univers FW manual

Field distributor
Flush-mounted enclosures FWU
Protection type IP30

:hager

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1 About this manual

These instructions are an integral part of the FWU flush-mounted field distributor enclosure.

1.1 Subject of the manual

This document is intended for users of FWU flush-mounted field distributor enclosures made by Hager. The instruction manual provides safety information for electrically skilled persons/the installer about the product's life cycle phases.

- Read and observe this manual before you start working on the enclosure or the switchgear and controlgear assembly.
- Also observe the supplied assembly manual for the respective enclosure or enclosure accessories.
- Store the manuals in a safe place. The authorised personnel must have access to the manuals at all times.

1.2 Warranty and Liability

These instructions do not extend the Sales and Delivery Conditions of Hager. No new claims concerning the warranty or guarantee, which extend beyond the Sales and Delivery Conditions, can be derived from this instruction manual.

Liability note

Hager reserves the right to modify or supplement the product or the documentation at any time without prior notice. Hager assumes no liability for typographical errors and any damage which may arise from them.

1.3 Used symbols and trademarks

Structure of warning messages

⚠ Signal word
Type and source of the danger! **Consequences if the danger is ignored** ➢ Measures for averting the danger

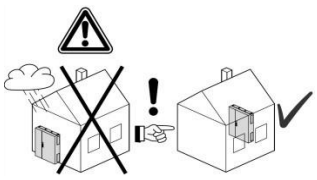
Danger levels in warning messages

Colour	Signal word	Consequences of non-compliance
	DANGER	Death, serious personal injury
	WARNING	Death or serious personal injury possible
	CAUTION	Personal injury
	ATTENTION	Property damage

Procedural instructions with a fixed order:

Step	Action
1	Procedural instruction step 1
2	Procedural instruction step 2

Additional symbols and their meaning

Symbol	Meaning
	The work must only be performed by an electrically skilled person.
	The product is intended for indoor installation or indoor use.

Visual representation	Meaning
1., 2., 3., etc.	Numbered lists with a fixed order
-	Lists and procedural instructions without a fixed order
➢	Measure / procedural instruction for averting danger

2 For your safety

- Avoid dangers. Adherence to the safety information in this section is a prerequisite for the safe assembly and use of the field distributor.
- Also observe the safety information provided in other sections.

2.1 Proper use

The Hager FWU field distributor is a product offering
for flush-mounted installations, protected to IP30, for residential and commercial buildings with a maximum supply current of 125 A.

FWU field distributors are installed at a depth of 110 mm in the wall. They come in 6 different heights and 3 different widths.

The Hager FWU field distributor has been equipped with components from the **univers FW** internal fitting system.

Hager's tried and tested FWU field distributor and the univers FW internal fitting system enable the implementation of switchgear and controlgear assemblies according to EN 61439 Part 3 (Distribution boards intended to be operated by ordinary persons / DBO).

Fixed indoor installation/wall mounting

With its enclosed design, the FWU field distributor is intended for stationary, indoor, flush-mounting in walls/hollow walls. The operating conditions for the indoor installation according to EN 61439 and the maximum ambient temperatures must be observed at the place of installation.

The FWU field distributor meets protection type IP30 when equipped with closed or slotted doors. The instructions in this manual regarding compliance with the protection type must be observed during installation works.

The FWU field distributor is available in protection class II (double insulated). The instructions in this manual regarding compliance with the protection type must be observed during installation works.

For more detailed information, refer to the technical data.

Intended use also includes:

- Reading and observing this manual, the installation manuals and the manuals for the internal fitting system
- Complying with the requirements for authorised personnel

Misuse

Any other or additional use as well as changes and modifications to the field distributor enclosure are considered to be misuse. Hager does not assume any liability for damages resulting from misuse.

Limitation of operating areas

There are certain areas in which the FWU field distributor enclosure may not be used, in order to prevent hazards or damage to the enclosure. The field distributor is not suitable for use:

- in areas that require a higher protection type,
- in areas where ATEX directives must be observed,
- in operating sites at risk of fire,
- in corrosive environments. In particular, the enclosure and internal components can become damaged if used in chlorinated, sulphurous, acidic or saline environments.

2.2 Requirements for authorised personnel

- Only qualified electrically skilled persons may assemble, install, commission switchgear and controlgear assemblies, perform extensions, troubleshooting or maintenance and disassemble and dispose of them.
- The qualified electrically skilled persons must have appropriate experience in initial testing and subsequent commissioning, troubleshooting and maintenance.

Product life cycle phase	**Minimum training, qualifications or competence**
Planning	Electrically skilled person, consultant electrical engineer
Transport, assembly, installation	Electrically skilled person
Commissioning	Electrically skilled person with appropriate testing experience
Operation	Short-circuit devices for operation by ordinary persons inside distribution boards for operation by ordinary persons according to EN 61439-3 (DBO): Ordinary persons All other components must be secured against use by ordinary persons.
Inspection and maintenance	Electrically skilled person with appropriate testing experience
Extensions	Electrically skilled person, planning and documentation required
Disassembly, disposal	Electrically skilled person, only for clearly defined mechanical and electrical work: electrically instructed person

- An electrically skilled person by virtue of their professional training, skills and experience as well as knowledge of the relevant regulations can assess the work assigned to them and identify possible dangers.
- An electrically instructed person must be sufficiently informed and supervised by an electrically skilled person. The instructed person must thus be capable of identifying risks and avoiding dangers as well as dangers due to electricity.
- Anyone who is not an electrically skilled person or an electrically instructed person should always be considered as a non-professional, ordinary person. Non-professional, ordinary persons should never perform work in electrical systems independently or on their own authority. Non-professional, ordinary persons may only operate short-circuit devices intended for use by ordinary persons according to EN 61439-3.

3 Technical data

Intended use

Observing the technical data is important for ensuring the intended use.

Specifications for switchgear and controlgear assemblies

The FWU field distributor has been equipped to receive the univers FW internal fitting system (with UN0xFN vertical uprights). After being appropriately extended, it is suitable as a switchgear and controlgear assembly according to EN 61439-1/-3 for:

- Frequency f_n = 50 Hz
- Rated voltage U_n = 230 V/400 V
- Rated peak withstand current U_{imp} = 4 kV; overvoltage category III
- Rated insulation voltage U_i = 400 V
- Degree of pollution 3
- Minimum air distances = 3 mm
- Minimum creepage distances = 5.6 mm

Rated current

I_{nA} max. 125 A

Short-circuit resistance I_{cc}

I_{CC} < 10 kA

Application

- Fixed
- Indoor installation
- For flush-mounted or hollow wall installation
- Protection against external mechanical influences: see “Impact protection”
- After being extended for use as a switchgear and controlgear assembly according to EN 61439, part 3 (Distribution boards intended to be operated by ordinary persons/DBO), it may be operated by ordinary persons. Devices that may not be operated by ordinary persons must be marked as such by the installer according to standards or require the use of a key or tool. Additional requirements according to standard EN 61439 must be observed.
- Equipped for use under normal operating conditions according to the EN 61439 series of standards. Variations are possible after the installer has consulted with the planner, taking into consideration precautions according to the EN 61439 series of standards.

Mechanical installation of devices /internal fittings

- Equipped to receive the univers FW internal fitting system
- Compatible with specific univers Z and univers N accessories (restrictions due to size)
- For assembly on univers FW UN0*FN vertical uprights (not included for empty enclosures)
- Internal fitting system pre-mounted in complete enclosures, fast assembly/disassembly thanks to snap-in technology
- Possible to fix the internal fitting system using screws with the aid of the ZZ41SF accessory set (lock nuts + screws)

Protection classes

- Protection class II (double insulated)

Note:

- When using multimedia kits (without covers), all devices and wiring must be equipped with protective insulation or double insulation. Only the distributor kit is equipped with double insulation ex-works.

Protection type

- IP30 with door (closed, slotted, transparent or multimedia)
- IP30 without a door but with covered internal fitting kits. Only the distributor kit is IP30-protected without a door.

Note:

- Observe the operating equipment protection type.

Impact protection

- IK09 all round for an enclosure with closed door, except for the flange (excluded in the standard)
- IK07 for an enclosure with slotted, transparent or multimedia door
- IK05 for an enclosure equipped with an internal fitting system but without door

Colour

- Door, frame, covers and interior insulation: RAL 9010 (pure white)
- Metal plate wall cabinet and metal parts of internal fitting system: grey and hot-dip galvanised
- univers Z mounting towers: black

Materials

- Door and frame:
  - Steel, 1 mm thick
  - Powder-coated with epoxy polyester paint then baked
- Metal plate wall cabinet made of hot-dip galvanised steel, 1 mm thick
- Material for insulated parts:
  - Polystyrene (PS): Covers, head/foot sections, rear panel, extrusion profile
  - Polycarbonate/acrylonitrile styrene acrylate (PC/ASA): Corner sections, multimedia panel
  - Polycarbonate (PC): Multimedia door inserts
- Material for univers FW support towers:
  - Polyamide 6 (PA6): Bottom parts, double towers
  - Polycarbonate (PC): Top parts
- Vertical uprights and DIN rails made of hot-dip galvanised steel, 1 mm thick
- Multimedia steel supports (patch panels) made of hot-dip galvanised steel, 1.5 mm thick
- Multimedia perforated plates made of hot-dip galvanised steel, 1 mm thick

Plastic parts in direct contact with the area behind the wall (e.g. corner sections and head/foot parts) pass a glow-wire test at 850 °C. Therefore, the enclosure is suitable for hollow wall applications.

In sum: Standards and regulations

- Tested according to EN 61439-1/-3 (VDE 0660-600-1/-3)
- Dimensions according to DIN 43780
- Protection type IP30 according to VDE 0470 Part 1 (DIN EN 60529)
- Protection type IP3X with open door or without door
- Air clearance and creepage distances according to VDE 0110, part 1 and 2/1.89
- Rated insulation voltage: AC 400 V
- Overvoltage category III
- Degree of pollution 3
- Insulation class I
- Suitable for hollow wall use

4 About the FWU field distributor

4.1 Delivery form

The new FWU field distributor is delivered in two different forms:

As a complete system: Order number comprises wall cabinet, door and frame. With certain products such as FWU52GS, the internal fitting system is already included.

In the case of empty enclosures such as FWU52D, there is no internal fitting system included.

FWU52GS

FWU52D

As individual parts: To start with, the wall cabinet is ordered **without a frame or door**. The customer must then order the frame, door and internal fitting system separately. This form of delivery is particularly useful if the wall cabinet is to be installed at the building site at a much earlier stage, or if a special door is requested which is not available as part of a complete system (e.g. multimedia version).
For sizes 41, 42, 43, 51, 52, 53, 61, 62, 71 and 81, frames with a door come in 4 different versions. For all other sizes, the door and frame must be ordered separately.

Example: FWU52L

Example: FZ152NM

Example: UW51U

Example: UW51UA

4.2 Body/wall cabinet

4.2.1 Features

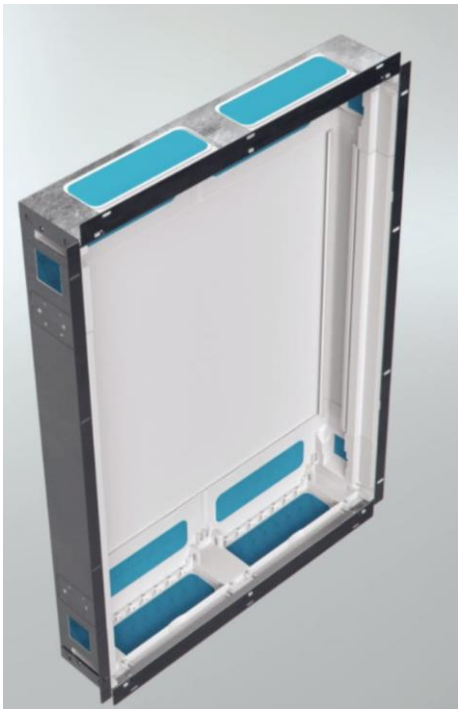
- Can be turned 180° (top/bottom)
- Interior is double-insulated with plastic parts
- Cable duct (11 cm^2) is built-in laterally inside the box
- 2 cut-outs (top/bottom) on each side for lateral cable routing up to M40
- 2 cut-outs (top/bottom) per panel for rear cable routing
- Removable transverse cleats at top/bottom for cable entry from the front (sliding bottom and top cable entry)
- Built-in wall supports (width: 100 mm) for wall mounting
- Equipped to receive hollow wall anchor VZ405N
- Depth of wall installation: 110 mm
- Including full-size plaster guard

Example: Wall cabinet FWU32L

Cable entries

Additional cable entry areas

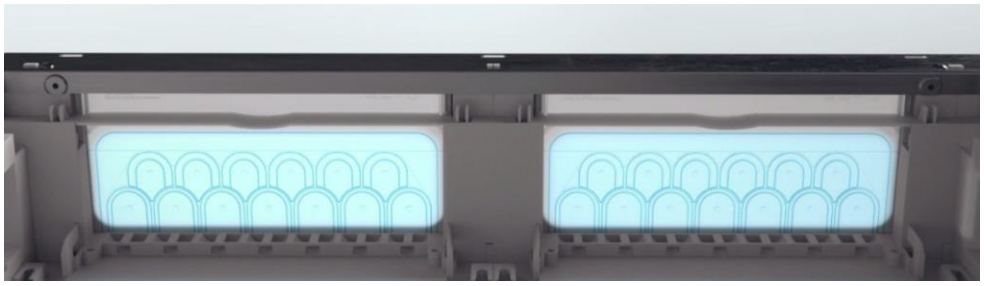
New cable entries have been added to the side and rear of the new FWU field distributor. The cable entry area of the top and bottom slider is 120 cm^2. That's 17% larger than on the former FW (103 cm^2). With the additional rear area (96 cm^2) and the side openings (20 cm^2), the total cable entry area on an enclosure with 2 fields (550 mm wide) is 946 cm^2. That's **130% larger** than on the former FW. By the same calculation, the total area is **150% larger on an enclosure with 1 field (300 mm wide)** and **120% larger on an enclosure with 3 fields** (800 mm wide).



