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Technical Data

Types

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

ENYSTAR Distribution Boards up to 250 A

with door, in accordance with IEC 61 439-3

- combinable enclosure system
- degree of protection IP 66
- made from polycarbonate
- protection class II, 

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Further technical information can be found on the Internet
www.hensel-electric.de -> Products



NEU

Interfaces according to IEC 61439-3

- For protected outdoor installation
- Degree of protection IP 66
- Combinable enclosure system, extendible in all directions
- 4 enclosure sizes in grid of 90 mm
- EMC compliant busbar system
- Wall- or floor-mounting

- Distribution board up to 250 A intended to be operated by ordinary persons (DBO) according to IEC 61439-3
- Protection class II up to a rated current of 250 A
- Flexible through standardised and tested kits
- Spacious connection areas
- Fulfill the requirements for operation by ordinary persons (DBO)

Installation
and ambient
conditions



Operation
and
maintenance

BLACK BOX

with the 4 interfaces
for the rating of
power switchgear
assemblies



ENYSTAR
Distribution Board

Combinable enclosure system,
insulation-enclosed, totally insulated, IP 66,
**for the assembly of
distribution boards up to 250 A
intended to be operated by ordi-
nary persons (DBO) according to
IEC 61439-3**

The requirements of all installed electrical functions
demonstrate compliance with the applicable require-
ments of IEC 61439-3.

I_{nc} and RDF must be specified in the documentation.

Electrical circuits
and consumers



Connection to the
electrical network

- Electric circuit / final circuit
- Circuit-breaker up to 250 A
- Switch disconnector up to 250 A
- Fuse switch disconnector up to 250 A
- Bus-mounted fuse base up to 63 A
- Connection with cable from above / from below
- Connection: conductors from copper / aluminium
- Optional connection of CEE sockets according to EN 60309 and sockets with earthing contact according to DIN 49440-1

- Rated voltage $U_N = 690 \text{ V a.c.} / 1000 \text{ V d.c.}$
- Rated current I_N up to 250 A
- Circuit-breaker up to 250 A
- Switch disconnector up to 250 A
- Fuse switch disconnector up to 250 A
- 5-conductor systems
- Connection with cable from above / from below

NEU IEC 61439 causes new product presentation

IEC 61439 - the standard for the assembly of switchgear assemblies and distribution boards - determines the safety requirements for electrical equipment for the compliance of protection objectives for people and facilities. Requirements for products are more clearly defined and a new terminology is introduced.

BLACK BOX Specification

The designer specifies a switchgear assembly by defining the interface parameters as BLACK BOX. Based on these interface specifications the manufacturer of a switchgear assembly has to rate and define the structure of the switchgear assembly.

Product presentation in media changed significantly

The standard has an effect as well on the documentation of products. Additional information, such as the rated current of circuits and the number of circuits, are now listed for each product as they are now required by designers and manufacturers for the construction of switchgear assemblies.

This catalog presents ENYSTAR empty- and circuit breaker boxes.

Further enclosures with electrical functions for the assembly of ENYSTAR distribution boards up to 250 A, for example, with built-in busbars, circuit breakers, etc., see at: www.hensel-electric.de



Further technical information can be found on the Internet

www.hensel-electric.de -> Products



Combinable enclosure system with doors



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



Quick assembly




Multikey for door locking systems

Distribution Boards up to 250 A with Door

combinable enclosure system

insulation-enclosed, degree of protection IP 66, made from polycarbonate for the assembly of distribution boards up to 250 A intended to be operated by ordinary persons in accordance with IEC 61 439-3

Distribution Boards up to 250 A with Door

- for indoor and protected outdoor installation
- dust-proof and protected against water (IP 66)
- 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

Multikey

Besides the standard locking system for tool-operation with slot screwdriver ENYSTAR doors can be operated as well with triangle 8 mm, square lock 8mm and double-bit. All four locking systems are operated by a Multitkey.

	Environmental conditions	<p>Ambient temperature</p> <ul style="list-style-type: none"> ■ for distribution boards in accordance with IEC 61 439-3: -5° C up to 35° C, max. + 40° C Relative humidity: 50% at 40° C, 100% at 25° C ■ for empty enclosures: - 25°C up to + 70° C <p>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 and harsh environment</p> <p>However the climatic influences and effects on the equipment are to be considered, see Technical Details: Operating and Ambient Conditions</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 66</p>
	Protection against ingress of water with harmful effects	<p>Protected against water degree of protection IP 66</p>
	Electrical parameters	<p>Rated current: 250 A Rated insulation voltage ¹⁾: AC 690 V, DC 1000 V, IEC 60 664 ¹⁾ the rated insulation voltage is possibly reduced by the installed equipment technology</p>

Dependent on the system

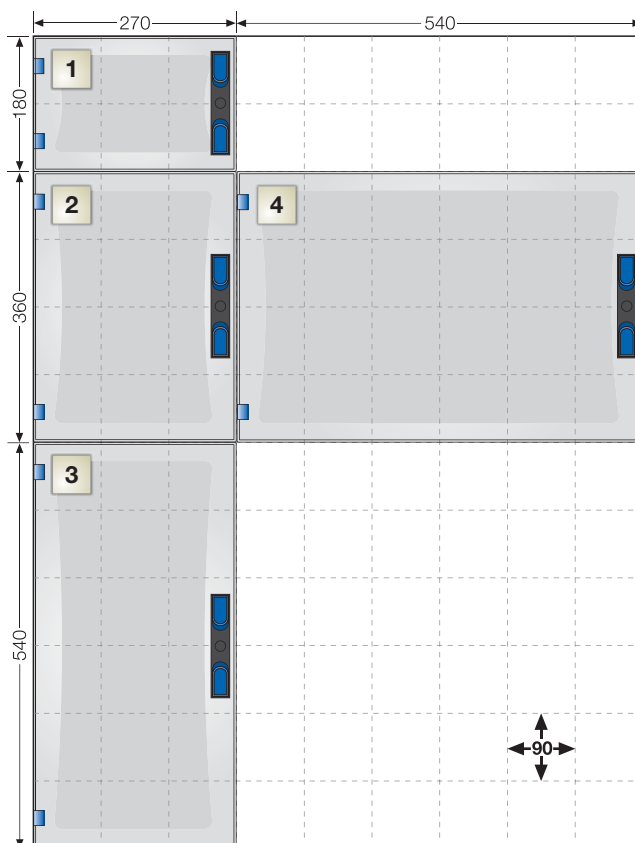
Material: Polycarbonate

	Burning behaviour	<p>Glow wire test 960°C in accordance with IEC 60 695-2-11 flame-retardant, self-extinguishing</p>
	UV resistance	<p>UV resistance according to IEC 61 439-1 The material is examined for UV resistance</p>
	Chemical resistance	<p>Resistance against acid 10% and alkaline 10%, petrol and mineral oil</p>
	Toxic behaviour	<p>Silicone- and halogen-free</p>
	Corrosion resistance	<p>Resistant to weather influences such as humidity, temperature, wind</p>

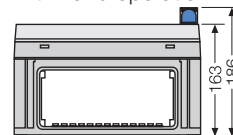
Dependent on material

Combinable distribution boards with door

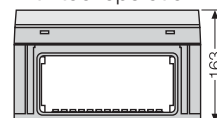
- modular structure of enclosures in grid of 90 mm
- 4 enclosure sizes:
270 x 180 mm,
270 x 360 mm,
270 x 540 mm and
540 x 360 mm
- to assemble fast and simply
to larger combinations
- Order closing plate sets,
single closing plates
and flanges separately.



Enclosure depth

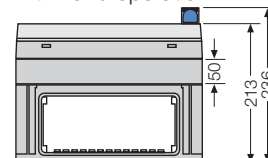


with tool operation

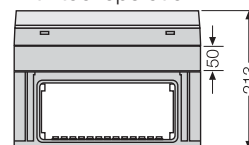


Extension frame

for extending installation
depths by 50 mm
with hand operation



with tool operation



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



Empty enclosures
and circuit breaker boxes additionally
with closing plate sets for closing
enclosure walls



Enclosure walls
closed via closing plates



Flanges to be
ordered separately

Assignment of box walls

The assignment of box walls
is effected via wall symbols
that are assigned to each
product. The individual figures
2 give an indication, which
wall is concerned.

All box walls are listed in the
fold-out of the coverpages.



ENYSTAR®

Distribution boards

Box walls



Wall 1 (180 mm)

Wall opening:
100 x 80 mm



Wall 2 (270 mm)

Wall opening:
190 x 80 mm



Wall 3 (360 mm)

Wall opening:
280 x 80 mm



Wall 4 (540 mm)

Wall opening:
2 x 190 x 80 mm

Combinable distribution boards with door



Empty enclosures
door locking
with **hand operation**
Operation and access also
by unskilled persons



Empty enclosures
door locking
with **tool operation**
Access and operation
only by skilled persons



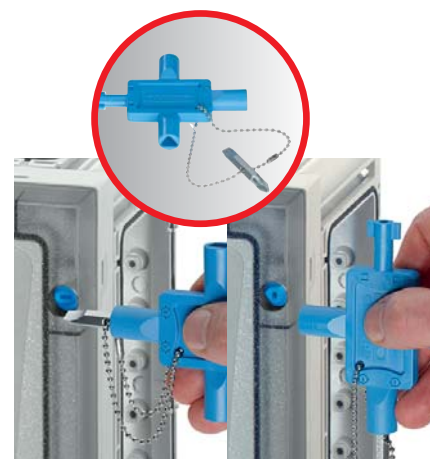
Circuit breaker boxes



- Hand-operated locking facilities in areas, where electrotechnical unskilled persons operate equipment



- Locking option with key mit Schlüssel prevents unauthorized access



- Multikey for door locking systems: Standard locking system for tool-operation with slot screwdriver and triangle 8 mm, optional square lock 8 mm and double-bit.

