 W

Heating up inside the enclosures in accordance with diagram over: $\Delta\vartheta$

Enclosure size 3 (540 x 270 x 163 mm):

Single enclosures: $\Delta\vartheta = 21 \text{ K}; \vartheta_i = \vartheta_u + \Delta\vartheta = 25^\circ \text{ C} + 21 \text{ K} = 46^\circ \text{ C}$

Enclosures in assemblies: $\Delta\vartheta = 30 \text{ K}; \vartheta_i = \vartheta_u + \Delta\vartheta = 25^\circ \text{ C} + 30 \text{ K} = 55^\circ \text{ C}$

Assembly of enclosures with connectors and wall separators

Fast assembly and mounting

All necessary gaskets are integral part of the enclosures. The enclosures are interconnected among themselves by easily pushing-in of connectors. No tools are necessary.

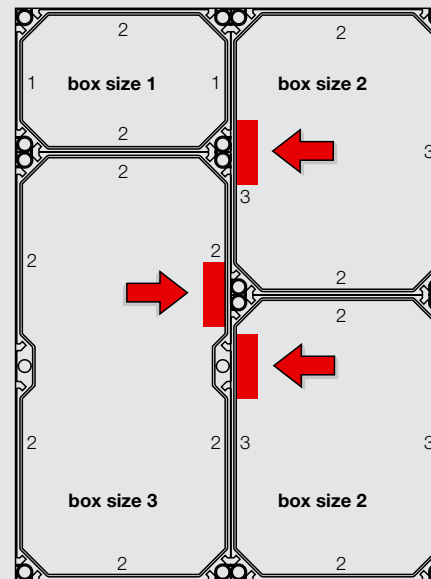
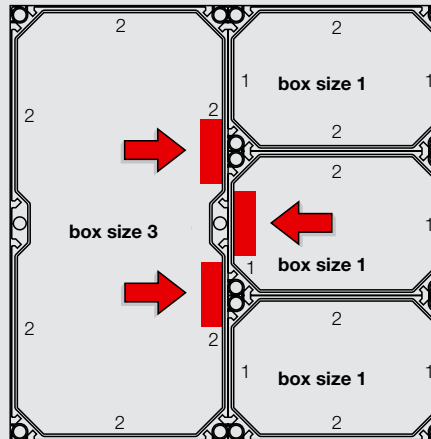
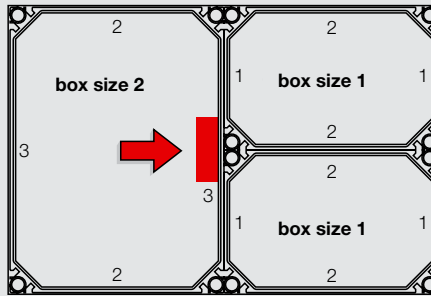
Connectors are attached to the enclosures in sufficient number. For reconstruction or extensions of existing distribution boards connectors FP GV 10 (set consists of 10 pieces) can be supplemented.


The connection of enclosures is not only coordinated with enclosures of the same size. By means of wall separators also different sized enclosures can be combined.