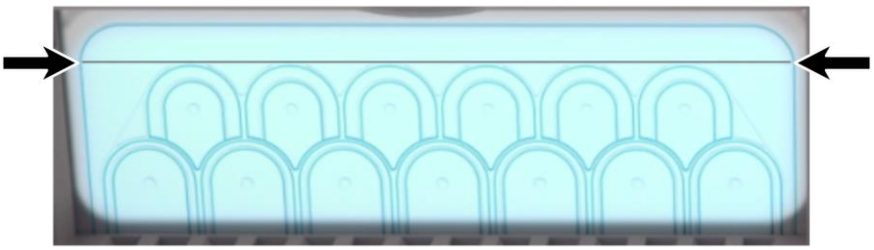
Cable entries on the FWU field distributor

Top and bottom cable entries

- 2 snap-in cable entries per field (one at the top and one at the bottom)
- Can be removed from the front (slider technology)
- Max. cable entry area: 188 x 60 mm
- With pre-punches that can be cut out for different empty conduit diameters:
  - 7 x Ø21/26 mm
  - 6 x Ø15/26 mm
- It is possible to cut the entire cable entry along a transverse ridge (see arrow in the illustration below)



Enclosure top/base with two mounted cable entries (view from inside)

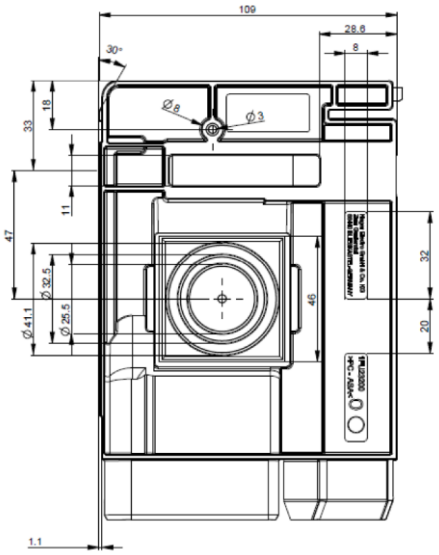


Enlarged illustration of the transverse ridge for cutting the entire cable entry area (highlighted with arrows)

Lateral cable entries

- 2 side cable entries per 250 mm-wide field (one at the top and one at the bottom)
- Can be pushed out from the outside (before installing in the wall)
- Max. cable entry area: 45 x 45 mm
- With pre-punched holes that can be cut out to accommodate different cable dimensions: 1 x Ø25/32/40 mm
- When cutting out the maximum opening area, the FD00P5 accessory can be installed to provide passive ventilation in the following cases:
  - Hollow wall installation
  - Availability of a side cavity area (Hager recommends allowing a distance of 50 mm between the cavity and the front of the FD00P5 ventilation inserts)

Side cable entries on the wall cabinet (blue)

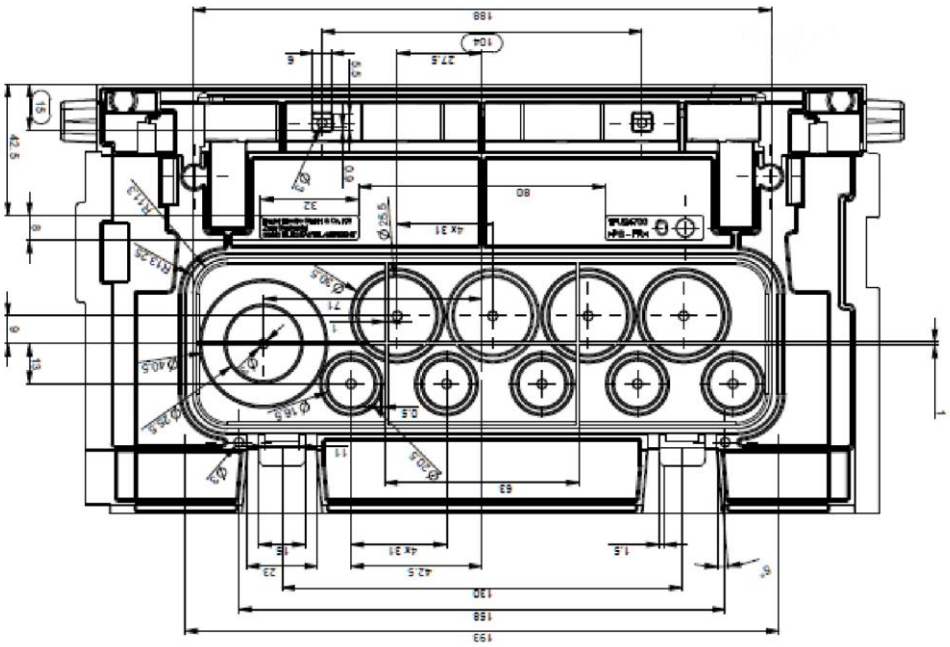


Dimensions and position

Cable entries at the rear

- 2 cable entries on each side (one at the top and one at the bottom)
- Can be pushed out from the outside (before installing in the wall)
- Max. cable entry area: 188 x 51 mm
- With pre-punched holes that can be cut out to accommodate different cable routings:
  - 5 x Ø16/20 mm
  - 4 x Ø25/30 mm
  - 1 x Ø30/40 mm
- Circumferential groove that can be cut out for the flange VZ741 (IP41). Cutting out must be carried out from the rear (before installation in the wall). The flange VZ741 (IP41) is installed from the inside.

Knocked-out rear cable entries, on the right with flange
(view from the rear)



Dimensions and position of the rear cable entries

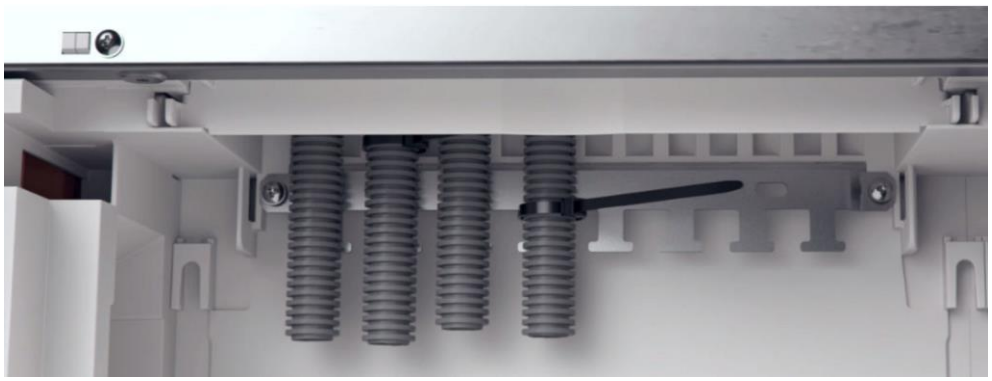
Enclosure with flange VZ741 mounted on the top rear cable entry
(view from the front)

Top/bottom cable strain relief

At the top and bottom, the FWU enclosure contains a built-in option for attaching conduits and cables using cable ties. For each 250 mm-wide panel, there are 13 insertion points for cable ties. Thanks to a special guide, cable ties with a maximum width of 12 mm can be easily pushed into the duct and come out again on the other side, at the front.

Attaching conduits and cables via insertion points for cable ties

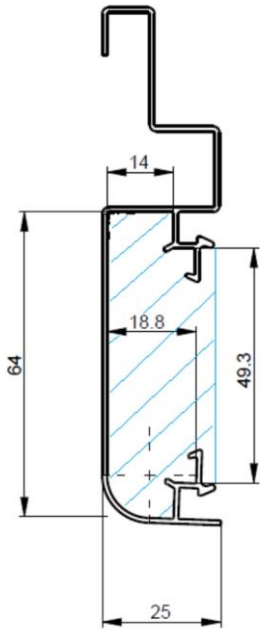
As another option for attaching cables/increasing strain relief, you can also mount cable strain relief bar FZ850F (see the section entitled “Internal fitting accessories”).



Attaching conduits and cables to the mounted cable strain relief bar FZ850F

Side vertical cable duct

The wall cabinet of the FWU enclosure includes side cavities for routing cables vertically. They form a duct on each side with a cross section of 11 cm^2 (approx. 60 x 18 mm). They enable several cables to be routed from top to bottom or vice versa if the area beneath the DIN rails is no longer large enough.

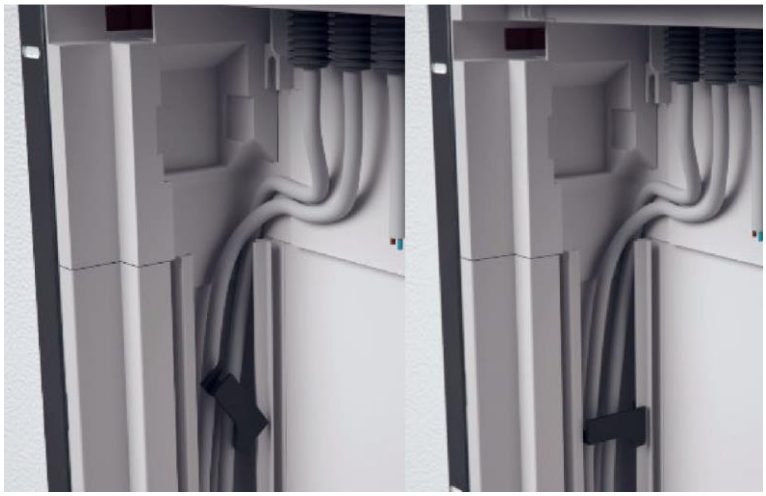


Cross section of lateral cable duct
in wall cabinet
(shaded, view from the top)

Cables held in place by cable duct clips

4 cable duct clips are attached to each enclosure. They are inserted diagonally and clicked into place in the cable duct, similarly to the M7239 clips in the Tehalit LFH cable trunking system (60 mm). The catch on the clip of the FWU accessory has been modified to make it easier to move the clip up and down.

2 clips are delivered for each side. If more parts are required, additional clips are available in the M7240 accessory set.



Cable duct clips for side cable ducts
Left: inserted diagonally – fully assembled

Enclosure with two mounted cable duct clips and cables routed through in the left side cable duct

Cable duct cover

With multimedia complete enclosures (FWUxxK, etc.), a cable duct cover is pre-mounted at the side next to the multimedia field. This halogen-free cover can also be clipped into place over the clips (similarly to the Tehalit LFH cable trunking system).

The cable duct cover can also be ordered with the FWU00Cx product codes as an individual component.

The duct can also be covered with the Tehalit LFH cover (60 mm wide, product code LFH6029010) by shortening the 2 m long LFH cover to the right length. This makes it possible to form an enclosed duct over the entire inner area.

Cover mounted
over the right lateral cable duct

4.2.2 Coding

The order number code for flush-mounted field distributor enclosures has been re-defined in the style of the surface-mounted field distributor enclosure (FWB/FWQ...).

The coding is made up of three components:

- Enclosure type: **FWU**…
- Enclosure dimensions (height and width): FWU**32**…
- Enclosure version: FWU32**GS**

The 11 different versions of the enclosure are summarised in the table below:

Product code ending	With internal fitting system	Internal fitting	With terminals	Clamp type	With flush frame and door	Door type	Door handle
A	x	Distributor kit			x	closed	FZ598N
D		(empty)			x	closed	FZ598N
GS	x	Distributor kit	x	N + PE QuickConnect	x	transparent	FZ598N
K	x	Distributor kit + multimedia kit	x	PE QuickConnect	x	closed	FZ598
K1	x	Distributor kit + multimedia kit	x	N + PE QuickConnect	x	slotted	FZ598N
K2	x	Distributor kit + multimedia kit	x	N + PE QuickConnect	x	closed	FZ598N
L		(empty)					
M2	x	Distributor kit	x	PE QuickConnect	x	closed	FZ598N
N	x	Distributor kit		(equipped to receive terminal blocks)	x	closed	FZ598N
S	x	Distributor kit	x	N + PE QuickConnect	x	closed	FZ598N
S1	x	Distributor kit	x	PE QuickConnect	x	closed	FZ598

The 16 different enclosure dimensions are listed in “Overview of enclosure product codes”.

4.2.3 Overview of enclosure product codes

Size 3	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 500 mm	FWU31A	FWU32A	FWU33A
	FWU31D	FWU32D	FWU33D
	-	FWU32GS	-
	-	FWU32K1	-
	-	FWU32K2	-
	FWU31L	FWU32L	FWU33L
	-	FWU32M2	-
	FWU31S	FWU32S	FWU33S
	FWU31S1	FWU32S1	FWU33S1

Size 4	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 650 mm	FWU41A	FWU42A	FWU43A
	FWU41D	FWU42D	FWU43D
	-	FWU42GS	-
	-	FWU42K1	-
	-	FWU42K2	-
	FWU41L	FWU42L	FWU43L
	-	FWU42M2	-
	FWU41S	FWU42S	FWU43S
	FWU41S1	FWU42S1	FWU43S1

Size 5	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 800 mm	FWU51A	FWU52A	FWU53A
	FWU51D	FWU52D	FWU53D
	-	FWU52GS	-
	-	FWU52K	FWU53K
	-	FWU52K1	-
	-	FWU52K2	-
	FWU51L	FWU52L	FWU53L
	-	FWU52M2	-
	-	FWU52N	FWU53N
	FWU51S	FWU52S	FWU53S
	FWU51S1	FWU52S1	FWU53S1

Size 6	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 950 mm	FWU61A	FWU62A	FWU63A
	FWU61D	FWU62D	FWU63D
	-	FWU62GS	-
	-	FWU62K	-
	-	FWU62K1	-
	-	FWU62K2	-
	FWU61L	FWU62L	FWU63L
	-	FWU62M2	-
	-	FWU62N	FWU63N
	FWU61S	FWU62S	FWU63S
	FWU61S1	FWU62S1	FWU63S1

Size 7	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 1100 mm	FWU71A	FWU72A	FWU73A
	FWU71D	FWU72D	FWU73D
	-	FWU72GS	-
	-	FWU72K1	-
	-	FWU72K2	-
	FWU71L	FWU72L	FWU73L
	-	FWU72M2	-
	-	FWU72N	FWU73N
	FWU71S	FWU72S	FWU73S
	FWU71S1	FWU72S1	FWU73S1

Size 8	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 1250 mm	FWU81D	-	-
	FWU81L	-	-

4.2.4 Enclosures in detail

FWUxxA

Product code
FWU31A
FWU32A
FWU33A
FWU41A
FWU42A
FWU43A
FWU51A
FWU52A
FWU53A
FWU61A
FWU62A
FWU63A
FWU71A
FWU72A
FWU73A

Example: FWU33A

Internal fittings
Distributor kit(s): - Slot width for 12 modules - Distance between DIN rails: 125 mm
Without QuickConnect and without QuickConnect support
Door: - **Closed** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual

FWUxxD

Product code
FWU31D
FWU32D
FWU33D
FWU41D
FWU42D
FWU43D
FWU51D
FWU52D
FWU53D
FWU61D
FWU62D
FWU63D
FWU71D
FWU72D
FWU73D

Example: FWU41D

Without internal fitting system
Door: - **Closed** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual

FWUxxGS

Product code
FWU32GS
FWU42GS
FWU52GS
FWU62GS
FWU72GS

Example: FWU62GS

Internal fittings
Distributor kit(s): - Slot width for 12 modules - Distance between DIN rails: 125 mm
QuickConnect configuration (at the top of each distributor kit) Height 3: **2x KN10E** **+ KN18E** Heights 4, 5, 6 and 7: **2x KN10E** **+ KN22E**
Door: - Closed - Steel - **Transparent** plastic insert - **univers door handle** - From size 5, right-hand door with stiffener strip
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual

FWUxxK

Product code
FWU42K
FWU43K
FWU52K
FWU53K
FWU62K

Example: FWU43K

Internal fittings	
Distributor kit(s): - Slot width for 12 modules - Distance between DIN rails: 125 mm	Multimedia kit: - Pre-mounted plastic mounting plates - Number of mounting plates per size: see UMx1UK - Cable duct cover FWU00Cx pre-mounted on the outside next to the multimedia field
Vertical partition FWU00Vx pre-mounted between the distributor and the multimedia kit	
QuickConnect configuration (at the top of each distributor kit) Heights 4, 5 and 6: **KN22E**	
Door: - **Closed** - Steel - **90SL door handle** - From size 5, right-hand door with stiffener strip	
Included in the scope of delivery: - 4 cable clips - 10 long and 10 short screws for the plastic mounting plate - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual - Diagram pocket FZ794	

FWUxxK1

Product code
FWU32K1
FWU42K1
FWU52K1
FWU62K1
FWU72K1

Example: FWU42K1

Internal fittings	
Distributor kit: - Slot width for 12 modules - Distance between DIN rails: 125 mm	Multimedia kit: - Pre-mounted plastic mounting plates - Number of mounting plates per size: see UMx1UK - Cable duct cover FWU00Cx pre-mounted on the outside next to the multimedia field
Vertical partition FWU00Vx pre-mounted between the distributor and the multimedia kit	
QuickConnect configuration (at the top of each distributor kit) Height 3: **2x KN10E** **+ KN18E** Heights 4, 5, 6 and 7: **2x KN10E** **+ KN22E**	
Door: - **Slotted** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip	
Included in the scope of delivery: - 4 cable clips - 10 long and 10 short screws for the plastic mounting plate - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual - Diagram pocket FZ794	