Combinable enclosures with door and closing plates

Empty enclosures and circuit breaker boxes **with closing plates**

Flanges to be ordered separately





Can be combined and extended in all directions

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.

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



Combination of enclosures in **vertical** direction.



Combination of enclosures in **horizontal** direction.



Distribution boards intended to be operated by ordinary persons

Example 1:
Distribution board with 72 modules (6 x 12 x 18 mm) built-up of 2 x FP 1318 with closing plates

Example 2:
Distribution board with 125 A feeding, 36 modules (3 x 12 x 18 mm) and a terminal box for PE and N



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 via safe plug connectors.

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



Distribution Boards up to 250 A According to IEC 61 439-3 „Distribution Boards Intended to Be Operated by Ordinary Persons“

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 66: 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 special requirements in commercial and industrial applications ...

- Total insulated enclosures, protection class II
- High degree of protection IP 66: 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 with clearly separated functional areas!

- Modular design for clear separation of 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



Operation
also by electrotechnical unskilled persons



Requirements in accordance with IEC 61 439-3:

1. Only installation equipment, like series built-in equipment, fuses up to 63 A, circuit-breakers and IT-components are permitted. For the access a tool-operated door locking facility is **NOT** necessary.
2. Other switching devices must be installed behind separate lids or doors, which can only be opened using a tool: **protection against direct contact with hazardous live parts IP XXC.**

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.



■ Device mounting via DIN rails



■ Device mounting via mounting plates



■ Individual device installation into covers



■ Hand-operated doors in areas to which unskilled persons have access for operating devices



■ Tool-operated doors in areas to which only an electrical skilled person may have access



■ Facilities for earth connection according to British Standard

**Empty enclosures
with transparent doors**

 door locking with
hand-operation

FP 0140
built-in dimensions
216x126x140 mm

FP 0141
built-in dimensions
216x126x140 mm
with closing plates

FP 0240
built-in dimensions
216x306x140 mm

FP 0241
built-in dimensions
216x306x140 mm
with closing plates

FP 0340
built-in dimensions
216x486x140 mm

FP 0341
built-in dimensions
216x486x140 mm
with closing plates

FP 0440
built-in dimensions
486x306x140 mm

FP 0441
built-in dimensions
486x306x140 mm
with closing plates

FP 0461
built-in dimensions
306x486x140 mm
with closing plates

**Empty enclosures
with opaque doors**

 door locking with
hand-operation

FP 0150
built-in dimensions
216x126x140 mm

FP 0151
built-in dimensions
216x126x140 mm
with closing plates

FP 0250
built-in dimensions
216x306x140 mm

FP 0251
built-in dimensions
216x306x140 mm
with closing plates

FP 0350
built-in dimensions
216x486x140 mm

FP 0351
built-in dimensions
216x486x140 mm
with closing plates

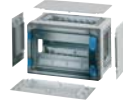
FP 0450
built-in dimensions
486x306x140 mm

FP 0451
built-in dimensions
486x306x140 mm
with closing plates

FP 0471
built-in dimensions
306x486x140 mm
with closing plates

**Circuit breaker boxes
for DIN rail equipment
up to 63 A**

with PE/N terminals


FP 1109
1x9x18 mm

FP 1108
1x9x18 mm
with closing
plates

FP 1219
2x12x18 mm

FP 1218
2x12x18 mm
with closing
plates

FP 1319
3x12x18 mm

FP 1318
3x12x18 mm
with closing
plates

FP 1409
2x27x18 mm
with closing
plates

FP 1408
2x27x18 mm
with closing
plates

FP 1418
3x17x18 mm
with closing
plates

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

**Automatengehäuse
for DIN rail equipment
up to 100 A**

without PE/N terminals


FP 1101
1x12x18 mm

FP 1249
2x12x18 mm

FP 1349
3x12x18 mm

FP 1439
2x27x18 mm

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

FP 1100
Terminal box

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

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

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

**Empty enclosures
with transparent doors**

door locking with
tool-operation



FP 0100
built-in dimensions
216x126x140 mm



FP 0101
built-in dimensions
216x126x140 mm
with closing plates



FP 0210
built-in dimensions
216x306x140 mm



FP 0211
built-in dimensions
216x306x140 mm
with closing plates



FP 0310
built-in dimensions
216x486x140 mm



FP 0311
built-in dimensions
216x486x140 mm
with closing plates



FP 0400
built-in dimensions
486x306x140 mm



FP 0401
built-in dimensions
486x306x140 mm
with closing plates



FP 0411
built-in dimensions
306x486x140 mm
with closing plates

**Empty enclosures
with opaque doors**

door locking with
tool-operation



FP 0120
built-in dimensions
216x126x140 mm



FP 0121
built-in dimensions
216x126x140 mm
with closing plates



FP 0230
built-in dimensions
216x306x140 mm



FP 0231
built-in dimensions
216x306x140 mm
with closing plates



FP 0330
built-in dimensions
216x486x140 mm
with closing plates



FP 0331
built-in dimensions
216x486x140 mm
with closing plates



FP 0420
built-in dimensions
486x306x140 mm



FP 0421
built-in dimensions
486x306x140 mm
with closing plates



FP 0431
built-in dimensions
306x486x140 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.

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

Info

**Further technical information can
be found on the Internet**
www.hensel-electric.de -> Products

Empty Boxes with Transparent Door

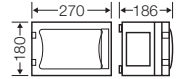
Operation and Access also by Unskilled Persons



FP 0140

Built-in dimensions W 216 x H 126 x D 140 mm
door locking with hand operation

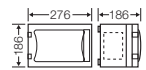
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 1
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0141

Built-in dimensions W 216 x H 126 x D 140 mm
door locking with hand operation
with closing plates for box walls

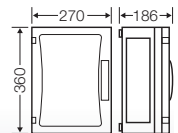
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 1
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



FP 0240

Built-in dimensions W 216 x H 306 x D 140 mm
door locking with hand operation

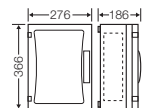
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 2
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0241

Built-in dimensions W 216 x H 306 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 2
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



ATTENTION

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

Empty Boxes with Transparent Door

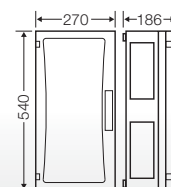
Operation and Access also by Unskilled Persons



FP 0340

Built-in dimensions W 216 x H 486 x D 140 mm
door locking with hand operation

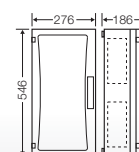
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 3
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 0341

Built-in dimensions W 216 x H 486 x D 140 mm
door locking with hand operation
with closing plates for box walls

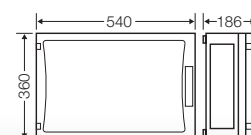
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 3
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



FP 0440

Built-in dimensions W 486 x H 306 x D 140 mm
door locking with hand operation

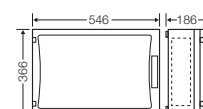
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 4
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 0441

Built-in dimensions W 486 x H 306 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 4
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



ATTENTION

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

Empty Boxes with Transparent Door

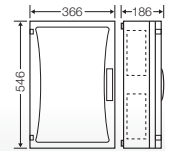
Operation and Access also by Unskilled Persons



FP 0461

Built-in dimensions W 306 x H 486 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 4
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



ATTENTION

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

Empty Boxes with Opaque Door

Operation and Access also by Unskilled Persons



FP 0150

Built-in dimensions W 216 x H 126 x D 140 mm
door locking with hand operation

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 1
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0151

Built-in dimensions W 216 x H 126 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 1
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



FP 0250

Built-in dimensions W 216 x H 306 x D 140 mm
door locking with hand operation

- box size 2
- with opaque door
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0251

Built-in dimensions W 216 x H 306 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 2
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



ATTENTION

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

Empty Boxes with Opaque Door

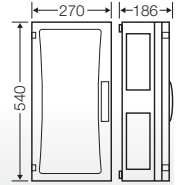
Operation and Access also by Unskilled Persons



FP 0350

Built-in dimensions W 216 x H 486 x D 140 mm
door locking with hand operation

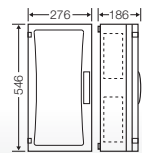
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 3
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 0351

Built-in dimensions W 216 x H 486 x D 140 mm
door locking with hand operation
with closing plates for box walls

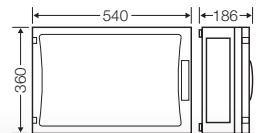
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 3
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



FP 0450

Built-in dimensions W 486 x H 306 x D 140 mm
door locking with hand operation

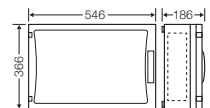
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 4
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 0451

Built-in dimensions W 486 x H 306 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 4
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



ATTENTION

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

Empty Boxes with Opaque Door

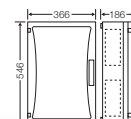
Operation and Access also by Unskilled Persons



FP 0471

Built-in dimensions W 306 x H 486 x D 140 mm
door locking with hand operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 4
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



ATTENTION

Built-in equipment must be suitable for operation by electrotechnical unskilled persons and has to be protected by a cover against direct contact with hazardous life parts.