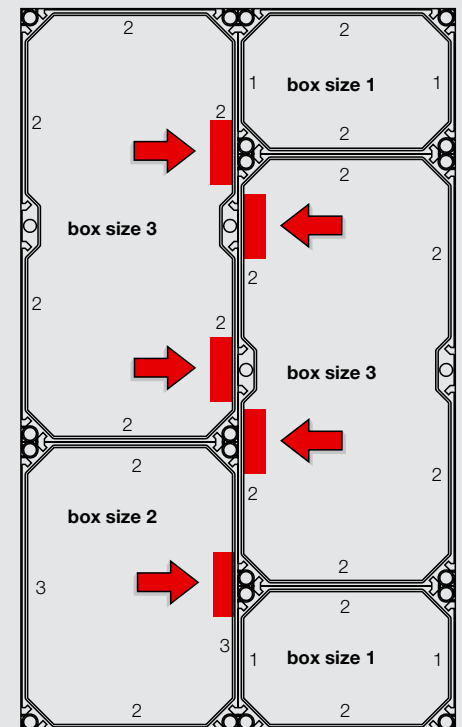
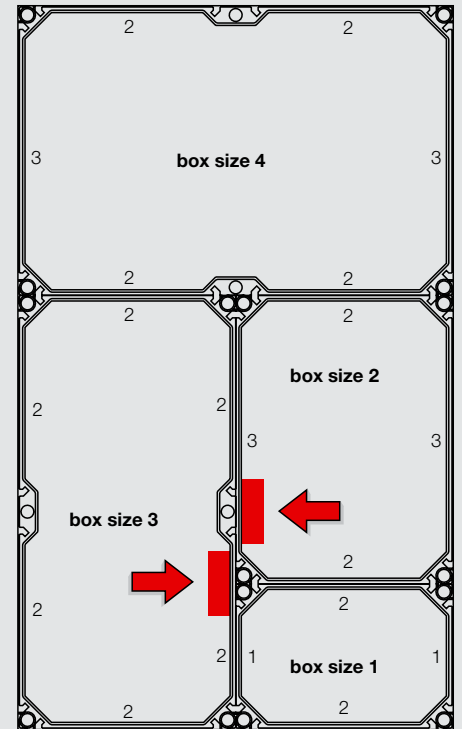
Wall separators provide for high rigidity and tightness at the connection points of the enclosures, degree of protection IP 65.



FP WT 1



 At this point a wall separator is necessary for the enclosure combination.



Box walls



Wall 1 (180 mm)

Wall opening:
100 x 80 mm



Wall 2 (270 mm)

Wall opening:
190 x 80 mm



2 x Wall 2 (270 mm)

Wall opening: 190 x 80 mm
Wall opening: 190 x 80 mm



Wall 3 (360 mm)

Wall opening:
280 x 80 mm

Assembly of enclosures with connectors and wall separators

Assembly of enclosures quickly and easily.

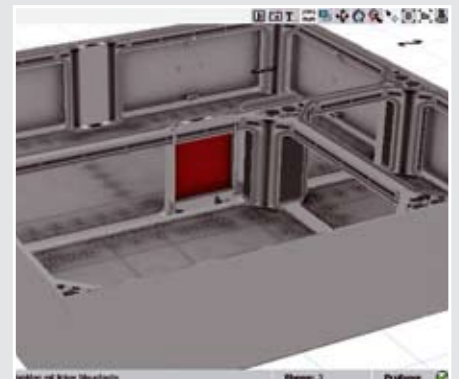
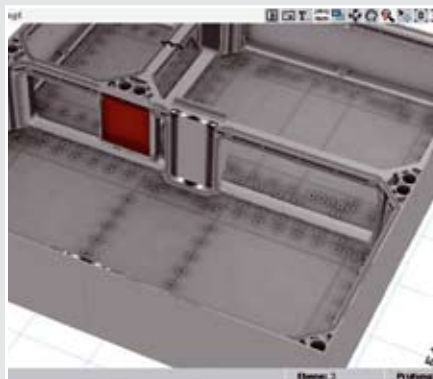
Pushing-in of connectors for the assembly of enclosures of different sizes.

Configurator **ENYGUIDE** supports project engineering

ENYGUIDE figures out independently the necessary accessories like the number of wall separators.

(Wall separators are red coloured in the drawing.)

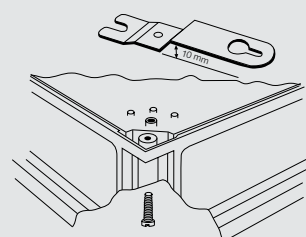
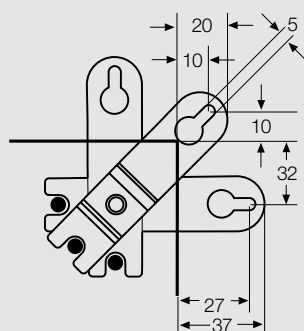
www.enyguide.eu



Wall mounting

External brackets
for external box fixing

FP AL 4 (4 pieces)



Mounting profile

for wall-mounting of ENYSTAR distribution boards, steel profile, length 1980 mm

FP MS 1

Note:

Please fix mounting profile in vertical position as possible in order to give occasion to cable routing behind the assembly.