FWUxxK2

Product code
FWU32K2
FWU42K2
FWU52K2
FWU62K2
FWU72K2

Example: FWU52K

Internal fittings	
Distributor kit: - Slot width for 12 modules - Distance between DIN rails: 125 mm	Multimedia kit: - Pre-mounted plastic mounting plates - Number of mounting plates per size: see UMx1UK - Cable duct cover FWU00Cx pre-mounted on the outside next to the multimedia field
Vertical partition FWU00Vx pre-mounted between the distributor and the multimedia kit	
QuickConnect configuration (at the top of each distributor kit)	
Height 3: **2x KN10E** **+ KN18E**	
Heights 4, 5, 6 and 7: **2x KN10E** **+ KN22E**	
Door: - **Closed** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip	
Included in the scope of delivery: - 4 cable clips - 10 long and 10 short screws for the plastic mounting plate - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual - Diagram pocket FZ794	

FWUxxL

Product code
FWU31L
FWU32L
FWU33L
FWU41L
FWU42L
FWU43L
FWU51L
FWU52L
FWU53L
FWU61L
FWU62L
FWU63L
FWU71L
FWU72L
FWU73L
FWU81L

Example: FWU42L

Without internal fitting system
Without frame and without door
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual

FWUxxM2

Product code
FWU32M2
FWU42M2
FWU52M2
FWU62M2
FWU72M2

Example: FWU72M2

Internal fittings
Distributor kit: - **Slot width for 26 modules** - Continuous DIN rails (500 mm wide) - Distance between DIN rails: 125 mm
QuickConnect configuration (top) Height 3: **2x KN22E** Height 4: **KN26E** **+ KN22E** Height 5: **KN26E** **+ KN22E** Height 6: **3x KN22E** **+ KN99E** Height 7: **3x KN22E** **+ KN99E**
Door: - **Closed** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual

FWUxxN

Product code
FWU52N
FWU53N
FWU62N
FWU63N
FWU72N
FWU73N

Example: FWU63N

Internal fittings
2 top rows: - For terminal blocks - Closed covers - **Insulated DIN rails UT22C** - **Distance between DIN rails: 150 mm**
Distributor kit(s): - Slot width for 12 modules - **Distance between DIN rails: 150 mm**
Without QuickConnect and without QuickConnect support
Door: - **Closed** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual

FWUxxS

Product code
FWU31S
FWU32S
FWU33S
FWU41S
FWU42S
FWU43S
FWU51S
FWU52S
FWU53S
FWU61S
FWU62S
FWU63S
FWU71S
FWU72S
FWU73S

Example: FWU61S

Internal fittings				
QuickConnect configuration (at the top of each distributor kit)				
Height 3:	**2x KN10E**		**+ KN18E**	
Heights 4, 5, 6 and 7:	**2x KN10E**		**+ KN22E**	
Door: - **Closed** - Steel - **univers door handle** - From size 5, right-hand door with stiffener strip				
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual				

FWUxxS1

Product code
FWU31S1
FWU32S1
FWU33S1
FWU41S1
FWU42S1
FWU43S1
FWU51S1
FWU52S1
FWU53S1
FWU61S1
FWU62S1
FWU63S1
FWU71S1
FWU72S1
FWU73S1

Example: FWU73S1

Internal fittings		
QuickConnect configuration (at the top of each distributor kit)		
Height 3:	**KN18E**	
Heights 4, 5, 6 and 7:	**KN22E**	
Door: - **Closed** - Steel - **90SL door handle** - From size 5, right-hand door with stiffener strip		
Included in the scope of delivery: - 4 cable clips - DIN A4 label strips with type label - DIN A4 circuit table - FWU installation manual - QuickConnect installation manual		

4.3 Frames and doors

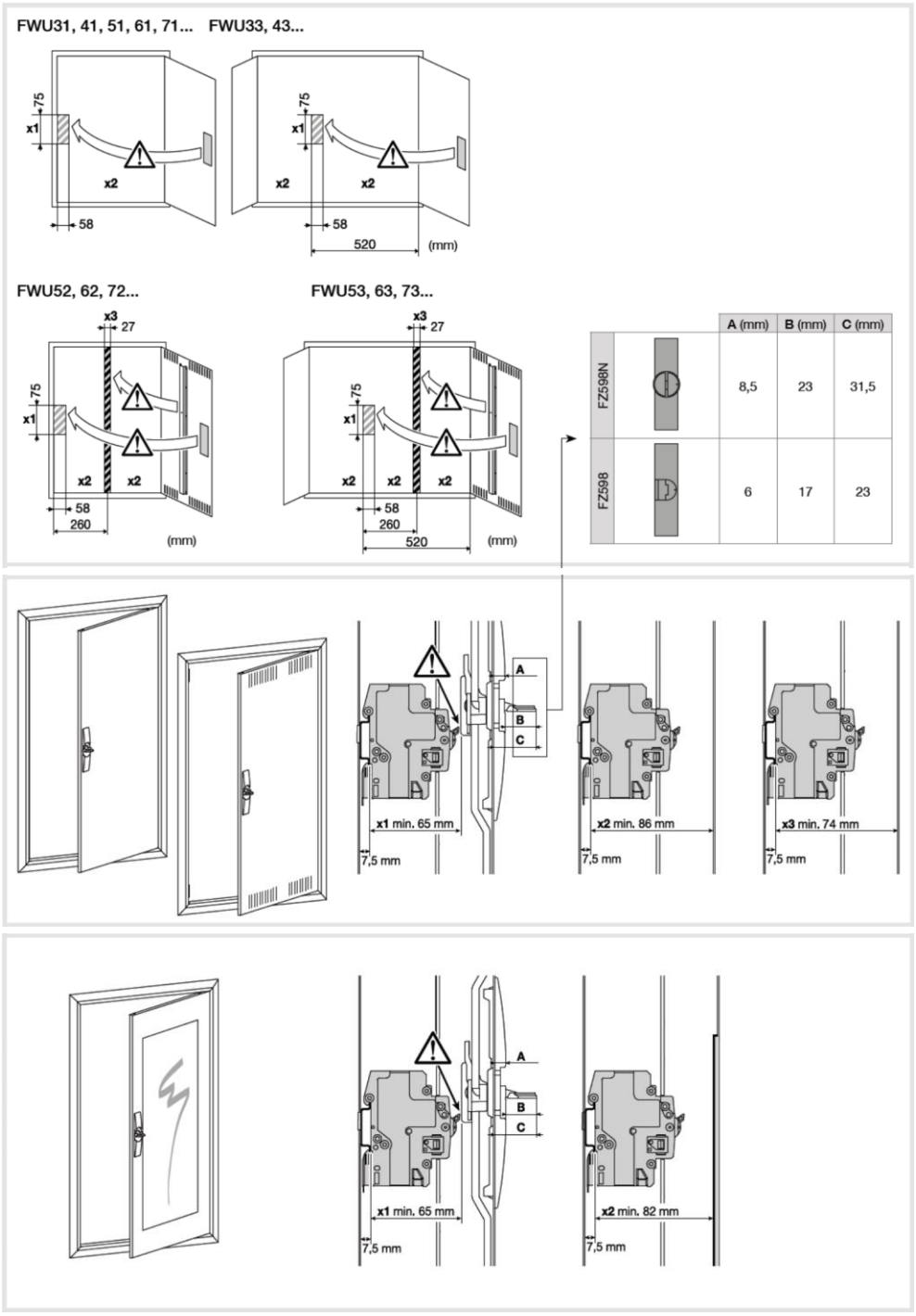
4.3.1 Features

- Front-flush, door can be closed from the right or left
- Can be dismantled without tools
- Inside, adjustable hinge
- Available with metal plate doors (closed door), clear doors (transparent door) or multimedia plastic doors (multimedia door)
- Double door on enclosure width 800 mm (3 fields)
- Door opening angle: 110°

- Standard door can be sealed and can be upgraded with a key or special lock
- 2 different door handles available
  FZ598 (90SL door handle) or FZ598N (univers door handle)

- 3-point rod lock with lever handle and push rods on double doors
- 1-point rod locking with lever handle on single doors
- From size 5 (750 mm tall), 2-field doors have a rear stiffener strip in the centre
- On right-hand doors, delivered as individual parts (FZ010N, NM, etc.), the door rods must be dismantled for installation in a single-door enclosure (550 mm wide). They can be dismantled without tools by unclipping the top/bottom guide, and turning the rods 180° around the door handle (see “Frame details”).

- Frames only 13 mm deep (wall overhang)
- Frames without a door can be ordered via order number FZ0xxx
- Frames with pre-mounted door can be ordered via order number FZ1xxx
- Distance of door to interior fitting elements: see illustration below



Notes for installing the door: Distance of door to interior fitting elements

4.3.2 Coding

The **order number code for frames with door** comprises:

- the type of enclosure: **FZ1**...
- the housing dimensions (height and width): FZ1**42**NV1
- the door designation: FZ142**NV1**

Product code ending	Door type	Door handle
F	Frame with closed door	FZ598
FM2	Frame with closed multimedia door	FZ598
NM	Frame with slotted multimedia door	FZ598N
NV1	Frame with slotted door	FZ598N

The **order number code for frames without door** comprises:

- the type of enclosure: **FZ0**…**F**
- the housing dimensions (height and width): FZ0**42**F

Example: FZ141NV1 frame with door

Example: FZ042F frame without door

4.3.3 Door product codes: Single doors with univers door handle

Closed door, max. IP44, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	FZ001N	-	FZ002N	FZ003N	FZ002N
4 (650 mm)	-	FZ005N	-	FZ006N	FZ007N	FZ006N
5 (800 mm)	-	FZ009N	-	FZ010N	FZ011N	FZ010N
6 (950 mm)	-	FZ013N	-	FZ014N	FZ015N	FZ014N
7 (1100 mm)	-	FZ021N	-	FZ022N	FZ023N	FZ022N
8 (1250 mm)	-	FZ026N	-	-	-	-

Closed door, max. IP30, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	FZ001F	-	FZ002F	FZ003F	FZ002F
4 (650 mm)	-	FZ005F	-	FZ006F	FZ007F	FZ006F
5 (800 mm)	-	FZ009F	-	FZ010F	FZ011F	FZ010F
6 (950 mm)	-	FZ013F	-	FZ014F	FZ015F	FZ014F
7 (1100 mm)	-	FZ021F	-	FZ022F	FZ023F	FZ022F
8 (1250 mm)	-	FZ026F	-	-	-	-

Slotted door, max. IP3X, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	FZ001NV1	-	FZ002NV1	FZ003NV	FZ002NV1
4 (650 mm)	-	FZ005NV1	-	FZ006NV1	FZ007NV	FZ006NV1
5 (800 mm)	-	FZ009NV1	-	FZ010NV1	FZ011NV	FZ010NV1
6 (950 mm)	-	FZ013NV1	-	FZ014NV1	FZ015NV	FZ014NV1
7 (1100 mm)	-	FZ021NV1	-	FZ022NV1	FZ023NV	FZ022NV1
8 (1250 mm)	-	FZ026NV1	-	-	-	-

Transparent door, max. IP44, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	FZ105N	-	FZ107N	FZ140N	FZ107N
4 (650 mm)	-	FZ108N	-	FZ104N	FZ141N	FZ104N
5 (800 mm)	-	FZ142N	-	FZ106N	FZ143N	FZ106N
6 (950 mm)	-	FZ145N	-	FZ110N	FZ146N	FZ110N
7 (1100 mm)	-	FZ148N	-	FZ102N	FZ149N	FZ102N
8 (1250 mm)	-	FZ153N	-	-	-	-

Transparent door, max. IP30, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	-	-	-	-	-
4 (650 mm)	-	-	-	FZ006FT	-	FZ006FT
5 (800 mm)	-	-	-	FZ010FT	-	FZ010FT
6 (950 mm)	-	-	-	FZ014FT	-	FZ014FT
7 (1100 mm)	-	-	-	FZ022FT	-	FZ022FT
8 (1250 mm)	-	-	-	-	-	-

Multimedia slotted door, max. IP3X, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	-	-	FZ002NM	-	FZ002NM
4 (650 mm)	-	FZ005NM	-	FZ006NM	FZ007NM	FZ006NM
5 (800 mm)	-	FZ009NM	-	FZ010NM	FZ011NM	FZ010NM
6 (950 mm)	-	FZ013NM	-	FZ014NM	-	FZ014NM
7 (1100 mm)	-	FZ021NM	-	FZ022NM	-	FZ022NM
8 (1250 mm)	-	FZ026NM	-	-	-	-

Multimedia closed door, max. IP44, univers door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	-	-	FZ002NM2	-	FZ002NM2
4 (650 mm)	-	-	-	FZ006NM2	-	FZ006NM2
5 (800 mm)	-	-	-	FZ010NM2	-	FZ010NM2
6 (950 mm)	-	-	-	FZ014NM2	-	FZ014NM2
7 (1100 mm)	-	FZ021NM2	-	FZ022NM2	-	FZ022NM2
8 (1250 mm)	-	FZ026NM2	-	-	-	-

4.3.4 Door product codes: Single doors with 90SL door handle

Closed door, max. IP44, 90SL door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	FZ001F1	-	FZ002F1	FZ003N	FZ002F1
4 (650 mm)	-	-	-	-	FZ007N	-
5 (800 mm)	-	-	-	-	FZ011N	-
6 (950 mm)	-	-	-	FZ014F1	FZ015N	FZ014F1
7 (1100 mm)	-	-	-	FZ022F1	FZ023N	FZ022F1
8 (1250 mm)	-	-	-	-	-	-

Slotted door, max. IP3X, 90SL door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	-	-	-	FZ003NV	-
4 (650 mm)	-	FZ005NV	-	FZ006NV	FZ007NV	FZ006NV
5 (800 mm)	-	FZ009NV	-	FZ010NV	FZ011NV	FZ010NV
6 (950 mm)	-	FZ013NV	-	FZ014NV	FZ015NV	FZ014NV
7 (1100 mm)	-	FZ021NV	-	FZ022NV	FZ023NV	FZ022NV
8 (1250 mm)	-	FZ026NV	-	-	-	-

Multimedia slotted door, max. IP3X, 90SL door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	-	-	FZ002FM	-	FZ002FM
4 (650 mm)	-	FZ005FM	-	FZ006FM	FZ007FM	FZ006FM
5 (800 mm)	-	FZ009FM	-	FZ010FM	FZ011FM	FZ010FM
6 (950 mm)	-	FZ013FM	-	FZ014FM	-	FZ014FM
7 (1100 mm)	-	FZ021FM	-	FZ022FM	-	FZ022FM
8 (1250 mm)	-	FZ026FM	-	-	-	-

Multimedia closed door, max. IP43, 90SL door handle

	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
Height	Left-hand door	Right-hand door	Left-hand door	Right-hand door	Left-hand door	Right-hand door
3 (500 mm)	-	-	-	FZ002FM2	-	FZ002FM2
4 (650 mm)	-	-	-	FZ006FM2	-	FZ006FM2
5 (800 mm)	-	-	-	FZ010FM2	-	FZ010FM2
6 (950 mm)	-	-	-	FZ014FM2	-	FZ014FM2
7 (1100 mm)	-	FZ021FM2	-	FZ022FM2	-	FZ022FM2
8 (1250 mm)	-	FZ026FM2	-	-	-	-