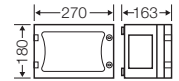
Empty Boxes with Transparent Door
Access and Operation Only by Skilled Persons



FP 0100

Built-in dimensions W 216 x H 126 x D 140 mm
door fastener with tool operation

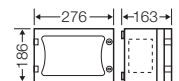
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 1
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0101

Built-in dimensions W 216 x H 126 x D 140 mm
door fastener with tool operation
with closing plates for box walls

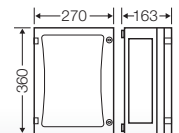
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 1
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



FP 0210

Built-in dimensions W 216 x H 306 x D 140 mm
door fastener with tool operation

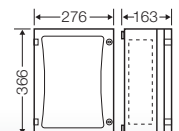
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 2
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0211

Built-in dimensions W 216 x H 306 x D 140 mm
door fastener with tool operation
with closing plates for box walls

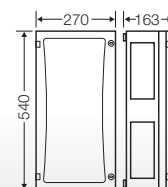
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 2
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



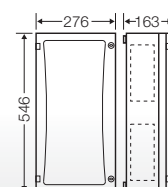
Empty Boxes with Transparent Door
Access and Operation Only by Skilled Persons

FP 0310
**Built-in dimensions W 216 x H 486 x D 140 mm
door fastener with tool operation**

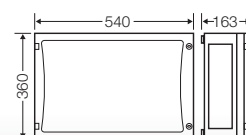
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 3
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately


FP 0311
**Built-in dimensions W 216 x H 486 x D 140 mm
door fastener with tool operation
with closing plates for box walls**

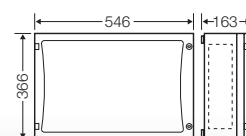
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 3
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately


FP 0400
**Built-in dimensions W 486 x H 306 x D 140 mm
door fastener with tool operation**

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 4
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately


FP 0401
**Built-in dimensions W 486 x H 306 x D 140 mm
door fastener with tool operation
with closing plates for box walls**

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 4
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



Empty Boxes with Transparent Door

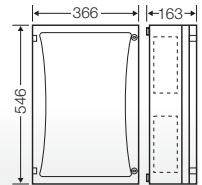
Access and Operation Only by Skilled Persons



FP 0411

Built-in dimensions W 306 x H 486 x D 140 mm
door fastener with tool operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- box size 4
- with transparent door
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



Empty Boxes with Opaque Door

Access and Operation Only by Skilled Persons



FP 0120

**Built-in dimensions W 216 x H 126 x D 140 mm
door fastener with tool operation**

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 1
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0121

**Built-in dimensions W 216 x H 126 x D 140 mm
door fastener with tool operation**

with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 1
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



FP 0230

**Built-in dimensions W 216 x H 306 x D 140 mm
door fastener with tool operation**

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 2
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 0231

**Built-in dimensions W 216 x H 306 x D 140 mm
door fastener with tool operation**

with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 2
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 4 items
- order flanges separately



Empty Boxes with Opaque Door

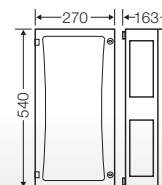
Access and Operation Only by Skilled Persons



FP 0330

Built-in dimensions W 216 x H 486 x D 140 mm
door fastener with tool operation

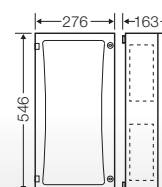
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 3
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 0331

Built-in dimensions W 216 x H 486 x D 140 mm
door fastener with tool operation
with closing plates for box walls

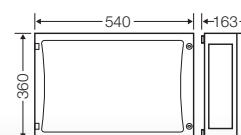
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 3
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



FP 0420

Built-in dimensions W 486 x H 306 x D 140 mm
door fastener with tool operation

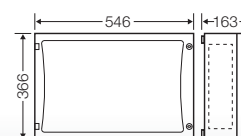
- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 4
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 0421

Built-in dimensions W 486 x H 306 x D 140 mm
door fastener with tool operation
with closing plates for box walls

- max. installation depth with built-in mounting plate 136 mm, with built-in DIN rail 125 mm
- with opaque door
- box size 4
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



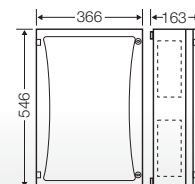
Empty Boxes with Opaque Door

Access and Operation Only by Skilled Persons

FP 0431

**Built-in dimensions W 306 x H 486 x D 140 mm
door fastener with tool operation
with closing plates for box walls**

- max. installation depth with built-in mounting plate 136 mm,
with built-in DIN rail 125 mm
- with opaque door
- box size 4
- door locking sealable
- please order DIN rails, mounting plates or covers additionally
- connector: 6 items
- order flanges separately



Circuit Breaker Boxes

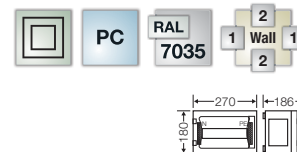
for the Installation of DIN rail Equipment up to 63 A
Operation and Access also by Unskilled Persons



FP 1109

9 modules: 1 x 9 x 18 mm

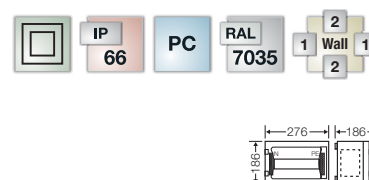
- 1-row
- box size 1
- FIXCONNECT® plug-in terminal technology for PE and N
- PE/N 2 x 25 mm², 8 x 4 mm², Cu each
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 1108

9 modules: 1 x 9 x 18 mm
with closing plates for box walls

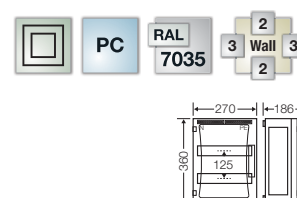
- 1-row
- box size 1
- FIXCONNECT® plug-in terminal technology for PE and N
- PE/N 2 x 25 mm², 8 x 4 mm², Cu each
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- order flanges separately



FP 1219

24 modules: 2 x 12 x 18 mm

- 2-row
- box size 2
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 3 x 25 mm², 12 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking sealable
- door locking with hand operation
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



Circuit Breaker Boxes

for the Installation of DIN rail Equipment up to 63 A

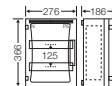
Operation and Access also by Unskilled Persons



FP 1218

24 modules: 2 x 12 x 18 mm
with closing plates for box walls

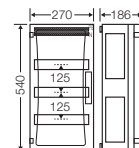
- 2-row
- box size 2
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 3 x 25 mm², 12 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- order flanges separately



FP 1319

36 modules: 3 x 12 x 18 mm

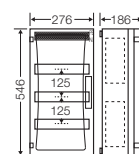
- 3-row
- box size 3
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 6 x 25 mm², 24 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 1318

36 modules: 3 x 12 x 18 mm
with closing plates for box walls

- 3-row
- box size 3
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 6 x 25 mm², 24 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order flanges separately



Circuit Breaker Boxes

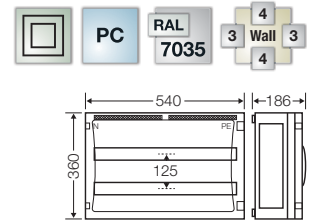
for the Installation of DIN rail Equipment up to 63 A

Operation and Access also by Unskilled Persons

FP 1409

54 modules: 2 x 27 x 18 mm

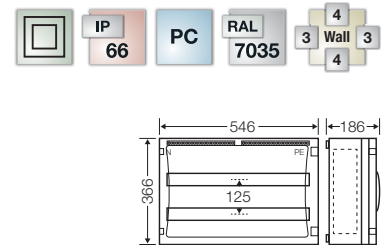
- 2-row
- box size 4
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 6 x 25 mm², 24 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 1408

54 modules: 2 x 27 x 18 mm
with closing plates for box walls

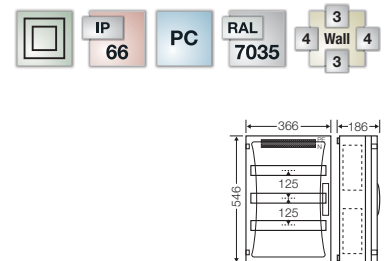
- 2-row
- box size 4
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 6 x 25 mm², 24 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order flanges separately



FP 1418

51 modules: 3 x 17 x 18 mm
with closing plates for box walls

- 3-row
- box size 4
- FIXCONNECT® plug-in terminal technology for PE and N
- per PE/N 6 x 25 mm², 24 x 4 mm², Cu
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order flanges separately



Circuit Breaker Boxes

for the Installation of DIN rail Equipment up to 63 A

Operation and Access also by Unskilled Persons

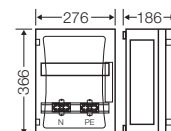
FP 1211

12 modules: 1 x 12 x 18 mm

for miniature circuit breakers (MCB)



- 1-row
- box size 2
- with 1 DIN rail 216 mm wide (for installation depth of 72 mm)
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- per PE/N 2 x 25 mm², 4 x 16 mm², Cu
- cover can be sealed
- with lockable blanking strips
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



Circuit Breaker Boxes

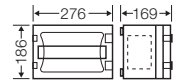
for the Installation of DIN rail Equipment up to 63 A

Operation and Access also by Unskilled Persons

FP 1105

12 modules: 1 x 12 x 18 mm
without PE and N terminal
with closing plates for box walls

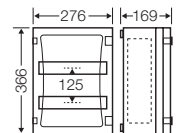
- 1-row
- box size 1
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- order PE/N terminals separately
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- walls closed with closing plates, closing plate set included
- order flanges separately