For cutting to the required length fix mounting profile for example with a clamp to a desk.

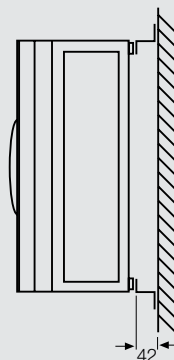
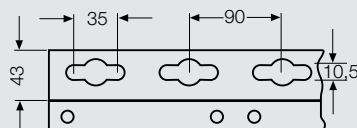


Fixing matrix of mounting profile

Transport

Regarding transportation it is recommendable to protect the assembly against deflection.

For that please screw the assembly to a solid timber.



Design and project engineering

Basis are the data for equipment assembly, technical data such as rated voltage and rated current as well as requirements to the system.

These are to be determined in site or for project engineering technical specifications respectively tender documents are available.

Configurator supports project engineering

- online via InterNet
- or offline

www.enyguide.eu

With the new configuration software the electrical specialist can provide himself fast and easily layouts and parts lists without any time-consuming program installation at the computer.

The professional planning aid plots the distribution board as precise 3-dimensional image for final customers and/or the user or as 2-dimensional drawing for the assembler.

The user can choose via several layers between the projection of assemblies, covers and doors.

ENYGUIDE figures out independently the necessary accessories like the number of wall separators or closing plates for enclosure walls.

Configurator homepage

Start directly with the project of ENYSTAR distribution boards or use the advantages of registration:

- personal project management
- user administration
- on demand the Hensel specialist can examine your project or take over your project data for the further processing.

Check list

1. Place of assembly

Building: **industrial**
Degree of protection: ☐ IP 54 ☒ IP 65
Mounting area: Width: **max. 1.50 m**
Height: **max. 1.20 m**
Depth: **max. 0.50 m**

Conditions of installation:
☐ in the locked electrical operating room
☒ in the workshops ☐ in corridors
☐ freely accessible (by unauthorized people operable)

2. Type of distribution board

ENYSTAR distribution board ...
☒ wall-mounted ☐ floor-mounted

3. Power supply data

Power supply system:
☐ TT (L1/L2/L3/N) ☒ TN (L1/L2/L3/PE/N)
Rated current of incoming supply: **160 A**

Technical specifications:

Insulation-enclosed box-type low-voltage switch-gear assembly as distribution board in accordance with IEC 60 439 Part 3 built-up of cominable enclosures with door as **wall-mounted assembly**

largest permissible dimensions:
H/W/D in mm: **1200x1500x500**

Enclosure bases with door made of thermoplastic.

Burning behaviour in accordance with IEC 60 695-2-11
Glow wire test 960°C, halogen-free.

Colour: grey, RAL 7035
transparent, lockable doors.

Incoming cables from **the floor**

Comfortable project engineering fast and easily with the planning aid configurator



The CONFIGURATOR is a professional planning aid, with which the electrical specialist can provide himself fast and easily layouts and parts lists without any time-consuming program installation at the computer.



Comfortable project engineering of ENYSTAR distribution boards with the configurator ENYGUIDE

Selection of the enclosures with electrical functions and equipment

Simply and fast positioning of the enclosures and components on the drawing page



Selection of accessories for installation and wiring

- bus-mounted fusegear
- busbar connectors
- terminals for direct busbar connection
- covers
- DIN rails
- mounting plates
- PE and N terminals
- wiring and terminals



Specification of accessory

- flanges for cable entry
- if necessary locking device for doors
- wall fixtures
- partition walls



Comfortable project engineering of ENYSTAR distribution boards with the configurator ENYGUIDE

Connection of enclosures and closing of the remaining enclosure walls

A test function determines the required accessories with the configurator independently such as the number of wall separators and closing plates for enclosure walls.