4.3.5 Overview of flush frame product codes

Size 3	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 500 mm	FZ031F	FZ032F	FZ033F

Size 4	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 650 mm	FZ041F FZ141F FZ141FM2 FZ141NM FZ141NV1	FZ042F FZ142F FZ142FM2 FZ142NM FZ142NV1	FZ043F FZ143F FZ143FM2 FZ143NM FZ143NV1

Size 5	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 800 mm	FZ051F FZ151F FZ151FM2 FZ151NM FZ151NV1	FZ052F FZ152F FZ152FM2 FZ152NM FZ152NV1	FZ053F FZ153F FZ153FM2 FZ153NM FZ153NV1

Size 6	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 950 mm	FZ061F FZ161F FZ161FM2 FZ161NM FZ161NV1	FZ062F FZ162F FZ162FM2 FZ162NM FZ162NV1	FZ063F - - - -

Size 7	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 1100 mm	FZ071F FZ171F FZ171FM2 FZ171NM FZ171NV1	FZ072F - - - -	FZ073F - - - -

Size 8	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Enclosure height 1250 mm	FZ081F	-	-
	FZ181F	-	-
	FZ181FM2	-	-
	FZ181NM	-	-
	FZ181NV1	-	-

4.3.6 Frame details

FZ0xxF

Example: FZ042F

- Frame without a door for ordering as individual parts
- Can be combined with wall cabinet FWUxxL
- Included in the scope of delivery:
  - 4 screws for fixing to the wall cabinet

An overview of all frame sizes is illustrated in the table below:

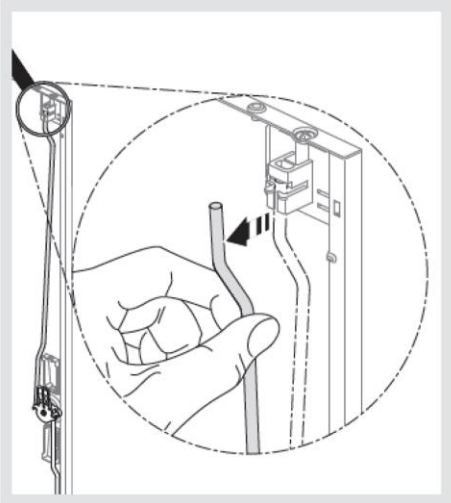
Height	Width 1 (300 mm)	Width 2 (550 mm)	Width 3 (800 mm)
3 (500 mm)	FZ031F	FZ032F	FZ033F
4 (650 mm)	FZ041F	FZ042F	FZ03F
5 (800 mm)	FZ051F	FZ052F	FZ053F
6 (950 mm)	FZ061F	FZ062F	FZ063F
7 (1100 mm)	FZ071F	FZ072F	FZ073F
8 (1250 mm)	FZ081F	-	-

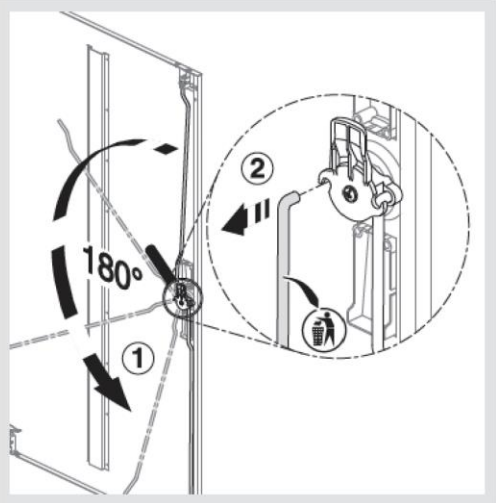
The required FZ… door to match the corresponding frame size must be selected from the table in “Overview of door product codes”.

As all right-hand doors can be installed as double doors and as single doors, they must be pre-mounted with two door rods for 3-point attachment in the centre of the enclosure.

Door rods (FZ83xN) must be removed for installation in single-door enclosures as the rods in the top/bottom area collide with the corner of the wall cabinet.

It is easy to remove the door rods without any tools: First, unclip the rods from the top and bottom rod holders, then turn them 180° around the holder behind the handle on the back of the door.





FZ1xxF

Product code
FZ141F
FZ142F
FZ143F
FZ151F
FZ152F
FZ153F
FZ161F
FZ162F
FZ171F
FZ181F

Example: FZ142F

- Frame with door for ordering as individual parts
- Can be combined with wall cabinet FWUxxL
- Door:
  - **Closed**
  - Steel
  - **90SL door handle**
  - From size 5, right-hand door with stiffener strip
  - On enclosure sizes 53 and 63, closed left-hand door made of steel (without plastic)
- Colour: RAL 9010
- Included in the scope of delivery:
  - 4 screws for fixing to the wall cabinet

FZ1xxFM2

Product code
FZ141FM2
F14Z2FM2
FZ143FM2
FZ151FM2
FZ152FM2
FZ153FM2
FZ161FM2
FZ162FM2
FZ171FM2
FZ181FM2

Example: FZ181FM2

- Frame with door for ordering as individual parts
- Can be combined with wall cabinet FWUxxL
- Door:
  - **Closed, multimedia**
  - Steel frame
  - Plastic insert in the centre for better WLAN access, opaque (not transparent)
  - **90SL door handle**
  - Without stiffener strip
  - On enclosure sizes 53 and 63, closed left-hand door made of steel (without plastic)
- Colour: RAL 9010
- Included in the scope of delivery:
  - 4 screws for fixing to the wall cabinet

FZ1xxNM

Product code
FZ141NM
FZ142NM
FZ143NM
FZ151NM
FZ152NM
FZ153NM
FZ161NM
FZ162NM
FZ171NM
FZ181NM

Example: FZ143NM

- Frame with door for ordering as individual parts
- Can be combined with wall cabinet FWUxxL
- Door:
  - **Slotted, multimedia**
  - Steel frame
  - Slotted plastic panel in the centre for better WLAN access, opaque (not transparent)
  - **univers door handle**
  - Without stiffener strip
  - On enclosure sizes 53 and 63, closed left-hand door made of steel (without plastic)
- Colour: RAL 9010
- Included in the scope of delivery:
  - 4 screws for fixing to the wall cabinet
  - DIN A4 circuit table

FZ1xxNV1

Product code
FZ141NV1
F14Z2NV1
FZ143NV1
FZ151NV1
FZ152NV1
FZ153NV1
FZ161NV1
FZ162NV1
FZ171NV1
FZ181NV1

Example: FZ162NV1

- Frame with door for ordering as individual parts
- Can be combined with wall cabinet FWUxxL
- Door:
  - **Slotted**
  - Steel
  - **univers door handle**
  - From size 5, right-hand door with stiffener strip
  - On enclosure sizes 53 and 63, slotted left-hand door made of steel (without plastic)
- Colour: RAL 9010
- Included in the scope of delivery:
  - 4 screws for fixing to the wall cabinet
  - DIN A4 circuit table

5 Assembling the body/wall cabinet

5.1 Protected and packaged during transport/integrated plaster guard

The FWU field distributor is fully packaged similarly to in a shoe box. This protects it more effectively from scratches, dust or white rust than the former FW version.

The lower half-shell of the wall cabinet is wrapped in corrugated paper and covered with a cardboard surface which can be used to protect the plaster during assembly (see the section entitled “Using the plaster guard”).

The frame + door assembly is packaged separately for secure intermediate storage. On version L (wall cabinet without frame and door), a second half shell is mounted at the top.

Well-thought-out packaging for the FWU field distributor: full plaster guard, separate packaging of frame and door for secure intermediate storage

5.2 Before installing in the wall

If you wish to use the cable entries at the side and rear of the wall cabinet, you must prepare them before installing the cabinet in the wall.

A few optional accessories must also be mounted before installing the wall cabinet in the wall:

- FD00P5 ventilation set
- Enclosure-to-enclosure connections with the FWU00F1 connection set

In order to install these accessories in a wall cabinet that has already been installed in the wall, you must first remove it from the wall again.

5.2.1 Cutting out cable entries at the side and rear

The cable entries used at the side and the rear of the wall cabinet must be cut out prior to installation.

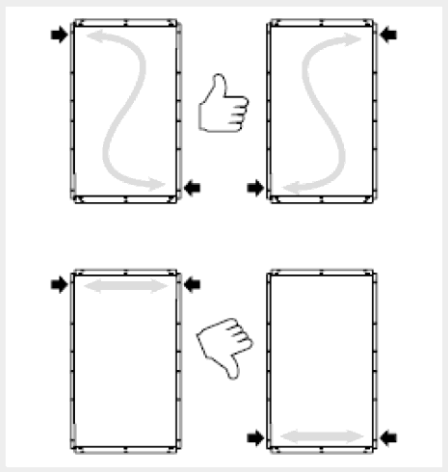
- To do so, from the outside, score along the groove around the closed cable entry.
- Then knock out the cable entry with a hammer. You can also completely cut out the cable entries with a knife by applying sufficient pressure.

5.2.2 FD00P5 ventilation insert

Ventilation panels for flush-mounted/hollow wall applications can be mounted on the side of the enclosure. The FD00P5 ventilation insert is suitable for improving ventilation. Two FD00P5 ventilation inserts are provided in the set. It only makes sense to use the FD00P5 ventilation insert if there is a cavity behind the wall, e.g. for hollow wall applications.

Positioning the ventilation panels asymmetrically on the wall cabinet

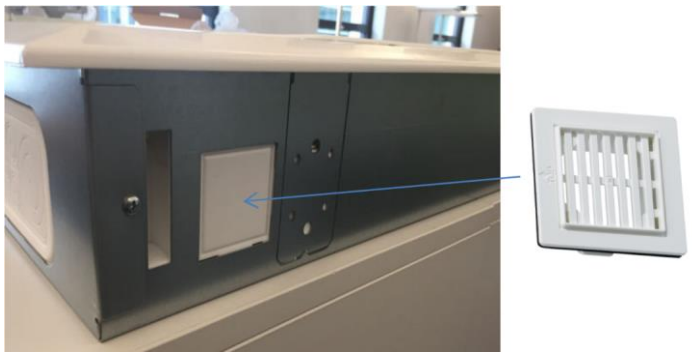
To obtain the maximum effect, the ventilation panels must be positioned asymmetrically:



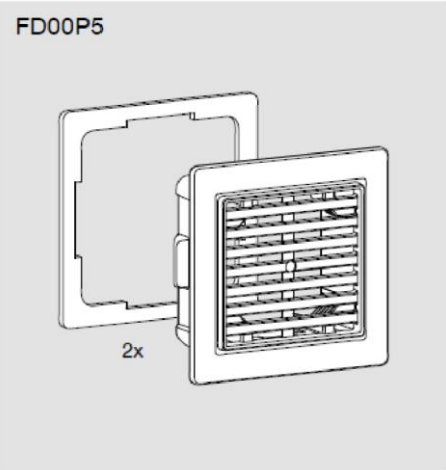
Positioning the ventilation panels, illustrating how the air circulates

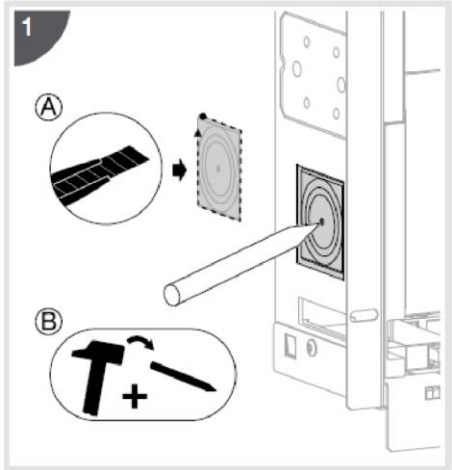
- Top:
  2 examples of asymmetric assembly: maximum effect
- Bottom:
  2 examples of asymmetric assembly: not recommended

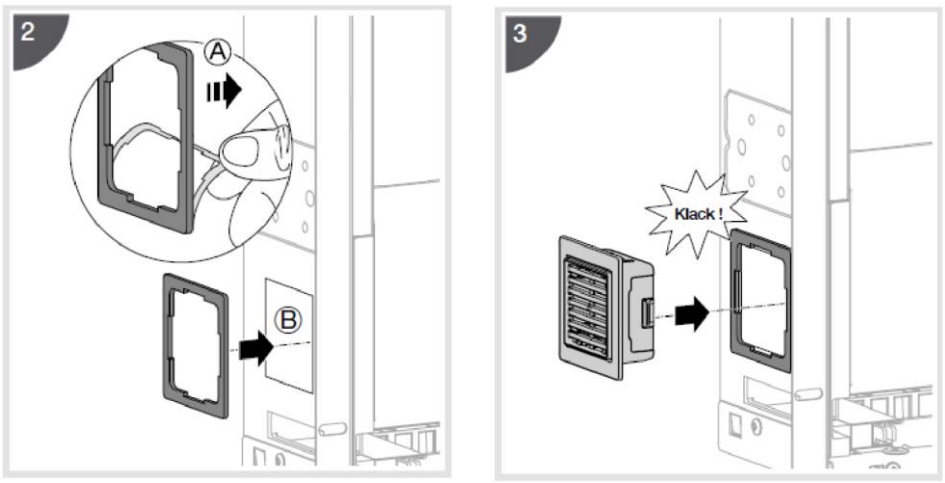
Mounting the ventilation inserts



Positioning the FD00P5 on the wall cabinet







Mounting the FD00P5 ventilation inserts before installing the wall cabinet in the wall

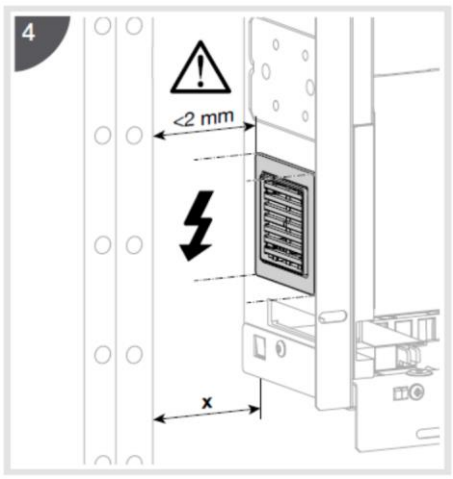
Ensure clearance in front of the ventilation panels

⚠ WARNING

Risk of electric shock!

The insulation (air clearance and creepage distance) must be guaranteed, and any possible voltage transfers must be avoided.

➢ Inside the hollow wall, an area of at least 2 mm in front of the ventilation openings must be kept clear of metal components



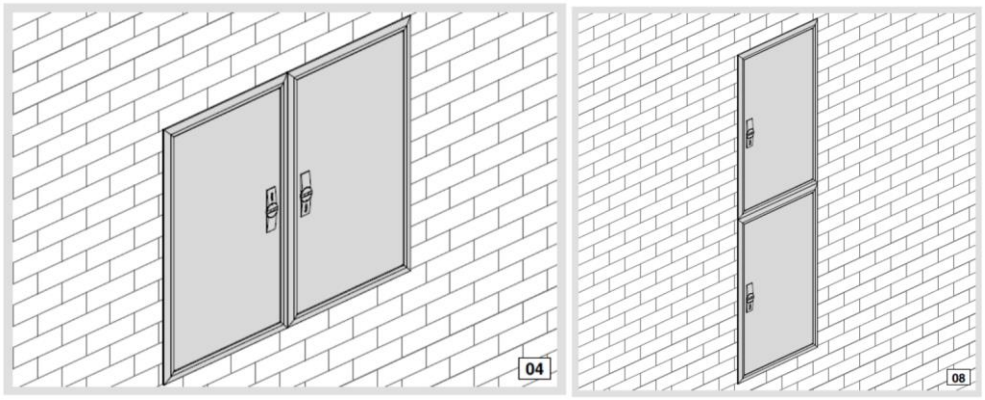
At least 2 mm in front of the ventilation openings must be kept clear of metal components.