FP 1215

24 modules: 2 x 12 x 18 mm
without PE and N terminal
with closing plates for box walls

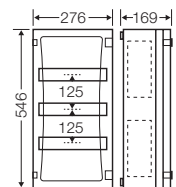
- 2-row
- box size 2
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- walls closed with closing plates, closing plate set included
- order flanges separately



FP 1315

36 modules: 3 x 12 x 18 mm
without PE and N terminal
with closing plates for box walls

- 3-row
- box size 3
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- walls closed with closing plates, closing plate set included
- order flanges separately





Circuit Breaker Boxes

for the Installation of DIN rail Equipment up to 63 A

Operation and Access also by Unskilled Persons

FP 1415

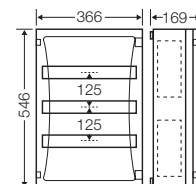
51 modules: 3 x 17 x 18

without PE and N terminal

with closing plates for box walls



- 3-row
- box size 4
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- walls closed with closing plates, closing plate set included
- order flanges separately



Circuit Breaker Boxes

for the Installation of DIN rail Equipment up to 63 A

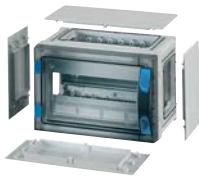
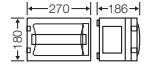
Operation and Access also by Unskilled Persons



FP 1106

12 modules: 1 x 12 x 18 mm
without PE and N terminal

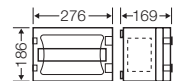
- 1-row
- box size 1
- order PE/N terminals separately
- with installation of a PE/N terminal the number of modules is reduced to 1 x 9 x 18 mm
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 1107

12 modules: 1 x 12 x 18 mm
without PE and N terminal
with closing plates for box walls

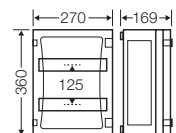
- 1-row
- box size 1
- order PE/N terminals separately
- with installation of a PE/N terminal the number of modules is reduced to 1 x 9 x 18 mm
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 4 items
- walls closed with closing plates, closing plate set included
- order flanges separately



FP 1216

24 modules: 2 x 12 x 18 mm
without PE and N terminal

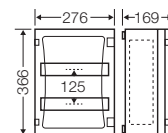
- 2-row
- box size 2
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



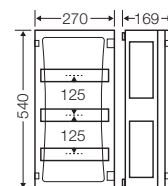
Circuit Breaker Boxes
for the Installation of DIN rail Equipment up to 63 A
Operation and Access also by Unskilled Persons

FP 1217
**24 modules: 2 x 12 x 18 mm
without PE and N terminal
with closing plates for box walls**

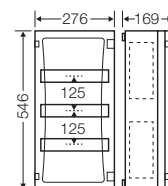
- 2-row
- box size 2
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 4 items
- walls closed with closing plates, closing plate set included
- order flanges separately


FP 1316
**36 modules: 3 x 12 x 18 mm
without PE and N terminal**

- 3-row
- box size 3
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately


FP 1317
**36 modules: 3 x 12 x 18 mm
without PE and N terminal
with closing plates for box walls**

- 3-row
- box size 3
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 6 items
- walls closed with closing plates, closing plate set included
- order flanges separately



Circuit Breaker Boxes

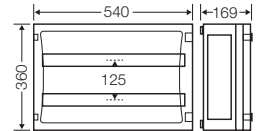
for the Installation of DIN rail Equipment up to 63 A

Operation and Access also by Unskilled Persons

FP 1406

54 modules: 2 x 27 x 18 mm
without PE and N terminal

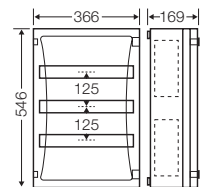
- 2-row
- box size 4
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 1417

51 modules: 3 x 17 x 18
without PE and N terminal
with closing plates for box walls

- 3-row
- box size 4
- order PE/N terminals separately
- for installation of DIN rail equipment up to 63 A in accordance with DIN 43880
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- with removable DIN rail rack and earth connection
- connector: 6 items
- walls closed with closing plates, closing plate set included
- order flanges separately



Circuit Breaker Boxes

for the Installation of DIN rail Equipment up to 100 A

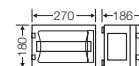
Operation and Access also by Unskilled Persons



FP 1101

**12 modules: 1 x 12 x 18 mm
without PE and N terminal**

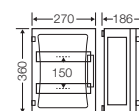
- 1-row
- box size 1
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- use enclosure FP 1100 for N/PE terminals
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 1249

**24 modules: 2 x 12 x 18 mm
without PE and N terminal**

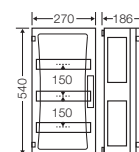
- 2-row
- box size 2
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- use enclosure FP 1100 for N/PE terminals
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 1349

**36 modules: 3 x 12 x 18 mm
without PE and N terminal**

- 3-row
- box size 3
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- use enclosure FP 1100 for N/PE terminals
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



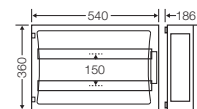
Circuit Breaker Boxes

for the Installation of DIN rail Equipment up to 100 A
Operation and Access also by Unskilled Persons

FP 1439

54 modules: 2 x 27 x 18 mm
without PE and N terminal

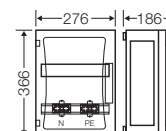
- 2-row
- box size 4
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- use enclosure FP 1100 for N/PE terminals
- with transparent door
- door locking with hand operation
- door locking sealable
- with blanking strips for unused DIN rail openings
- with labelling strips
- connector: 6 items
- order closing plate sets, single closing plates and flanges separately



FP 1211

12 modules: 1 x 12 x 18 mm
for miniature circuit breakers (MCB)

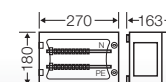
- 1-row
- box size 2
- with 1 DIN rail 216 mm wide (for installation depth of 72 mm)
- for installation of DIN rail equipment up to 100 A in accordance with DIN 43 880
- per PE/N 2 x 25 mm², 4 x 16 mm², Cu
- cover can be sealed
- with lockable blanking strips
- connector: 4 items
- order closing plate sets, single closing plates and flanges separately



FP 1100

Terminal box
per PE+N 12 x 1.5-16 mm², Cu, 1 x 4-35 mm², Cu

- rated current: 125 A
- box size 1
- with opaque door
- door fastener with tool operation
- door locking sealable
- order closing plate sets, single closing plates and flanges separately





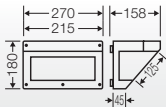
Connection Box	250
Extension frames, DIN rails, spacer	251
Mounting plates for the installation of devices	252
Covers, sealing device for covers	253
Partition, blanking strips	254
PE / N terminals, main line branch terminals	255 - 257
Wall separators, closing plates	258 - 259
Metal inserts for closing plates	260
Flanges	261 - 262
Canopy	263
Ventilation / pressure compensation	264 - 265
Connectors, facility for sealing, Conversion kit for door fastener, door lock, dust protection cover, external brackets, mounting profiles	266 - 267



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



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.

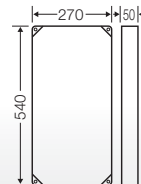




FP ZR 30

Extension frame for enclosures size 3

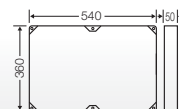
- for extension of the installation depth by 50 mm
- inclusive fixing material
- suitable for the admission of cover FP AP 30 in different installation depths



FP ZR 40

Extension frame for enclosure size 4

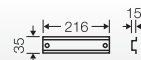
- for extension of the installation depth by 50 mm
- inclusive fixing material
- suitable for the admission of cover FP AP 40 in different installation depths



FP TS 27

DIN rail length 216 mm

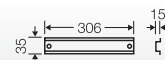
- in accordance with DIN EN 60715
- for ENYSTAR empty boxes sizes 1, 2 and 3
- for equipment or terminals with clip-on mounting
- with fixing screws



FP TS 36

DIN rail length 306 mm

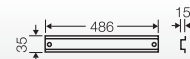
- in accordance with DIN EN 60715
- for ENYSTAR empty boxes sizes 2 and 4
- for equipment or terminals with clip-on mounting
- with fixing screws



FP TS 54

DIN rail length 486 mm

- in accordance with DIN EN 60715
- for ENYSTAR empty boxes sizes 3 and 4
- for equipment or terminals with clip-on mounting
- with fixing screws



FP DS 02

Spacer height: 29.5 mm or 53.5 mm

- for spacing DIN rails ENYSTAR
- 2 pieces
- with fixing screws for fixing on bottoms



FP MP 10

Mounting plate
W 216 x H 126 mm

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

Lami-
nated
paper



FP MP 20

Mounting plate
W 216 x H 306 mm

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

Lami-
nated
paper

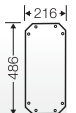


FP MP 30

Mounting plate
W 216 x H 486 mm

- for ENYSTAR empty boxes sizes 3 and 4
- material thickness 4 mm
- with fixing screws

Lami-
nated
paper



FP MP 40

Mounting plate
W 486 x H 306 mm

- for ENYSTAR empty boxes size 4
- material thickness 4 mm
- with fixing screws

Lami-
nated
paper



FP BZ 13

Fixing screw
length 13 mm

- 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

Example:





FP AP 10

Cover without cut-outs
W 220 x H 130 mm

- for ENYSTAR enclosure size 1
- for retrofitting
- as protection cover or for installation of equipment



FP AP 20

Cover without cut-outs
W 220 x H 310 mm

- for ENYSTAR enclosure size 2
- for retrofitting
- as protection cover or for installation of equipment