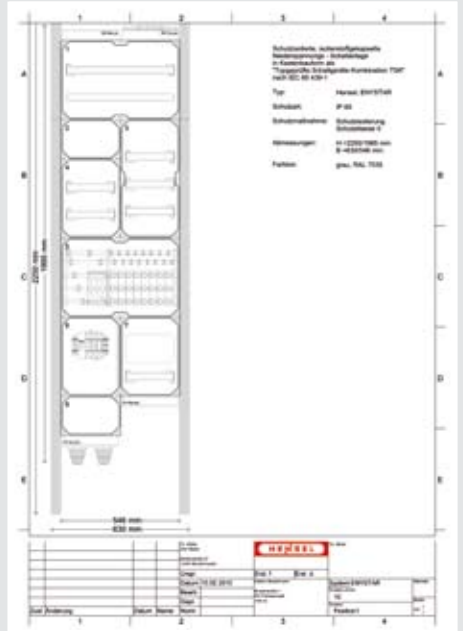


Creating an layout

fast and simply with the product configurator as 3-dimensional image for acquisition at your customer

or

as 2-dimensional drawing of the layers enclosures with equipment, covers and doors for the assembler.



Automatically creating of parts list and order list according to the layout

Kunde:		Projekt:		Druckdatum:	
Firma:	Fa. Müller	Nr.:	10		
Ansprechpartner:	Herr Müller	Name:	Fa. Müller		
Strasse Nr.:	12345 Musterhausen	Anschrift:	Musterstraße 1		
PLZ/Ort:	12345 Musterhausen	PLZ/Ort:	08115 Musterstadt		
Tel.:		Tel.:	+49 (0) 123456789		
E-Mail:	info@hensel-electric.de	E-Mail:	info@hensel-electric.de		

Nr.	Gehtaus	Typ	Menge in Stück	Bezeichnung	Grundpreis in €	Mehrwert in €
1	1.00	PP 0400	1	Leertisch mit nichtdurchdringender Tür	5,62	0,00
2	1.01	PP TS 54	2	Tragrahmen für ENYSTAR-Leertische	0,32	0,00
3	1.02	PP FM	1	Arbeitsfläche Gefällewand 270 mm	0,40	0,00
4	1.03	PP DS 02	1	Vorhängesystem M 20/25 8 x 4	0,00	0,00
5	1.04	PP VP 36	2	Deckenschiebe zum Aufbau von ENYSTAR-Tragrahmen höher 28,5 - 53,5 mm	0,00	0,00
6	1.05	PP FG 222	1	Verschlussplatte mit 2 Befestigungselementen	0,18	0,00
7	2.00	PP 0100	1	Leertisch mit integrierter Einbaueinheit	1,42	0,00
8	2.01	PP VP 18	1	Verschlussplatte mit 2 Befestigungselementen	0,08	0,00
9	3.00	PP TS 1313	1	Arbeitsfläche mit integrierter Einbaueinheit	3,95	0,00
10	3.01	PP TS 27	1	Trennwand zum Einbauen zwischen Gefäßen Breite 192 mm, Gefällewand 270 mm	0,04	0,00

Zwischensumme: 10,96 0,00

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Kunde:		Projekt:		Druckdatum:	
Firma:	Fa. Müller	Nr.:	10		
Ansprechpartner:	Herr Müller	Name:	Fa. Müller		
Strasse Nr.:	12345 Musterhausen	Anschrift:	Musterstraße 1		
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Nr.	EAN	Menge in Stück	Typ	Bezeichnung	Grundpreis in €	Mehrwert in €
1	401291103008	1	PP 0100	Leertisch mit nichtdurchdringender Tür	5,62	0,00
2	401291103001	1	PP 0120	Leertisch mit integrierter Einbaueinheit	1,42	0,00
3	401291103009	1	PP 0200	Leertisch mit integrierter Einbaueinheit	1,42	0,00
4	401291103002	1	PP 0400	Leertisch mit integrierter Einbaueinheit	5,62	0,00
5	401291103004	1	PP 0500	Leertisch mit integrierter Einbaueinheit	5,62	0,00
6	401291103007	1	PP 0600	Leertisch mit integrierter Einbaueinheit	5,62	0,00
7	401291103010	1	PP 0700	Leertisch mit integrierter Einbaueinheit	5,62	0,00
8	401291103013	1	PP 0800	Leertisch mit integrierter Einbaueinheit	5,62	0,00
9	401291103016	1	PP 0900	Leertisch mit integrierter Einbaueinheit	5,62	0,00
10	401291103019	1	PP 1000	Leertisch mit integrierter Einbaueinheit	5,62	0,00
11	401291103022	1	PP 1100	Leertisch mit integrierter Einbaueinheit	5,62	0,00
12	401291103025	1	PP 1200	Leertisch mit integrierter Einbaueinheit	5,62	0,00
13	401291103028	1	PP 1300	Leertisch mit integrierter Einbaueinheit	5,62	0,00
14	401291103031	1	PP 1400	Leertisch mit integrierter Einbaueinheit	5,62	0,00
15	401291103034	1	PP 1500	Leertisch mit integrierter Einbaueinheit	5,62	0,00
16	401291103037	1	PP 1600	Leertisch mit integrierter Einbaueinheit	5,62	0,00
17	401291103040	1	PP 1700	Leertisch mit integrierter Einbaueinheit	5,62	0,00
18	401291103043	1	PP 1800	Leertisch mit integrierter Einbaueinheit	5,62	0,00
19	401291103046	1	PP 1900	Leertisch mit integrierter Einbaueinheit	5,62	0,00
20	401291103049	1	PP 2000	Leertisch mit integrierter Einbaueinheit	5,62	0,00