- To ensure optimum air circulation, Hager recommends keeping an area of 50 mm clear in front of the ventilation openings.
- Also observe the following: When using VZ405N hollow wall anchors, leave a space of at least 32 mm so that the anchors can be flipped forward unhampered.

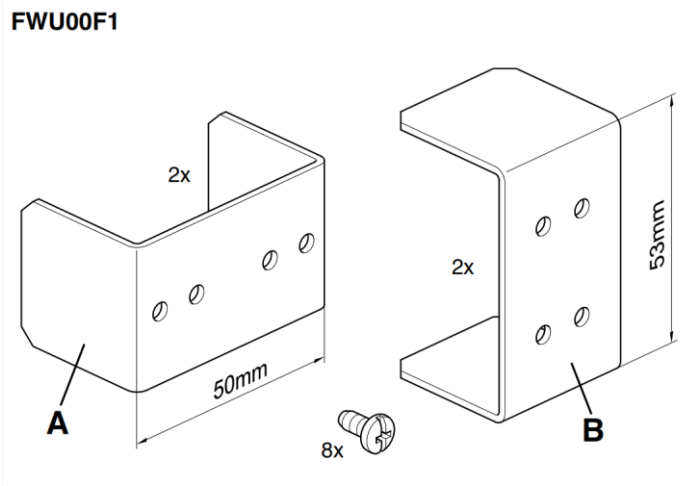
5.2.3 Enclosure-to-enclosure connection with the FWU00F1 connection set

Two enclosures can be mechanically connected together with the aid of the FWU00F1 connection set. They can be connected next to or above one another.

Frames can then be flush-mounted with the aid of the connection set.



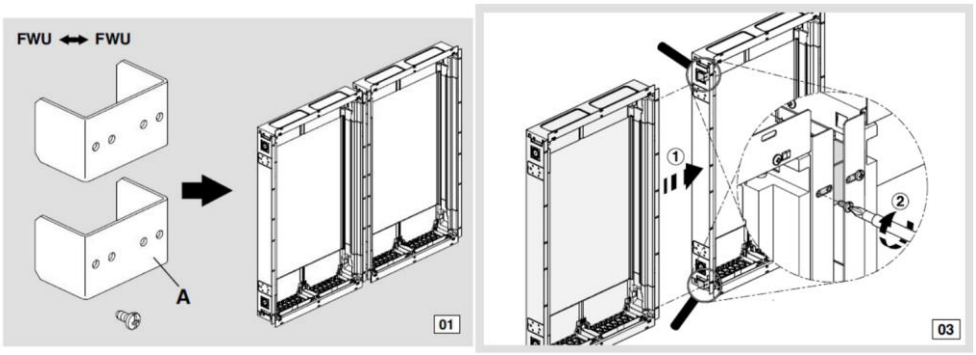
Flush-mounting of frames over two wall cabinets connected together



Width of bracket in the FWU00F1 connection set

Horizontal enclosure-to-enclosure connection

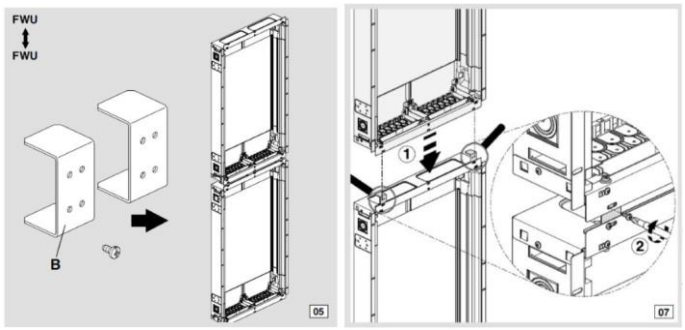
The FWU00F1 connection set enables two wall cabinets to be mechanically attached together via the elongated holes at the sides with the aid of two C-angle brackets. All 4 holes in the brackets are lined up horizontally. The 2 brackets for the horizontal connection are 50 mm wide.



Attaching two wall cabinets next to each other (horizontally)

Vertical enclosure-to-enclosure connection

The FWU00F1 connection set enables two wall cabinets to be mechanically attached to the elongated holes at the top and bottom with the aid of two C-angle brackets. On the brackets, one pair of holes is arranged above another pair. The 2 brackets for the vertical connection are 53 mm wide.



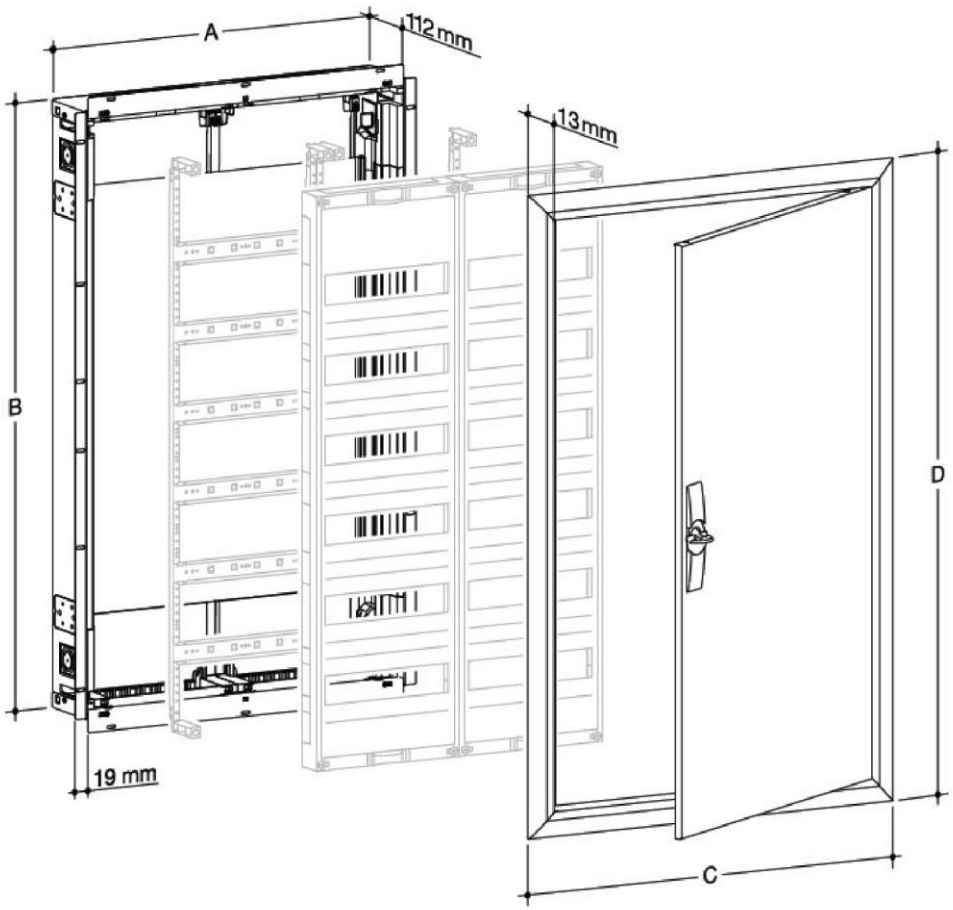
Attaching two wall cabinets above one another (vertically)

The assembly procedure is described in detail in installation manual 6LE006998.

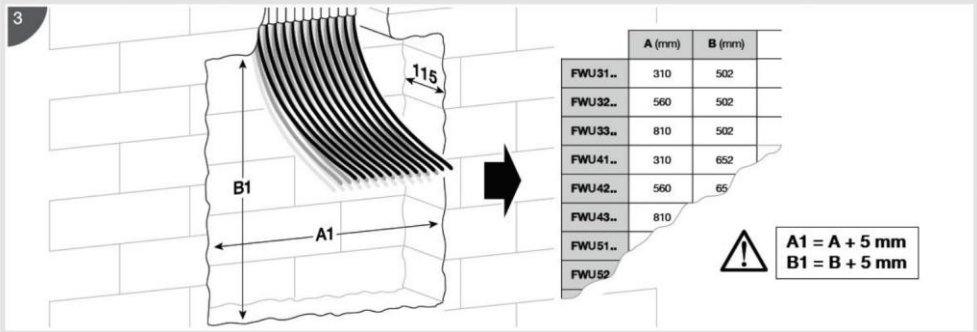
5.3 Wall installation

5.3.1 Wall installation measurement/dimensions

Wall installation measurements for a wall niche or a hollow wall are provided in installation manual 6LE005468 which is supplied with the enclosure:



	A (mm)	B (mm)	C (mm)	D (mm)
FWU31…	310	502	353	553
FWU32…	560	502	603	553
FWU33…	810	502	853	553
FWU41…	310	652	353	703
FWU42…	560	652	603	703
FWU43…	810	652	853	703
FWU51…	310	802	353	853
FWU52…	560	802	603	853
FWU53…	810	802	853	853
FWU61…	310	952	353	1003
FWU62…	560	952	603	1003
FWU63…	805	952	853	1003
FWU71…	310	1102	353	1153
FWU72…	560	1102	603	1153
FWU73…	810	1102	853	1153
FWU81…	310	1252	353	1303



Dimensions of the wall niche or hollow wall for the enclosure installation

5.3.2 Wall installation options

The wall cabinet can be attached to the wall in 3 different ways:

- With the aid of built-in wall supports
- Via the elongated holes on the sides of the body
- Using VZ405N hollow wall anchors (accessory)

Attaching the wall cabinet to the wall with the aid of built-in wall supports

The wall cabinet can be screwed into the wall with the aid of the built-in wall supports (which are bent back). Each 3- to 6-row wall cabinet contains 4 supports and each 7- and 8-row wall cabinet contains 6 supports.

Wall cabinets with bent back wall supports

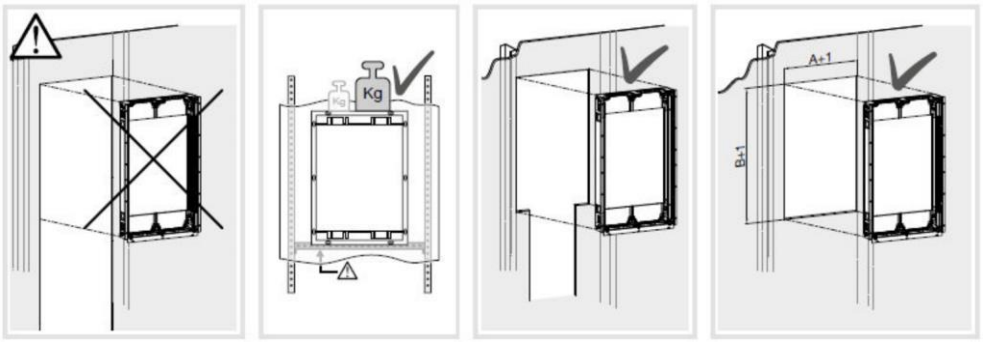
Attaching the wall cabinet directly to the wall via the elongated holes on the sides of the body

The wall cabinet can be directly attached to the wall via the elongated holes on the sides of the body.

Wall cabinet ready to be attached to the wall
via the elongated holes on the sides of the body

Attaching the wall cabinet using VZ405N hollow wall anchors

Important note: If installing the wall cabinet in a hollow wall, ensure that the weight of the enclosure is sufficiently supported from below.



The wall cabinet can also be installed inside a hollow wall using the hollow wall anchors. You can find more information about attaching the wall cabinet to the wall using VZ405N hollow wall anchors in “VZ405N hollow wall anchors”.

Wall cabinets with hollow wall anchor folded out

5.3.3 Using the plaster guard

As standard, a full-size plaster guard made of reinforced corrugated paper is included in the scope of delivery of the FWU field distributor.

After installing the wall cabinet in the wall, fold back the plaster guard along the perforated line on each edge, and insert into the wall cabinet up to the stop.

Plaster guard with perforated lines for folding back

In the centre of the plaster guard there are two round pre-punched holes. These can be used to manually remove it after plastering.

Plaster guard inserted into the wall cabinet with pre-punched holes

Note

The front of the plaster guard has a water-repellent coating which is why it must always be inserted into to the wall opening as the face. The back of the plaster guard can be recognised by the pre-stamped product number and the “RESY” recycling symbol.

Product number

Recycling symbol

6 univers FW internal fitting system

6.1 Coding

The FWU enclosure is equipped to receive univers FW kits.

The univers FW kits use vertical uprights made of profiled and galvanised steel plate with a 13 mm-deep U profile. These vertical uprights are 14 mm thinner than the univers vertical uprights and are therefore suitable for compact installation in a wall niche 110 mm deep.

The device vertical uprights (DIN rails) are made of galvanised steel and arranged at 125 mm or 150 mm intervals.

The internal fitting kits have a grid dimension that is 250 mm wide and 150 mm high, as in the univers system. The kit dimensions are calculated by combining 2 digits:

Height (mm)	First digit
450	3
600	4
750	5
900	6
1050	7
1200	8

Width (mm)	Second digit
250	1
500	2
750	3

Example: The UW51U kit is 750 mm high and 250 mm wide.

The kits are clicked into place as standard using univers Z UZ03A1 tower underparts.

6.2 Kit pre-mounted

6.2.1 Distributor kits UWxxUx

Distributor kits comprise:

- vertical uprights
- DIN rails
- QuickConnect terminals and supports
- Support towers
- Covers

From size 7 (1100 mm), two covers are used on top of one another. With all covers, the distance between the rows of modules is 125 mm (slits).