FP AP 30

Cover without cut-outs
W 220 x H 490 mm

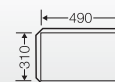
- for ENYSTAR enclosure size 3
- for retrofitting
- as protection cover or for installation of equipment



FP AP 40

Cover without cut-outs
W 490 x H 310 mm

- for ENYSTAR enclosure size 4
- for retrofitting
- as protection cover or for installation of equipment



FP PL 2

Sealing device for covers
not suitable for circuit-breaker boxes

- can be retrofitted
- 2 pieces
- with fixing screws

Example:





FP TW 18

Partition
180 mm

- to push-in between enclosures



FP TW 27

Partition
270 mm

- to push-in between enclosures



FP TW 36

Partition
360 mm

- to push-in between enclosures
- except between two busbar boxes



AS 12

Blanking strip
12 modules

- 12 x 18 mm, divisible every 9 mm
- for the covering of spare equipment openings, for material thickness up to 3 mm



AS 18

Blanking strip
18 modules

- 18 x 18 mm, divisible every 9 mm
- for the covering of spare equipment openings, for material thickness up to 3 mm



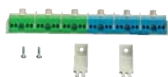


FC PN 20

PE and N terminal

PE/N 2 x 25 mm², 8 x 4 mm², Cu each

- for installation on DIN rails in accordance with IEC 60 715, top hat profile 35 mm
- for boxes with 1 x 12 modules (through terminal reduction to 9 modules)
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- current carrying capacity: 80 A

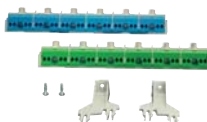


FP FC 24

PE and N terminal

per PE/N 3 x 25 mm², 12 x 4 mm², Cu

- for enclosures with 2 x 12 modules
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- with fixing screws
- current carrying capacity: 80 A
- N separable for various potentials

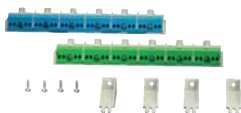


FP FC 36

PE and N terminal

per PE/N 6 x 25 mm², 24 x 4 mm², Cu

- for enclosures with 3 x 12 modules
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- with fixing screws
- current carrying capacity: 80 A
- N separable for various potentials

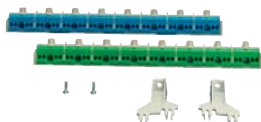


FP FC 54

PE and N terminal

per PE/N 6 x 25 mm², 24 x 4 mm², Cu

- for enclosures with 2 x 27 modules
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- with fixing screws
- current carrying capacity: 80 A
- N separable for various potentials



FP FC 51

PE and N terminal

per PE/N 8 x 25 mm², 32 x 4 mm², Cu

- for enclosures with 3 x 17 modules
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- with fixing screws
- current carrying capacity: 80 A
- N separable for various potentials

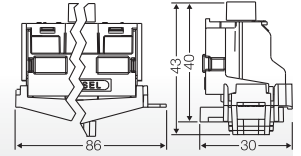


FC PE 10

PE terminal

2 x 25 mm², 8 x 4 mm², Cu

- for boxes with 1 x 12 modules (through terminal reduction to 9 modules)
- for installation on DIN rails in accordance with IEC 60 715, top hat profile 35 mm
- FIXCONNECT® plug-in technology, for terminal technology refer to index technical data
- current carrying capacity: 80 A



FP FC 054

PE terminal

6 x 25 mm², 24 x 4 mm², Cu

- for enclosures with 2 x 12 modules, 3 x 12 modules, 2 x 27 modules
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- with fixing screws
- current carrying capacity: 80 A



FP FC 051

PE terminal

8 x 25 mm², 32 x 4 mm², Cu

- for enclosures with 3 x 17 modules
- FIXCONNECT® plug-in terminal technology, for terminal technology refer to technical data
- with fixing screws
- current carrying capacity: 80 A



FC BS 5

FIXCONNECT® labelling system set with 5 pieces

- labelling system for FIXCONNECT® plug-in terminals, not for terminals 2x25 / 4x4 mm²
- for attaching of labelling strips or marking with felt tip pen



KKL 34

**Main line branch terminal
per pole 4 x 1.5-25 mm² as L1-L3, Cu**

- 3-pole as connecting terminal 25 mm²
- 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
per pole 4 x 1.5-25 mm², as L1-L3;
8 x 1.5-25 mm², as N, Cu**

- 4-pole as connecting terminal 25 mm²
- 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
per pole 4 x 1.5-25 mm² as L1-L3;
4 x 1.5-25 mm² as N;
4 x 1.5-25 mm² as PE, Cu**

- 5-pole as connecting terminal 25 mm²
- for installation on DIN rails in accordance with IEC 60 715,
top hat profile 35 mm
- current carrying capacity: 80 A
- width: 100 mm





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 180 mm

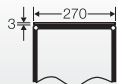
- with 2 fixing elements
- without knockouts



FP VP 27

Closing plate 270 mm

- with 2 fixing elements
- without knockouts



FP VP 36

Closing plate 360 mm

- with 2 fixing elements
- without knockouts





FP VS 10

Closing plate set box size 1

- 2 x for box wall 1 (180 mm) and 2 x for box wall 2 (270 mm)
- with 8 fixing elements
- without knockouts



FP VS 20

Closing plate set box size 2

- 2 x for box wall 2 (270 mm) and 2 x for box wall 3 (360 mm)
- with 8 fixing elements
- without knockouts



FP VS 30

Closing plate set box size 3

- 6x for box wall 2 (270 mm)
- with 12 fixing elements
- without knockouts



FP VS 40

Closing plate set box size 4

- 4 x for box wall 2 (270 mm) and 2 x for box wall 3 (360 mm)
- with 12 fixing elements
- without knockouts



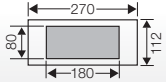


FP VM 27

Metal insert for closing plates

- box size 2 (270 mm)
- for earthing of metal armoured cables
- without knockouts

mounting width	215 mm
mounting height	80 mm

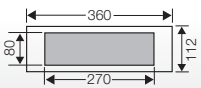


FP VM 36

Metal insert for closing plates

- for box wall 3 (360 mm)
- for earthing of metal armoured cables
- without knockouts

mounting width	215 mm
mounting height	80 mm



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

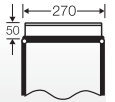




FP FG 200
Flange
without knockouts

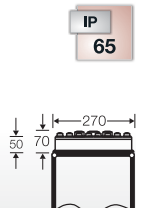
- box size 2 (270 mm)
- attached enclosure connectors: 2 items

mounting width	240 mm
mounting height	92 mm



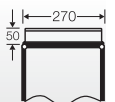
FP FG 222
Flange
sealing range Ø 6-30 mm

- 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
- box size 2 (270 mm)
- attached enclosure connectors: 2 items
- with integrated grommets for cable entry



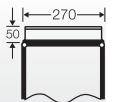
FP FM 225
Flange
knockouts: 7 x M 16/25, 13 x M 20/25

- box size 2 (270 mm)
- attached enclosure connectors: 2 items



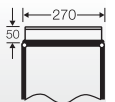
FP FM 232
Flange
knockouts: 8 x M 25/32, 2 x M 25/32/40

- box size 2 (270 mm)
- attached enclosure connectors: 2 items



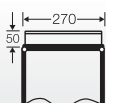
FP FM 240
Flange
knockouts: 2 x M 25/32, 5 x M 25/32/40

- box size 2 (270 mm)
- attached enclosure connectors: 2 items



FP FM 263
Flange
knockouts: 2 x M 20, 2 x M 25/32, 2 x M 32/40/50, 1 x M 40/50/63

- box size 2 (270 mm)
- attached enclosure connectors: 2 items



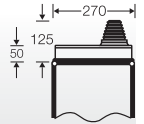


FP FG 272

Flange

sealing range: 1 x Ø 30-72 mm

- box size 2 (270 mm)
- attached enclosure connectors: 2 items

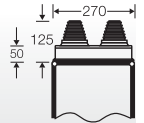


FP FG 273

Flange

sealing range: 2 x each Ø 30-72 mm

- box size 2 (270 mm)
- attached enclosure connectors: 2 items

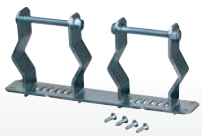


FP FG 282

Cable insert

sealing range: 2 x each Ø 30-72 mm

- divisible for cable insertion from the front
- box size 2 (270 mm)
- attached enclosure connectors: 2 items
- degree of protection IP 65 only with additional strain and pressure relief (e.g. FP ZE 272)



FP ZE 272

Cable strain relief

for 2 cables with max. 60 mm external diameter

- box size 2 (270 mm)
- with fixing screws



FP GS 27

Box fin

for inserting cables across 2 boxes

- removable
- for box walls 270 mm
- can be retrofitted



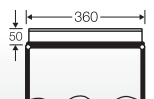
FP FG 300

Flange

without knockouts

- for box wall 3 (360 mm)
- attached enclosure connectors: 2 items

mounting width	330 mm
mounting height	92 mm

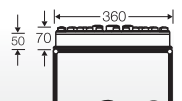


FP FG 331

Flange

sealing range Ø 6-30 mm

- 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
- for box wall 3 (360 mm)
- attached enclosure connectors: 2 items
- with integrated grommets for cable entry

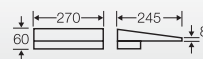




FP DB 27

**Canopy
for box wall 270 mm**

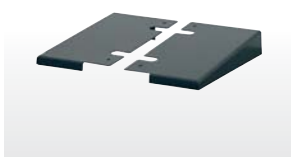
- W 270 x D 245 mm
- attached enclosure connectors: 2 items