Zwischensumme: 1204,76

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Step 1:

Assembly of enclosures according to layout



Step 2:

Removal of the frames with doors

ENYSTAR is an open enclosure construction for the quick assembly of distribution boards.

Bases are open in all four directions. This enables a fast and efficient assembly to distribution boards.

All gaskets are already integrated. Degree of protection IP 65.



Step 3:

Enclosure connection

All enclosures of the distribution systems are firmly connected fast and simply with connectors. Connectors are attached to the enclosures always in sufficient number.



Step 4:

To insert wall separators

Wall separators are used everywhere, where different sizes of enclosure walls are combined.

Wall separators provide for high rigidity and tightness at the connection points of the enclosures, degree of protection IP 65.



Step 5:

Closing of walls with closing plates

Closing plates are fixed with enclosure connectors.

Two enclosure connectors are always included to a closing plate.



Closing of walls with flanges for the cable entry or closing plates.

A wide range of flanges for the cable entry is available. Flanges are affixed to enclosures with connectors. Connectors are attached to the enclosures always in sufficient number.

The remaining enclosure walls are closed with closing plates.



Step 5:

Installation of cable insert

Saw the box fin.

The cable insertion is fixed by enclosure connectors and rubber entries are inserted.

The cable is fed into the box from the front.

Assembly of box fin

First sawing the box walls.

Then insert box fin and secure via wedges.



Step 6:

Device mounting via mounting plates or DIN rails

Installation devices can be fastened on mounting plates with self-threading screws.

DIN rails are mounted right away on the bottom of bases or via spacers in heights of 29.5 mm or 53.5 mm.



Step 7:

Installation of equipment in covers

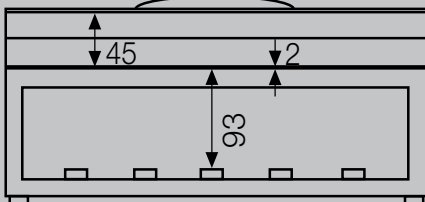
Pre-drill the cut-outs at the corners. Then saw out the cut-outs from the cover by using a piercing saw with coarse toothed saw blades for plastics (e.g. Bosch T 101B).

Install devices.



Cover is snapped in the door-frame from the rear.

Afterwards, the door-frame with door and cover is screwed on base of enclosure.



Installation depth for equipment installation in covers

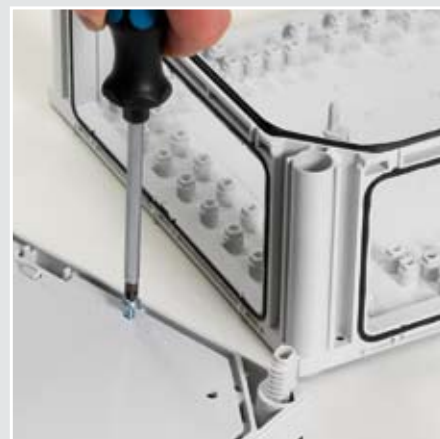
Step 8:

Sealing

Installable in all enclosures, except for enclosures for DIN rail mounted devices.