Example: UW81U

Example: UW81UA

Kit	Height	Width 1 (250 mm)	QC fitting
Distributor kit with green-yellow/blue QC	3 (450 mm)	UW31U	KN18E + 2 x KN10N
	4 (600 mm)	UW41U	KN22E + 2 x KN10N
	5 (750 mm)	UW51U	KN22E + 2 x KN10N
	6 (900 mm)	UW61U	KN22E + 2 x KN10N
	7 (1050 mm)	UW71U	KN22E + 2 x KN10N
	8 (1200 mm)	UW81U	KN22E + 2 x KN10N

Kit	Height	Width 1 (250 mm)	QC fitting
Distributor kit with green/yellow QC	3 (450 mm)	UW31UA	KN18E
	4 (600 mm)	UW41UA	KN22E
	5 (750 mm)	UW51UA	KN22E
	6 (900 mm)	UW61UA	KN22E
	7 (1050 mm)	UW71UA	KN22E
	8 (1200 mm)	UW81UA	KN22E

6.2.2 Multimedia kits

UMx1UK

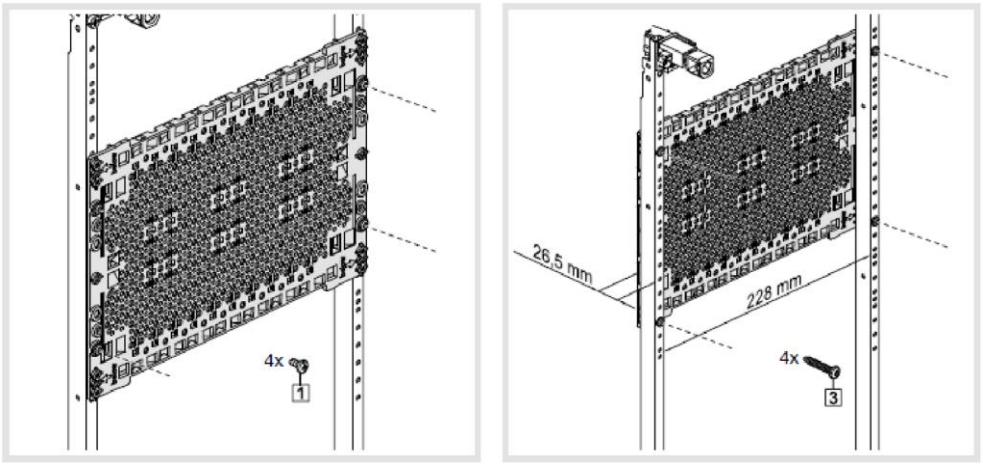
As part of the FWU field distributor project, new plastic plates have been developed for multimedia applications. These new kits with 250 mm-wide plastic plates can be ordered under product code **UMx1UK**:

Kit	Height	Width 1 (250 mm)	Number of plates	Number of 9.5 mm-long screws	Number of 25 mm-long screws
Multimedia kit with plastic mounting plate	3 (450 mm)	UM31UK	1	10	10
	4 (600 mm)	UM41UK	2	10	10
	5 (750 mm)	UM51UK	3	10	10
	6 (900 mm)	UM61UK	4	20	20
	7 (1050 mm)	UM71UK	4	20	20
	8 (1200 mm)	UM81UK	5	20	20

Example: UM41UK

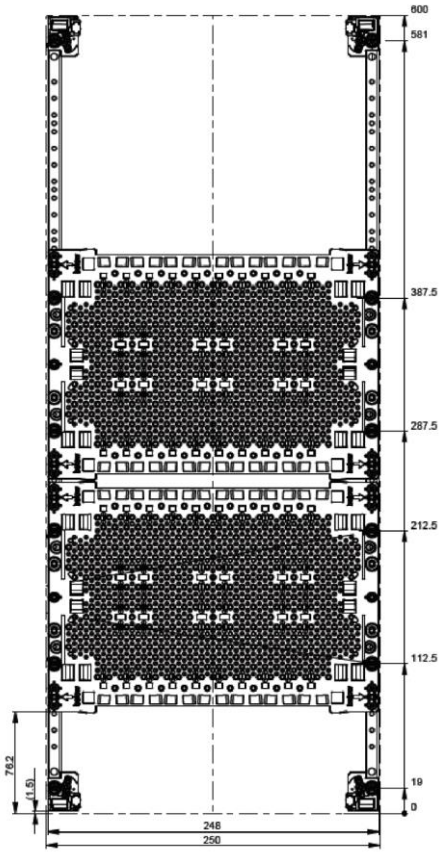
The short screws supplied are used for directly mounting multimedia devices to the plate.

The long screws supplied can be used to attach the devices, but also enables the plates to be positioned on the back of the vertical uprights (gaining a depth of 26.5 mm).



Mounting the UMx1UK plastic mounting plate
Left: on the front of the vertical uprights
Right: on the back of the vertical uprights

In each UMx1UK support frame, the lower plate is positioned at 75 mm from the lower edge of the vertical upright so that the Volta triple socket can be mounted directly underneath.



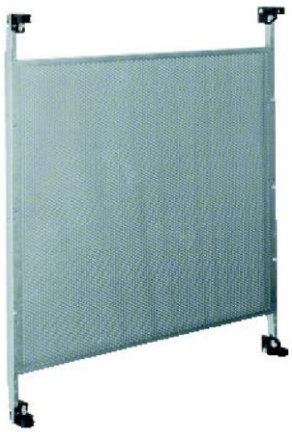
UMx1UK support frame: distance of 75 mm between edge of vertical upright and lowest plate

When attaching multimedia devices to the plastic plate with screws, do not exceed the maximum tightening torque specified (see “UM00M0 plastic mounting plate”).

UNxxTN

The existing UNxxTN multimedia kits with perforated plates are still available. They are composed of one single plate that cannot be moved downwards. These kits are are 250 or 500 mm wide. With all these product codes, 20 plate screws (short and long) are supplied for directly attaching multimedia devices.

Kit	Height	Width 1 (250 mm)	Width 2 (500 mm)	Number of 13 mm-deep screws	Number of 22 mm-deep screws
Multimedia panel with metal mounting plate	3 (450 mm)	UN31TN	UN32TN	10	10
	4 (600 mm)	UN41TN	UN42TN	10	10
	5 (750 mm)	UN51TN	UN52TN	10	10
	6 (900 mm)	UN61TN	UN62TN	10	10
	7 (1050 mm)	UN71TN	UN72TN	10	10
	8 (1200 mm)	-	-	-	-



Example: UN42TN

6.2.3 Hybrid kits

The following hybrid kits from the former FW enclosure range are still available. They consist of rows of modules at the top and mounting plates at the bottom.

UMx1U1/UMx1U2/UMx1U3/UMx1U4 (Switzerland)

The ...1U1 to ...1U4 modules are intended for Switzerland, and include an FLF 4-way socket. The modules include a green/yellow cable H07V-K 1.5 mm^2 for the equipotential bonding.

Kit	Height	Width 1 (250 mm)
Multimedia kit with FLF 4-way socket and 1 DIN rail	3 (450 mm)	-
	4 (600 mm)	UM41U1
	5 (750 mm)	UM51U1
	6 (900 mm)	UM61U1
	7 (1050 mm)	-
	8 (1200 mm)	-

Example:
UM41U1

Kit	Height	Width 1 (250 mm)
Multimedia kit with FLF 4-way socket and 2 DIN rails	3 (450 mm)	-
	4 (600 mm)	-
	5 (750 mm)	UM51U2
	6 (900 mm)	UM61U2
	7 (1050 mm)	-
	8 (1200 mm)	-

Example:
UM51U2

At the top, the U3 to U4 modules are equipped with a QuickConnect support with 1x KN22E (only UM81U4 with 1x KN26E), and a horizontal partition ZZ10H.

Kit	Height	Width 1 (250 mm)
Multimedia kit with FLF 4-way socket, green/yellow QC, partition and 3 DIN rails	3 (450 mm)	-
	4 (600 mm)	-
	5 (750 mm)	-
	6 (900 mm)	-
	7 (1050 mm)	UM71U3
	8 (1200 mm)	UM81U3

Example:
UM71U3

Kit	Height	Width 1 (250 mm)
Multimedia kit with FLF 4-way socket, green/yellow QC, partition and 4 DIN rails	3 (450 mm)	-
	4 (600 mm)	-
	5 (750 mm)	-
	6 (900 mm)	-
	7 (1050 mm)	UM71U4
	8 (1200 mm)	UM81U4

Example:
UM81U4

UMx1UM3 / UMx1UM4

The UM3 to UM4 modules do not have a socket but are equipped at the top with a QuickConnect support with 2 x KN10N and KN22E. The modules include a green/yellow cable H07V-K 1.5 mm^2 for the equipotential bonding, and a horizontal partition ZZ10H.

Kit	Height	Width 1 (250 mm)
Multimedia kit with green/yellow QC, partition and 3 DIN rails	3 (450 mm)	-
	4 (600 mm)	-
	5 (750 mm)	-
	6 (900 mm)	-
	7 (1050 mm)	UM71UM3
	8 (1200 mm)	UM81UM3

Example:
UM71UM3

Kit	Height	Width 1 (250 mm)
Multimedia kit with green/yellow QC, partition and 4 DIN rails	3 (450 mm)	-
	4 (600 mm)	-
	5 (750 mm)	-
	6 (900 mm)	-
	7 (1050 mm)	UM71UM4
	8 (1200 mm)	UM81UM4

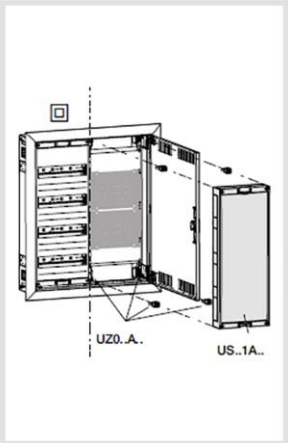
Example:
UM81UM4

Hybrid kits in the lower section without a cover or multimedia kits do not have **a protection class.**

When using multimedia kits (without covers), all devices and wiring must be equipped with protective insulation or double insulation. This is the only way to guarantee protection class II. Only the distributor kit is equipped with double insulation ex-works.

Protection class II can also be obtained by mounting UZ01A2 tower overparts and covers on top.

However, this reduces the construction height for devices between the mounting plate and the cover. This is pointed out in the enclosure's installation manual.



	UN0..FN	UZ03A1	UZ01A2	UZ04A1	UM00M0	UZ..1M..	US31A1	US41A1	US51A1
FWU3....	1x UN03FN	2x	4x	-	2x	1x UZ31M5/M6	1x	-	-
FWU4....	1x UN04FN	2x	4x	-	3x	1x UZ41M5/M6	-	1x	-
FWU5....	1x UN05FN	2x	4x	-	3x	1x UZ51M5/M6	-	-	1x
FWU6....	1x UN06FN	2x	4x	2x	4x	2x UZ31M5/M6	2x	-	-
FWU7....	1x UN07FN	2x	4x	2x	5x	1x UZ31M5/M6 1x UZ41M5/M6	1x	1x	-
FWU8....	1x UN08FN	2x	4x	2x	6x	2x UZ41M5/M6	-	2x	-

Upgrading a multimedia kit to protection class II
when using devices without double insulation and wiring.

6.3 Kits to assemble

Kits can be assembled out of individual parts. The following section lists the corresponding accessories.

6.3.1 UN0xFN vertical uprights

Section	Height	Width 1 (250 mm)
2 mounting rails	3 (450 mm)	UN03FN
	4 (600 mm)	UN04FN
	5 (750 mm)	UN05FN
	6 (900 mm)	UN06FN
	7 (1050 mm)	UN07FN
	8 (1200 mm)	UN08FN

Example:
UN03FN

6.3.2 UZ0xAx tower parts

UZ03A1: Tower underparts left + right

UZ01A2: Tower overpart

UZ04A1: Double tower

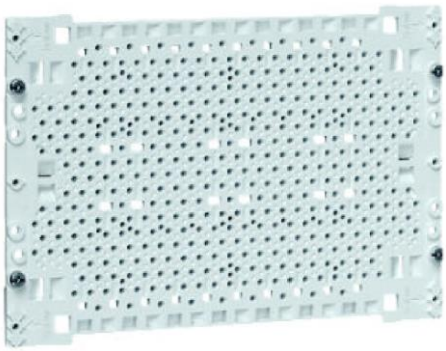
6.3.3 U… DIN rail

U842B: Standard DIN rail

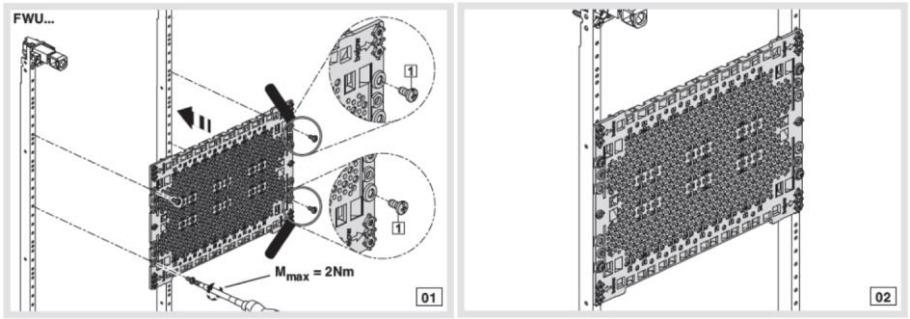
UT22C: Insulated DIN rail, lowered
1 field wide, depth-adjustable up to 21 mm

6.3.4 UM00M0 plastic mounting plate

The new UM00M0 plastic mounting plate is 250 mm wide and 175 mm high. The plate can be screwed onto the vertical uprights from the univers FW range (UZ0xFN) and is built as standard into the new UMx1UK FWU multimedia kits.



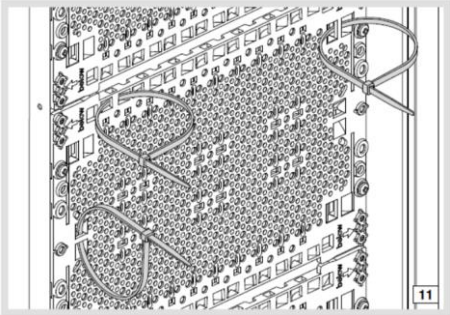
Example: UM00M0



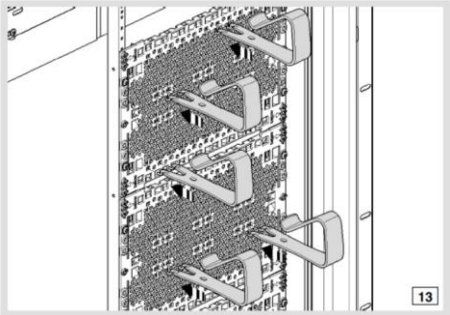
Mounting the UM00M0 plastic mounting plate on the front of vertical uprights

The mounting plate offers various functions:

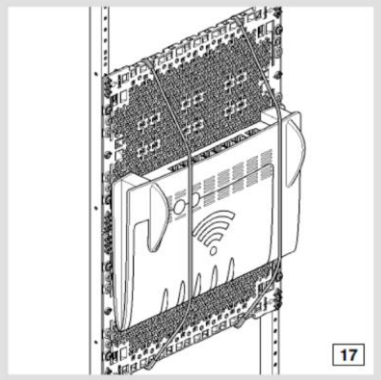
- Mounting of cable ties
- Mounting of univers FZ913 cable clips
- Installation of the VZ02MM modem holder
- Quick fastening of VZ340 rubber bands
- Depth positioning beneath the vertical uprights



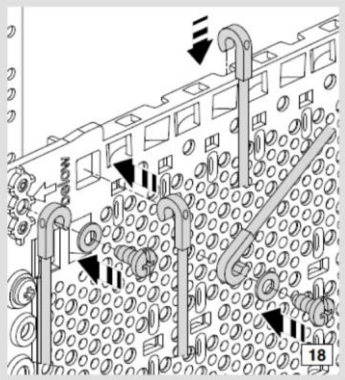
Cable ties mounted on UM00M0 plastic mounting plate



VZ02MM modem holder mounted on UM00M0 plastic mounting plate



VZ340 fixing kit with modem mounted on UM00M0 plastic mounting plate

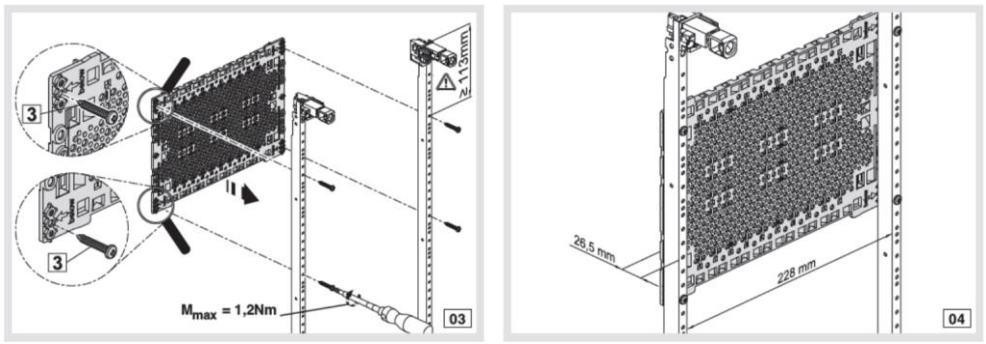


Mounting options for V02MM fixing kit

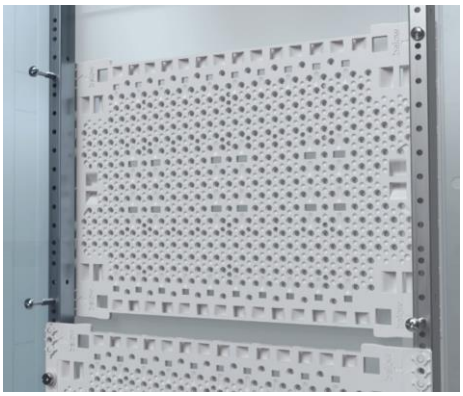
Assembly

The mounting plate is provided with 10 short and 10 long plastic screws and with 4 fastening screws for screwing onto the vertical upright. **The plate can be mounted both on surface-mounted and flush-mounted field distributors, both above and below the panels.**

The mounting plate can be mounted on the front or back of the vertical uprights. The short screws are used to mount it on the front. To mount it on the back, the long screws supplied must be fed through the rail and screwed into the plastic plate. This offsets the rear edge of the mounting plate 26.5 mm behind the vertical upright. The resulting usable width for mounting the devices on the mounting plate is then 228 mm (width between the vertical uprights).