FP DB 36

**Canopy
for box wall 300 mm**

- W 360 x D 245 mm
- attached enclosure connectors: 2 items



Mi DB 01

Canopy end plate

- for canopies FP DB xx and Mi DB xx



Application of canopy:





FP BF 18

**Ventilation flange
180 mm**

- for ventilation of ENYSTAR Distribution boards in the event of extremely high internal temperatures or a risk of water condensation
- for vertical installation on box walls
- with 2 fixing elements



FP BF 27

**Ventilation flange
270 mm**

- for ventilation of ENYSTAR Distribution boards in the event of extremely high internal temperatures or a risk of water condensation
- for vertical installation on box walls
- with 2 fixing elements



FP BF 36

**Ventilation flange
360 mm**

- for ventilation of ENYSTAR Distribution boards in the event of extremely high internal temperatures or a risk of water condensation
- for vertical installation on box walls
- with 2 fixing elements



BE 44

Ventilation insert



Ventilation

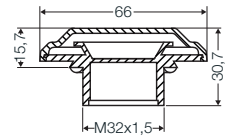




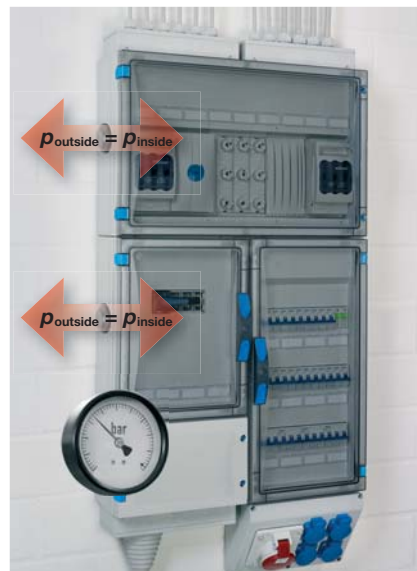
BM 32

Pressure compensation element for M 32 knockouts

- for the reduction of condensation by pressure compensation in power distribution systems
- ISO thread M 32 x 1.5
- bore-hole: Ø 32.3 mm
- wall thickness of up to 8 mm
- with counter nut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25° to + 55° C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one pressure compensation element BM 32 must be used per 42 litres (42000 cm³) of enclosure volume.
- Example: enclosure size 30 cm x 60 cm x 17 cm = 30600 cm³ = 30,6 litres. Number of necessary BM 32 (M32) = 1 piece.



Pressure compensation





FP GV 10
Connector



- when converting existing installations
- for connection of enclosures or fixation of flanges
- set with 10 pieces



FP PL 3
Facility for sealing

- for door sealing
- can be retrofitted
- 2 pieces



FP TS 1
Door lock
converting kit to key operation

- for subsequent installation in hand operated door locking system



FP TS 2
Spare key

- for door lock FP TS 1
- 2 pieces



FP TW 1
Tool operation
conversion kit to tool operation

- can be retrofitted



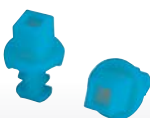
FP TW 2
Tool key for double-bit
conversion kit to tool operation

- can be retrofitted



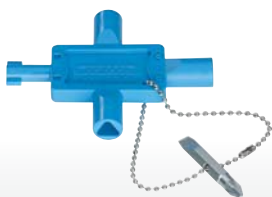
FP TW 3
Tool key for triangular lock, 8 mm
conversion kit to tool operation

- can be retrofitted



FP TW 4
Tool key for square lock, 8 mm
conversion kit to tool operation

- can be retrofitted



US 1

Multikey

- triangular 8 mm, square 8 mm, double-bit and slot



DS 1

Triangular key 8 mm



FP TA 1

**Dust protection cover
for door fasteners after removing the key
operation device**

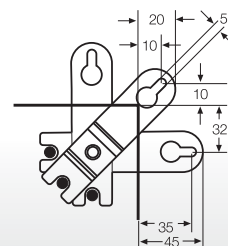
- can be retrofitted
- set with 10 pieces



FP AL 40

4 stainless steel external brackets

- for external fixing of enclosures



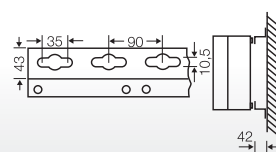
FP MS 1

Profile for wall mounting

- for ENYSTAR distribution board assemblies up to 810 x 1260 mm
- with 8 screws, washers and nuts for fastening of enclosures

length	1980 mm
material	sendzimir galvanised steel profile with structured powder coating

RAL
7016



Varnish pen RAL 7016

12 ml

RAL
7016



Operating and ambient conditions	270
Standards and requirements	271
Detail dimensions in mm	272 - 273
Rated power dissipation of empty boxes	274 - 275
Assembly of enclosures	276 - 278
Device installation	280 - 281

	Enclosures with door and closing plates Empty enclosures FP 0...	Circuit breaker boxes FP 1...
Application area	Suitable for indoor installation and outdoor installation, protected against weather influences However, pay attention to the climatic effects on the installed equipment , for example, high or low ambient temperatures or formation of condensed water see technical information	
Ambient temperature - Average value over 24 hours - Maximum value - Minimum value	– + 70° C – 25° C	+ 35° C The ambient temperature for enclosures with electrical functions (distribution boards) is reduced by the installed equipment technology! + 40° C – 5° C
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 ¹⁾ silicone-free	halogen-free ¹⁾ silicone-free
¹⁾ "Halogen-free" in accordance with IEC 754-2 "Common test methods for cables - Determination of the amount of halogen acid gas". For material properties see technical data.		

ENYSTAR distribution boards comply with the requirements of the IEC 61 439-3


Distribution boards 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:

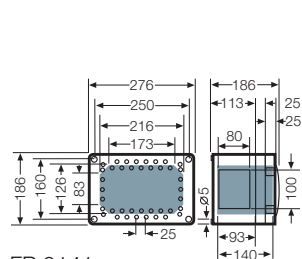
1. The distribution boards must consist of the verified enclosures documented in this list.
2. The wiring of the equipment must be carried out with the cross-sections and conductor types indicated in Table "Rating of insulated conductors in switchgear assemblies", Index Technics.
3. Once the distribution board 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 assembly must be provided with a manufacturer's identification mark.
Compliance with important data such as
 - limit of temperature rise
 - dielectric strength
 - IP degrees of protection
 - creepage distances and clearances
 is verified for this system.

Standards and regulations

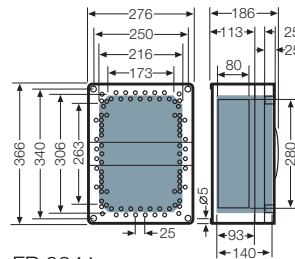
- IEC 61 439-3
... low-voltage switchgear and controlgear assemblies intended to be in places where unskilled persons have access to their use - distribution boards
- IEC 60 999, connecting devices
Safety requirements for screw-type and screwless-type clamping units for electrical copper conductors
- DIN EN 50 262
Metric threaded cable glands for electrical installations
- DIN 43 880
Built-in equipment for electrical installations; overall dimensions and related mounting dimensions
- IEC 60 529 / DIN VDE 0470 Part 1
Degrees of protection provided by enclosures (IP-Code)

 = usable installation space with mounted cable glands

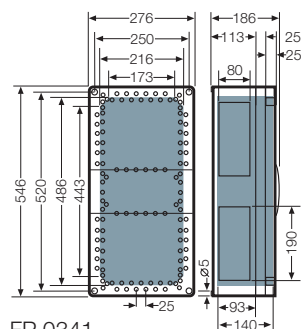
ENYSTAR distribution boards with door lockings for hand operation and closing plates



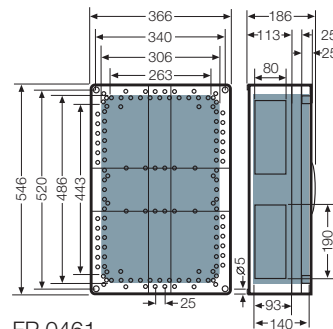
FP 0141
 FP 0151



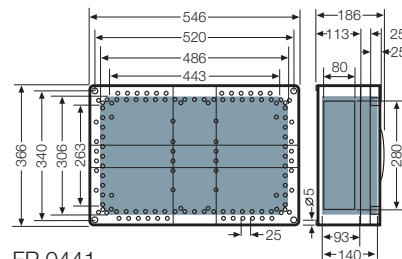
FP 0241
 FP 0251



FP 0341
 FP 0351

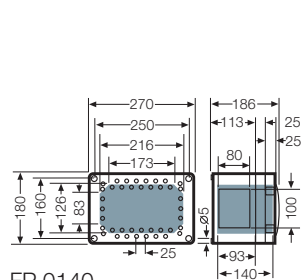


FP 0461
 FP 0471

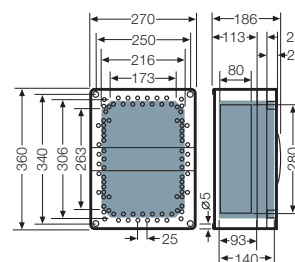


FP 0441
 FP 0451

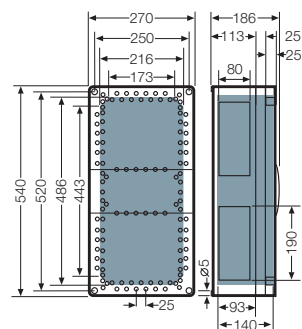
ENYSTAR distribution boards with door lockings for hand operation