Sealing device is screwed on enclosure bottom.

Drill-out pre-moulded knock-out for sealing device (Ø 5 mm) and screw together cover with door-frame.



Subsequently, screw door-frame with door and cover on base of enclosure.

Seal the cover.



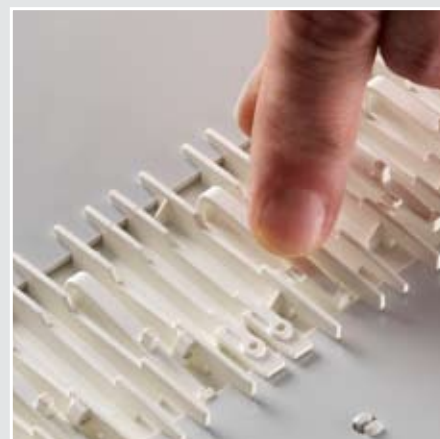
Step 9:

Sealing of unused DIN rail openings in enclosures for DIN rail equipment with attached blanking strip

Note:

Spare equipment openings in covers are to be covered with blanking strips to prevent accidental contact (blanking strips are attached for 50 % of equipment openings).

Circuit breaker boxes can be fitted with any DIN rail equipment, if per row (12 modules 12 x 18 mm) the assigned back-up fuse of 80 A won't be exceeded.



Installation of PE and N terminals in FIXCONNECT® technology

Arrow marks in the enclosure bottoms indicate the fixing position of the terminal support.



Step 10:

Connecting of busbars and wiring

Allocation of terminals for direct busbar connection to cross-section and enclosures with electrical functions.

Connection from 100 A to 250 A between busbars and built-in devices

Wiring strip

from laminated copper, insulated, supplied length 2000 mm

Mi VS 100 for rated current 100 A

Mi VS 160 for rated current 160 A

Mi VS 250 for rated current 250 A

Wiring instructions for equipment are duly to be observed (e.g. cross-sections of connectors min. ... mm²).

Wiring supply terminal

for direct connection of laminated copper wiring strip (Mi VS 160 / 250) to switchgear by means of flat contact M 10.

Connection of wiring strip 160 A and 250 A
 Mi VS ... with VA 400

Wiring strip Mi VS 100/160 and terminal for direct busbar connection KS 35 F

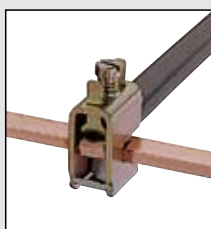
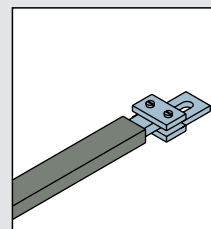
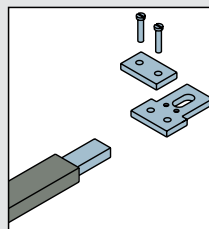
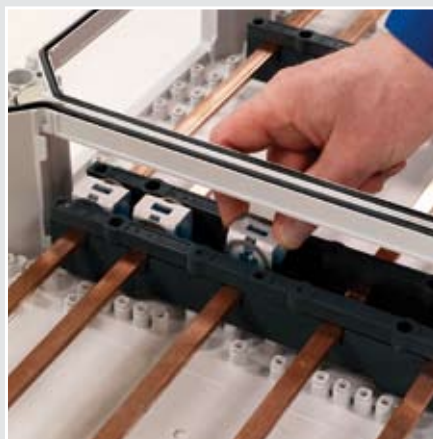
connection between busbars and built-in equipment with wiring strip Mi VS 100 or Mi VS 160 resp. Mi VS 250 and terminals for direct busbar connection KS 35 F or KS 150 F

Direct connection of copper conductor(s) to busbars with terminals for direct busbar connection KS 150 F

Direct connection of copper conductors (s) to busbars

copper conductors with KS 150 F

copper conductors with AM RK 150





ENYSTAR®