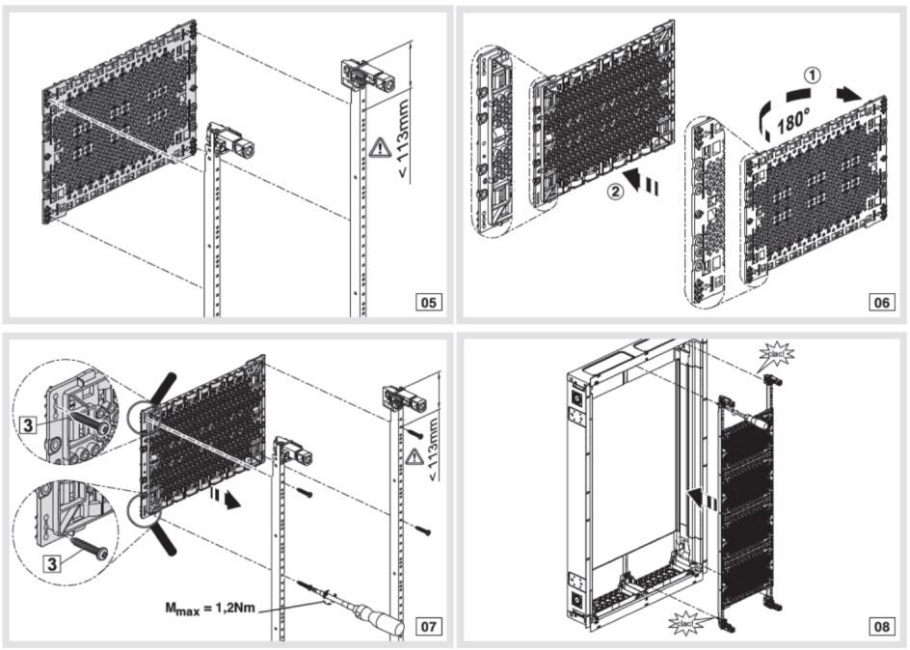


Mounting the UM00M0 plastic mounting plate on the back of vertical uprights



Mounting plate attached to the back of the vertical uprights (top of picture)
and to the front of the vertical uprights (bottom of picture)

If the mounting plate is installed in the head/foot section area (area at < 113 mm from the top/bottom corner of the support frame), the mounting plate must be turned 180° to click the support frame into place.

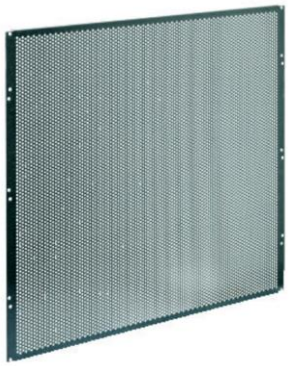


Mounting the plastic plate < 113 mm above the top corner of the support frame: the plate must be turned 180°

Standard univers tapping screws 4.2 x 9.5 mm (e.g. UZ100) can also be screwed into the mounting plate provided that the specified torque (1.2 Nm) is not exceeded.

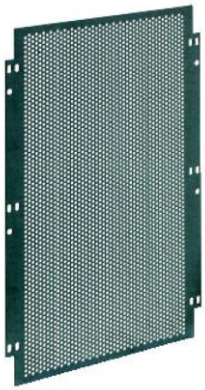
6.3.5 Metal mounting plates UZxxMx

Kit	Height	Width 248 mm	Width 498 mm
Metal mounting plate (rectangular)	310	UZ31M5	UZ32M5
	460	UZ41M5	UZ42M5
	610	UZ51M5	UZ52M5
	760	UZ61M5	UZ62M5



Example: UZ42M5

Kit	Height	Width 248 mm
Metal mounting plate (elongated)	240	UZ21M6
	390	UZ31M6
	570	UZ41M6
	720	UZ51M6
	890	UZ61M6



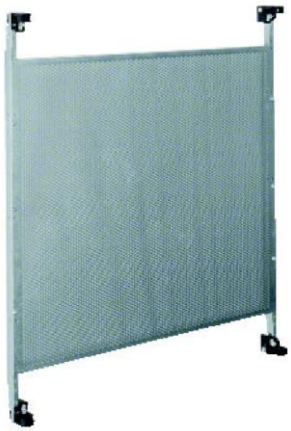
Example: UZ31M6

6.4 Multimedia accessories

The FWU field distributor is equipped to receive the multimedia extension. You can choose between multimedia kits with perforated mounting plates or with new plastic mounting plates.

In the K enclosure versions, multimedia kits are supplied with pre-installed plastic plates.

When delivered as individual parts or to complete an empty enclosure, mounting plates for the kits are also available separately. The UNxxTN plates are perforated and the new UMx1UK plates are plastic.



Example: UN42TN perforated plates

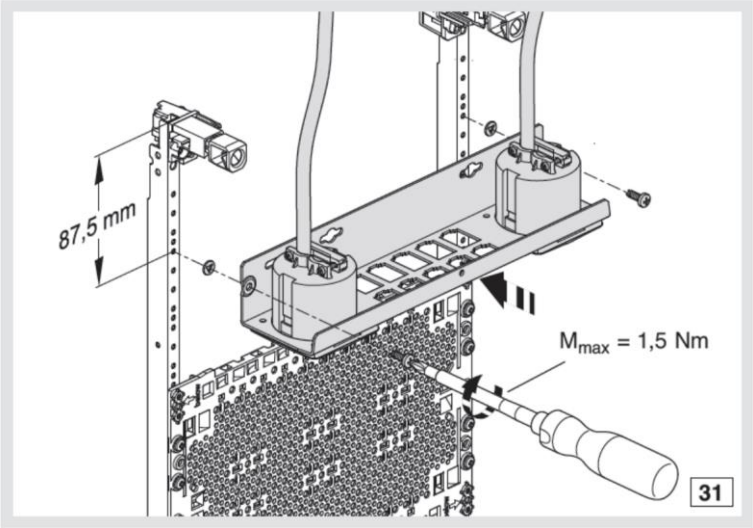
Example: UM41UK plastic plates

In each UMx1UK multimedia kit, empty spaces have been created at the top and bottom for installing new multimedia accessories.

At the top, patch panels and UM00Hx and UM00Kx sockets can be installed, for example, and neatly covered with a cover. At the bottom, Volta VZ00AS and VS00ASF triple sockets can be installed and also covered with a cover.

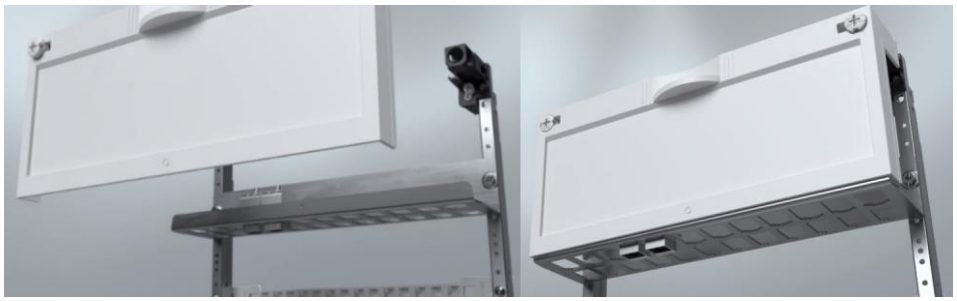
Assembled enclosure, mounted multimedia panels on the right, patch panel (top), triple socket (bottom) and their respective covers

A patch panel can be mounted horizontally at the top on the vertical uprights by screwing the metal support into the bottom hole of the third hole pattern (position 87.5 mm from the top). Patch panel screws are equipped with captive washers for easier installation.



Horizontal installation of patch panel at the top on the vertical uprights

A special cover can be mounted on top. Before doing so, 2 tower overparts (UZ02A1) must be inserted. The cover has 2 claws at the front which engage under the support.

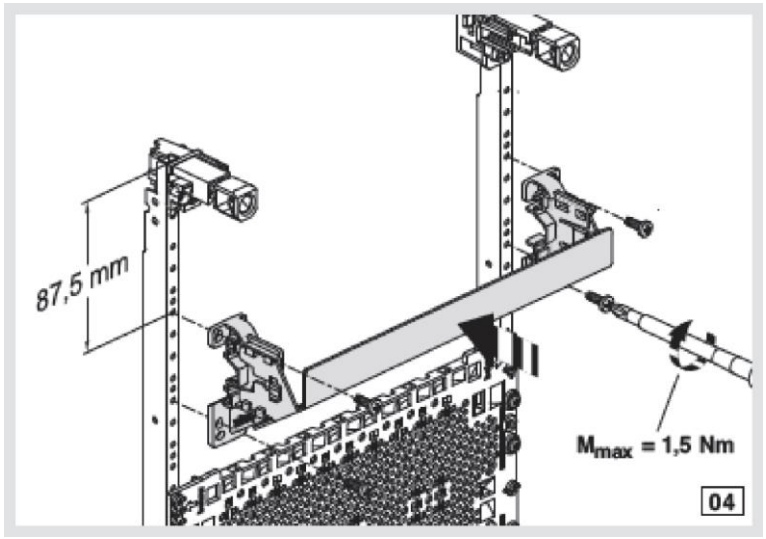


Installing the patch panel cover with 2 tower overparts

The cover can also be screwed onto the plate support with the aid of the visible pre-punch in the central area.

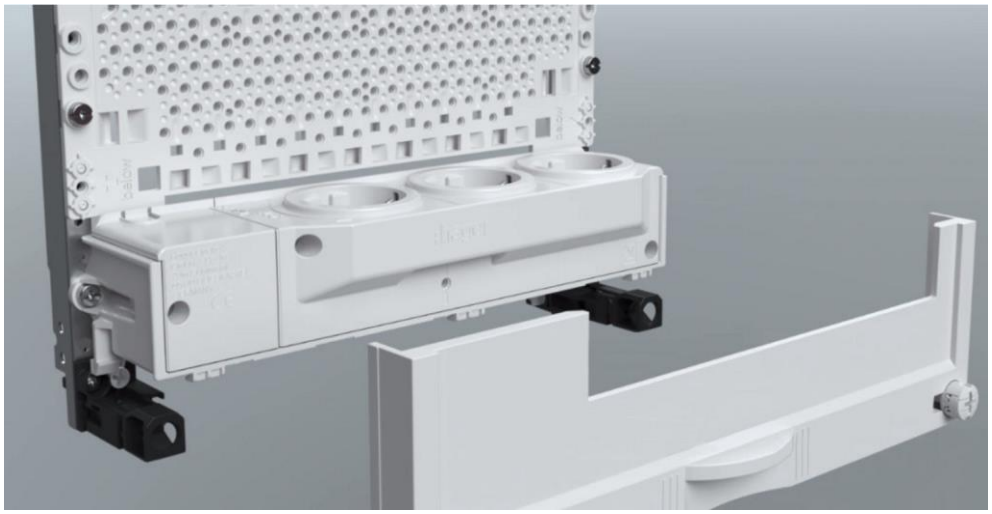
The cover can be ordered with product code UM00S2 or with the UM00S1 set. With both of these items, the tower overparts are already included.

The existing Volta FZ12MM and FZ12MMO patch panel supports can also be neatly covered with the new cover. To do so, the black plastic patch panel holder must be screwed into the 87.5 mm position.



Mounting the cover for the Volta patch panel support

The Volta triple socket can be directly installed in the lower area. It must be screwed in through the elongated holes at the side of the socket housing into the first 3.2 mm diameter hole (at 47.5 mm from the lower edge of the vertical uprights).



Mounted Volta triple socket and cover (not yet mounted)

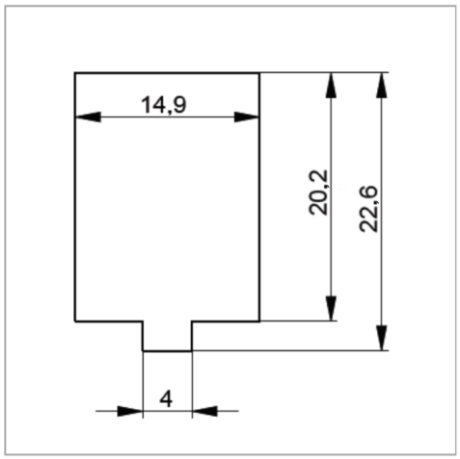
As in the patch panel area, a special cover can also be mounted here. Before doing so, 2 tower overparts (UZ02A1) must be inserted.

The cover can be ordered with product code UM00S3 or with the UM00S1 set. With both of these items, the tower overparts are already included.

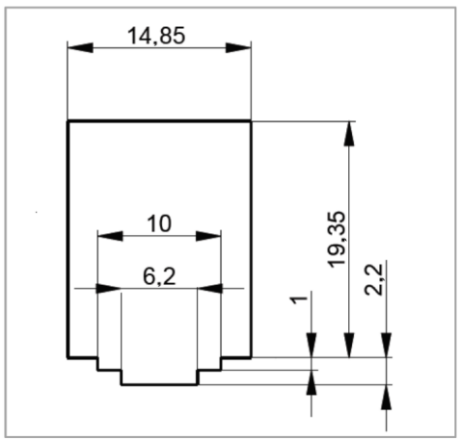
6.4.1 Patch panels without socket holder

In the FWU field distributor, full patch panels with different patch formats can also be mounted.