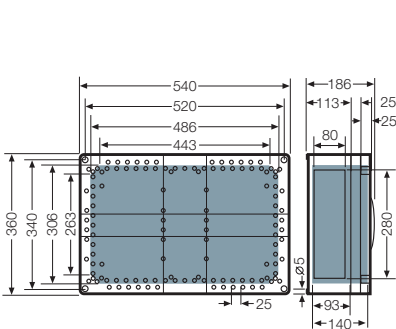
FP 0140
 FP 0150



FP 0240
 FP 0250

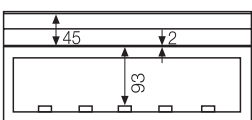



FP 0340
 FP 0350



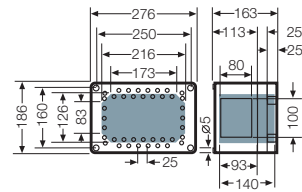
FP 0440
 FP 0450

Mounting depth for device installation in covers

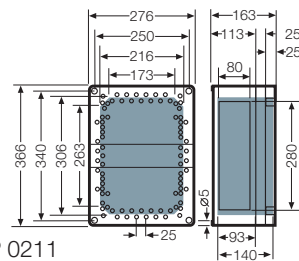


 = usable installation space with mounted cable glands

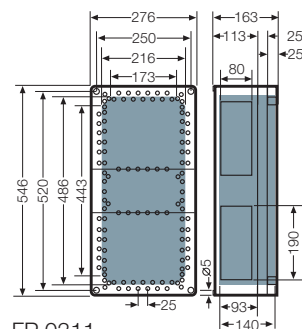
ENYSTAR distribution boards with door lockings for tool-operation and closing plates



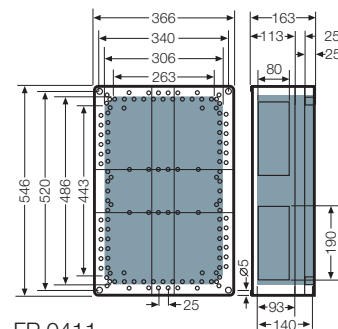
FP 0101
 FP 0121



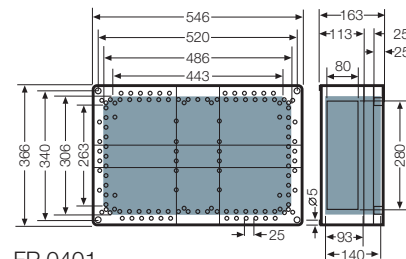
FP 0211
 FP 0231



FP 0311
 FP 0331

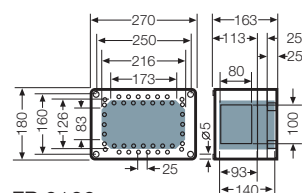


FP 0411
 FP 0431

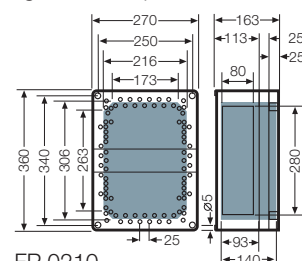


FP 0401
 FP 0421

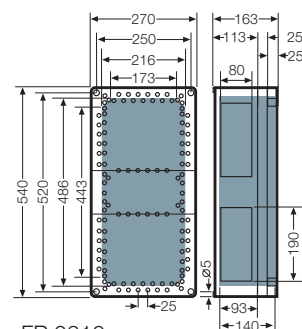
ENYSTAR distribution boards with door lockings for tool-operation



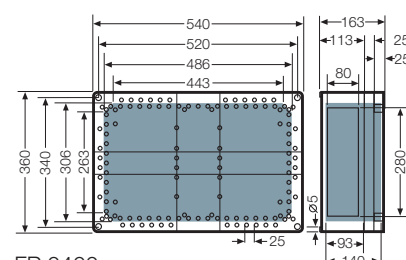
FP 0100
 FP 0120



FP 0210
 FP 0230

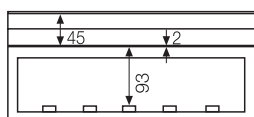


FP 0310
 FP 0330



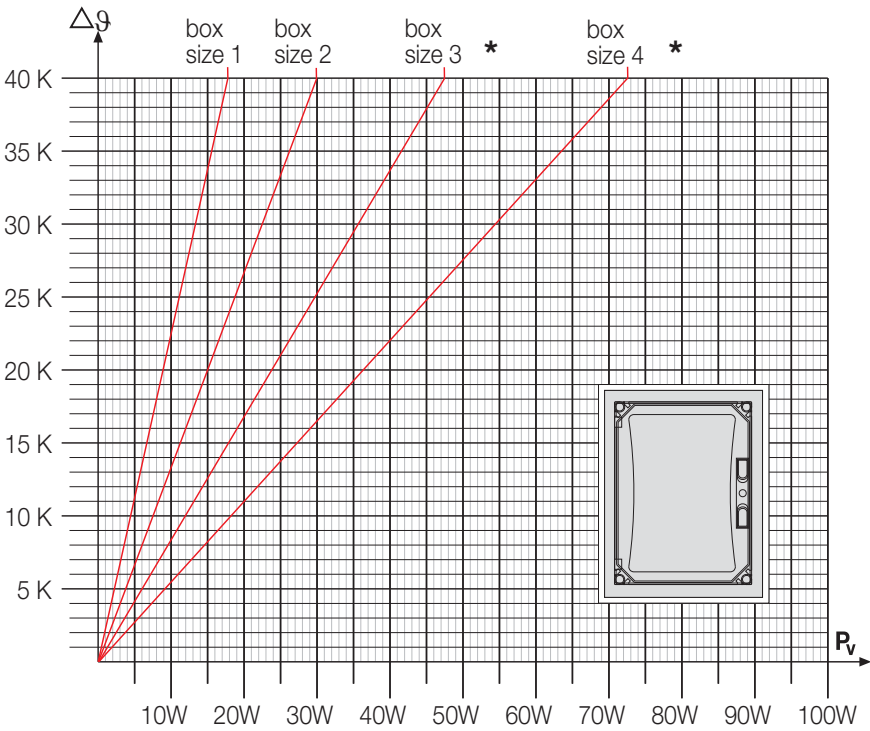
FP 0400
 FP 0420

Mounting depth for device installation in covers



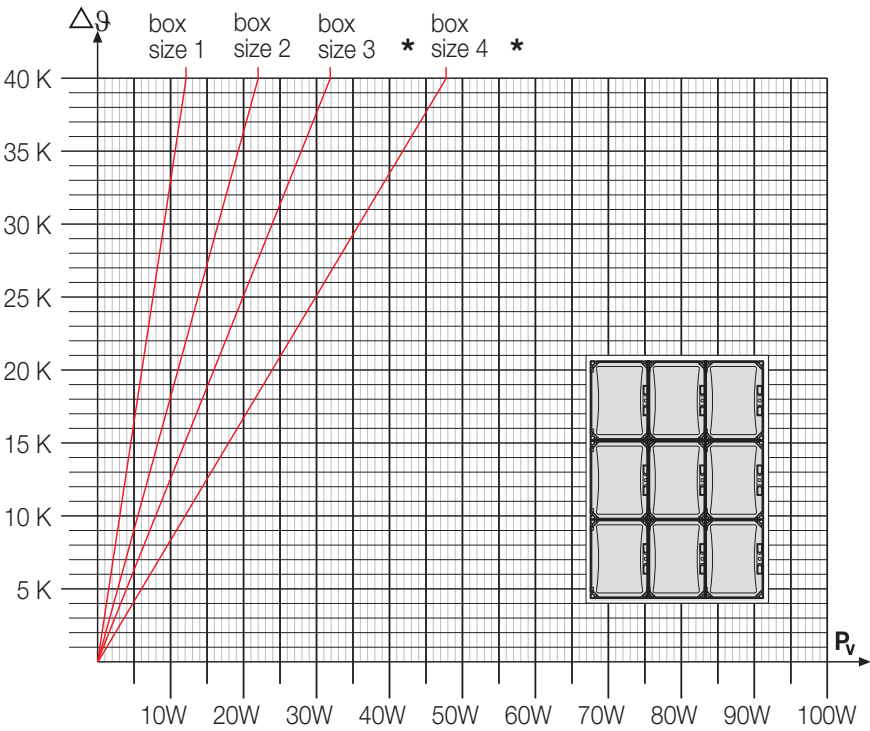
Temperature rise ($\Delta\theta$) with ENYSTAR enclosures by power dissipation of electrical devices

Single enclosures



* with/without extension frame

Assembled enclosures



* with/without extension frame

Note!

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

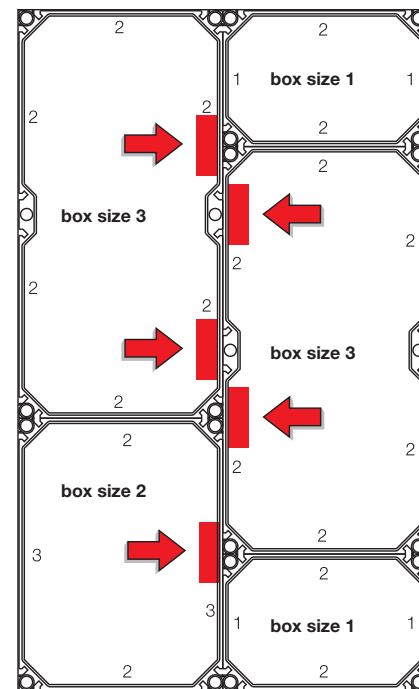
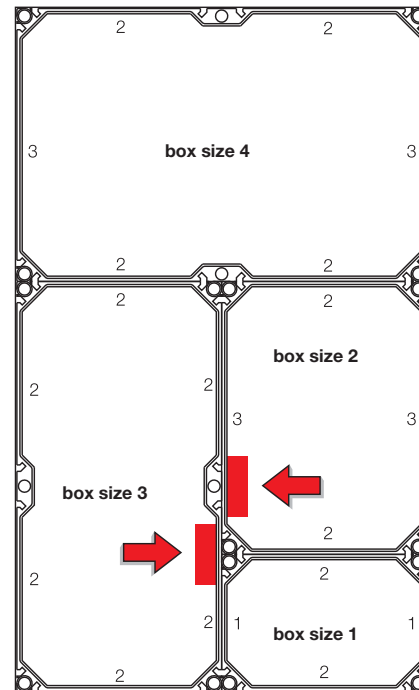
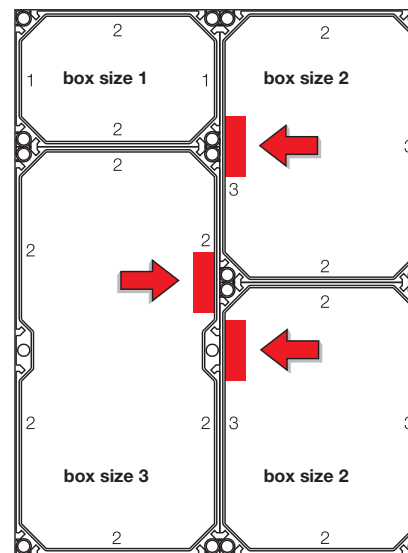
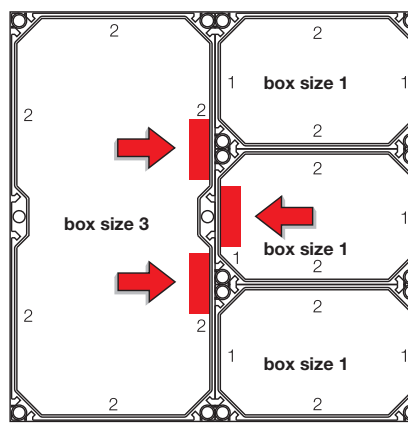
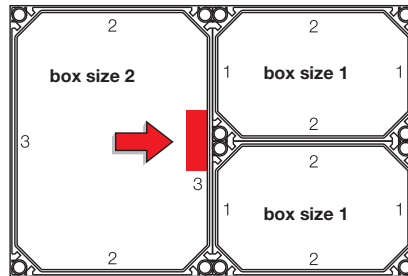
- 1st Maximally permissible ambient temperature of the installed electrical devices (please consider data of the equipment manufacturers)
- 2nd Category temperature of the internal wiring and the inserted cables
- 3rd Temperatur resistance of the enclosure materials and the cable entries etc.

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
Maximally permissible heating up inside the enclosure:	$\Delta\vartheta = \vartheta_{imax} - \vartheta_U = 55^\circ \text{C} - 25^\circ \text{C} = 30 \text{ K}$
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)	
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:	$\Delta\vartheta = 20 \text{ K}; \vartheta_i = \vartheta_U + \Delta\vartheta = 25^\circ \text{C} + 20 \text{ K} = 45^\circ \text{C}$
Assembled enclosures:	$\Delta\vartheta = 30 \text{ K}; \vartheta_i = \vartheta_U + \Delta\vartheta = 25^\circ \text{C} + 30 \text{ K} = 55^\circ \text{C}$

Combination of enclosures with connectors and wall separators

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



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 co-ordinated 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 66.

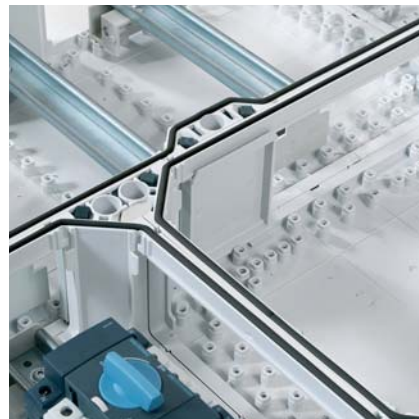
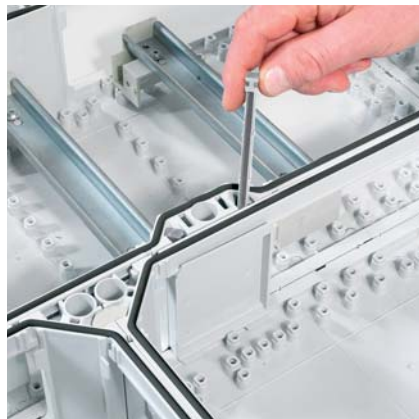
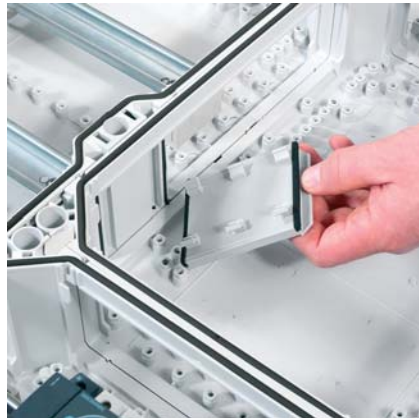
Connection of enclosures

Assemble enclosures by pushing-in enclosed connectors.



Inserting wall separators

Use wall separators to connect different sized enclosure walls.



Closing walls via closing plates

Insert closing plates into openings of outer walls of the distribution board and fix them with enclosure connectors.



Closing of enclosure walls with flanges for cable entry

Insert flanges for cable entry into open outer walls of the distribution board and fix them with enclosure connectors. A wide range of flanges for the cable entry is available.

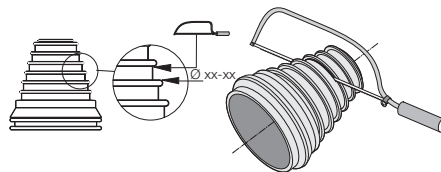


Installation of cable inserts

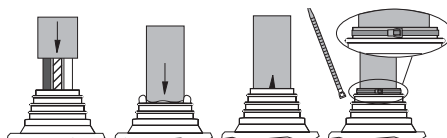
Saw the box fin.
Afterwards the cable insert is mounted and fixed via enclosure connectors and the rubber entries can be inserted.



Adjust stepped grommet on the cable diameter.



Insert cable and fix it with the cable clips.

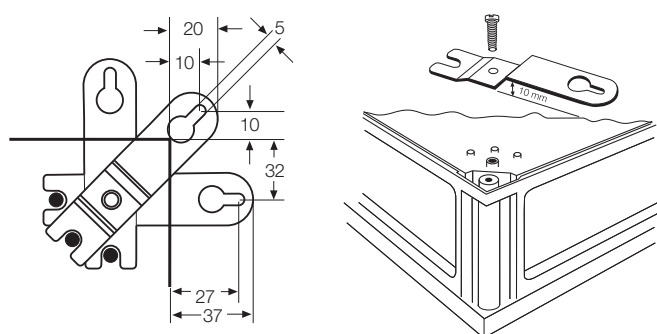


Feed the cable into the box from the front.



External brackets made from stainless steel
for external box fixing

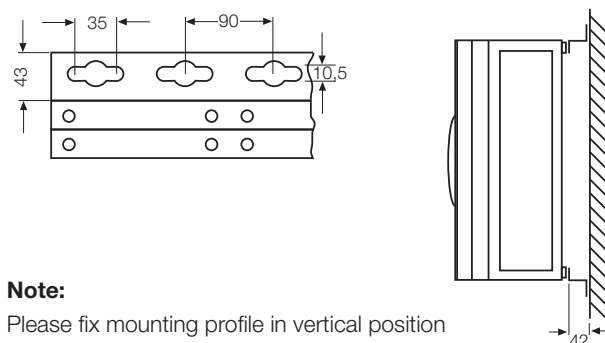
FP AL 40 (4 pieces)



Mounting profile
for wall-mounting of
ENYSTAR distribution boards,
steel profile,
length 1980 mm
FP MS 1



Fixing matrix of mounting profile



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.

Transport

Regarding transportation it is recommendable to protect the assembly against deflection. For that please screw the assembly to a solid timber.

Assembly of box fin
for easier wiring over two
enclosures.

Cutting out box walls.

Insert box fin and fix via
wedges.



**Device installation on
mounting plates or DIN rails**

Fix installation devices on
mounting plate via self-threa-
ding screws.

Using screws for fixing
mounting plates onto
bottom of boxes.



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



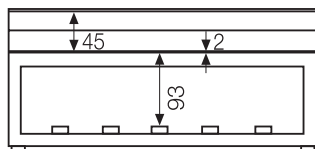
Device installation into covers

Pre-drill the cut-outs at the corners and saw them out of the cover.

Use a piercing saw with coarse toothed saw blade for plastics. Install device.



Snap cover into door frame from the rear. Afterwards, screw door-frame with door and cover onto base of enclosure.



Installation depth for equipment installation in covers



Sealing

For installation in all enclosures except circuit breaker boxes.

Sealing device is screwed on enclosure bottom.

Open pre-moulded opening for sealing device (drill Ø 5 mm) and screw the cover with frame.



Then screw the frame with door and cover onto base of enclosure. Seal the cover.