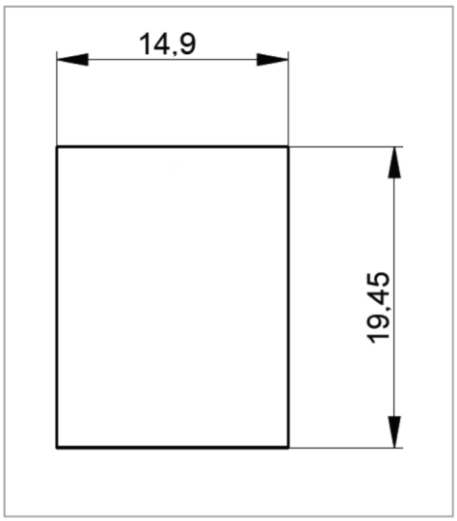
Dimensions of patch panel openings



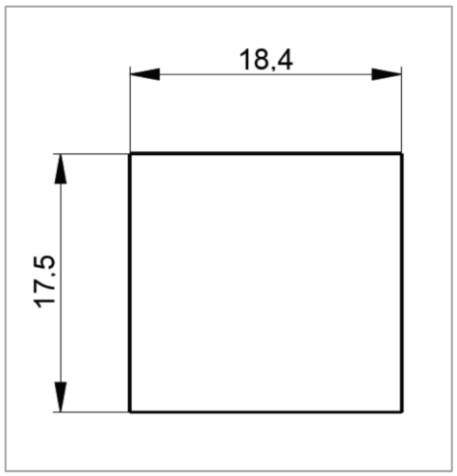
HMS system



E-DAT



Keystone



Lexcom

UM00K4/UM00K5/UM00K6

The UM00K4, UM00K5 and UM00K6 supports comprise between 18 and 24 patch openings in E-DAT, Keystone or Lexcom formats:

- UM00K4 for 24 x E-DAT
- UM00K5 for 24 x E Keystone
- UM00K6 for 18 x Lexcom and 1 x fibreglass

UM00K4

UM00K5

UM00K6

UM00M4/UM00M5/UM00M6

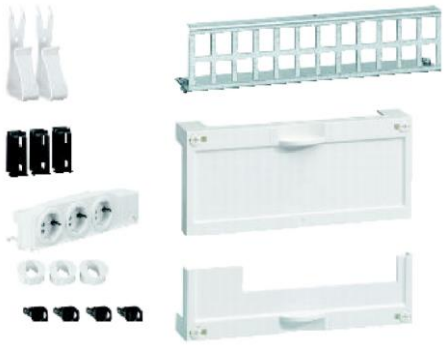
The UM00K4 patch panel is also included in the UM00M4 set. This set contains:

- 2 modem holders (VZ02MM)
- 3 cable clips (FZ913)
- Schuko-type triple socket (VZ00AS)
- Steel patch panel

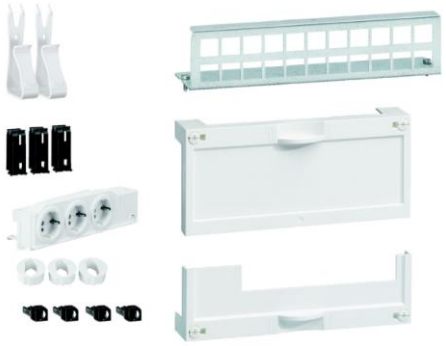
UM00M4

The UM00K5 and UM00K6 supports are included in the UM00M5 and UM00M6 sets. These sets contain:

- 2 modem holders (VZ02MM)
- 3 cable clips (FZ913)
- Schuko-type triple socket (VZ00AS)
- matching covers for the sockets (US00S2) and for the patch panel (US00S3) with tower overparts
- Steel patch panel



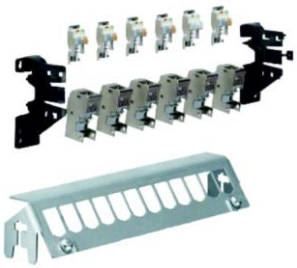
UM00M5



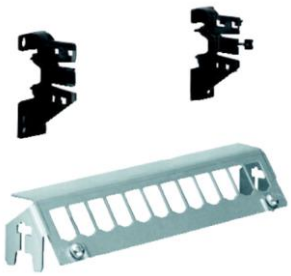
UM00M6

FZ12MM/FZ12MMO/FZ12MK

The Volta FZ12MM patch panels with 12 patch openings in E-DAT or Keystone format are compatible with the field distributor. FZ12MM has 6 E-DAT modules Cat.6A, 10 Gbit/s, Class E. FZ12MMO is suitable for E-DAT and has no E-DAT modules. These can be ordered, for example via product code VZ314RJ. FZ12MK is suitable for Keystone and has no E-DAT modules.



FZ12MM



FZ12MMO

FZ12MK

UM00M1 / UM00M2

The FZ12MM and FZ12MMO patch panels are included in the UM00M1 and UM00M2 sets. These sets contain:

- 2 modem holders (VZ02MM)
- 3 cable clips (FZ913)
- Schuko-type triple socket (VZ00AS)
- Steel patch panel with/without module

UM00M1

UM00M2

All patch panels are compatible with the UM00S2 cover.

6.4.2 Berker Integro Design Flow patch panel and socket holder

UM00K3

A special patch panel and socket combination has been designed for the German market. The UM00K3 holder has 1 opening on the left and right for Berker Integro Design Flow-type components and 10 patch openings in the centre.

UM00K3

In the centre, the UM00K3 patch panel is compatible with E-DAT patch inserts, e.g. with VZ31xxx.

VZ314RJ

VZ318LC

Berker Integro Design Flow-type inserts can be screwed onto the left and right. 8 screws are enclosed with the patch panel UM00K3 for the purpose. Berker Integro Design Flow-type inserts are available via Berker product codes 9... or as part of an expansion kit for Volta Hybrid VZ00HB and VZ00HD.

VZ00HB

VZ00HD

945602502

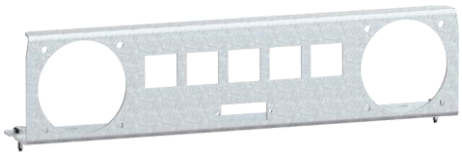
UM00M3

The UM00K3 patch panel is also included in the UM00M3 set. In addition to the patch panel, this set contains 2 modem holders (VZ02MM) and 3 cable clips (FZ913).

UM00M3

UM00K7

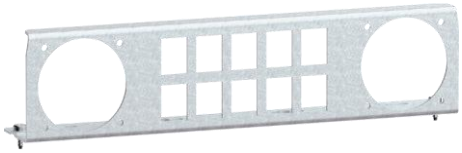
The UM00K7 patch is similar to UM00K3 but in the centre, it has 5 openings for Lexcom patch inserts and 1 opening for a fibreglass plug.



UM00K7

UM00K8

The UM00K8 patch is similar to UM00K3 but in the centre, it has 10 openings for Keystone patch inserts.



UM00K8

6.4.3 Patch panel and FLF socket holder

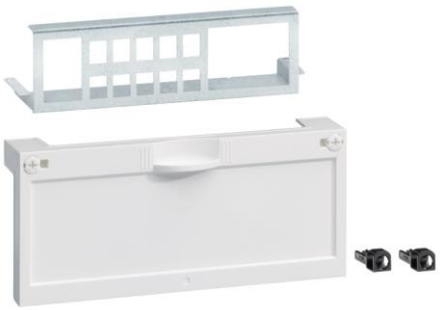
Combined patch panel and socket holders have been developed for Switzerland. The UM00H1, UM00H2 and the UM00K1 and UM00K2 holders have 1 opening each on the left and right for FLF type 13 components and 10 or 14 patch openings in the centre.

UM00H1

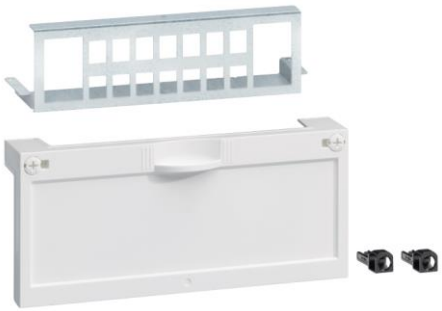
UM00H2

In the centre, the UM00H1 and H2 patch openings are compatible with HMS patch inserts WH7…
HMS stands for Hager Multimedia System.

WH70300200Z



UM00K1



UM00K2

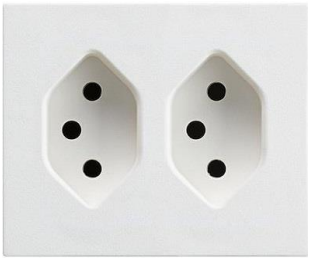
In the centre, the UM00K1 and K2 patch openings are compatible with Keystone patch inserts.

On the left and right, FLF modules, type 13, size I and/or size II can be inserted.
These modules are known as “Fertigapparate” in Switzerland.

WH37580300D

WH66549000D

WH37641300D

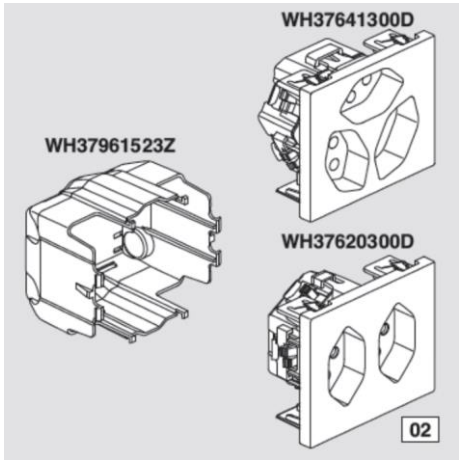


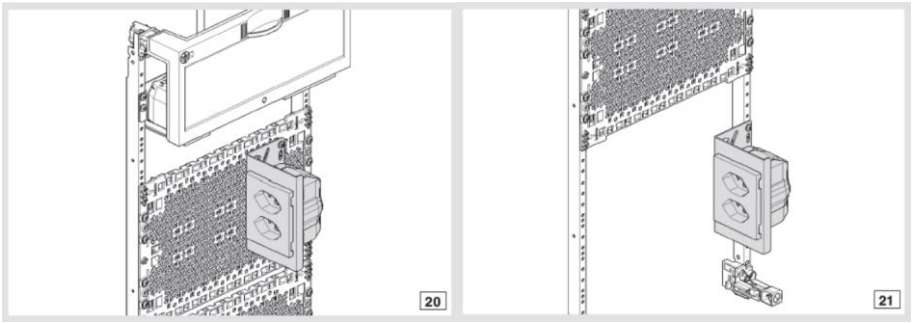
WH37620300D

6.4.4 UM00H0 FLF socket holder

The UM00H0 socket holder is compatible with the Swiss FLF socket system, type 13. Hager FLF double or triple sockets WH37… can be clicked into the metal plate opening. The holders can be directly screwed vertically onto vertical uprights or mounting plates.

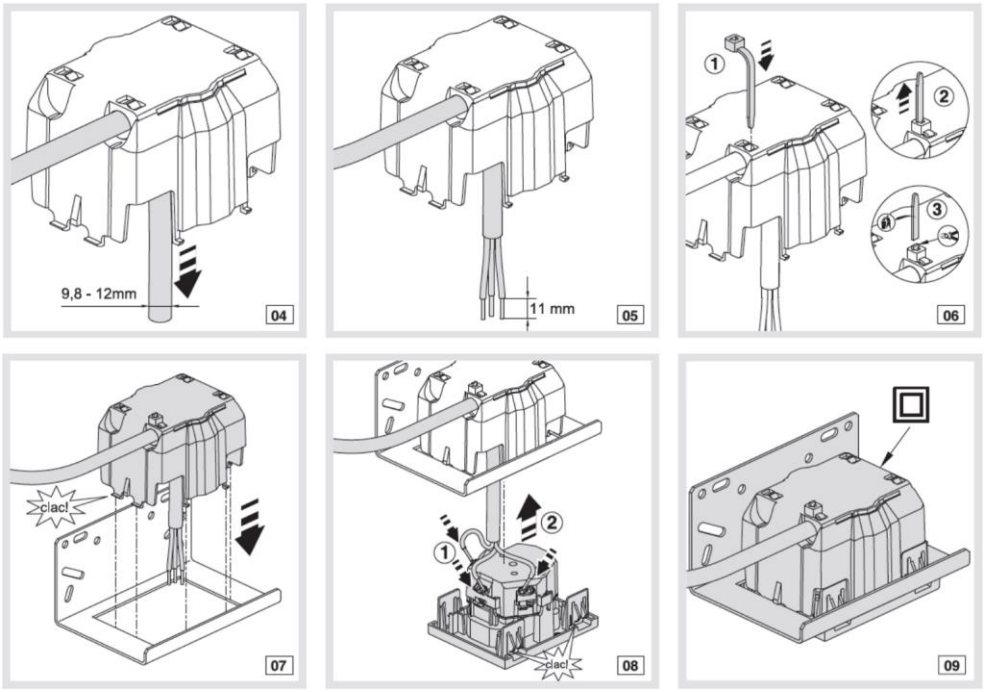
UM00H0





Top: snap-in sockets and cover
Bottom: Mounting the UM00H0 socket holder

FLF sockets must be covered with the WH37961523Z cover to guarantee protection class II.



Mounting the WH37961523Z cover for FLF sockets
to guarantee protection class II.

6.4.5 VZ00APZ set with socket and holder

The VZ00APZ set can be screwed into the FWU enclosure on a vertical upright or mounting plate. It consists of:

- 1 steel support with screws
- Berker Schuko socket with cover

VZ00APZ

6.4.6 Volta VZ00AS/VZ00ASF multi-socket

Triple sockets from the Volta product range are compatible with the FWU field distributor.

Schuko-type (VZ00AS) or French (VZ00ASF) inserts can be turned 180°. In the multimedia panel, the multi-sockets can be installed beneath the mounting plate and covered with cover US00S3.

VZ00AS

VZ00ASF

6.4.7 US00Sx multimedia covers

Two special univers covers have been developed to cover the patch panel and the Volta triple socket:

- US00S1 includes both covers as a set with tower overparts.
- US00S2 includes the patch panel cover only with tower overparts.
- US00S3 includes the socket cover only with tower overparts.

UM00S1

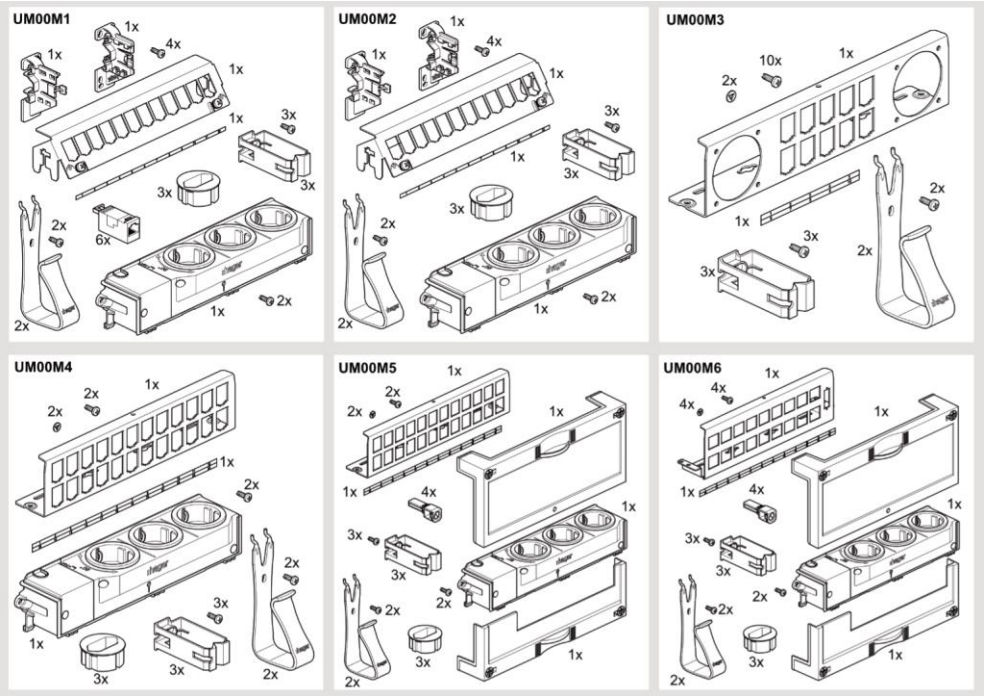
UM00S2

UM00S3

FWU42K with mounted covers for patch panel and socket insert

6.4.8 UM00Mx multimedia set

Various UM00Mx multimedia sets have been developed for the main markets of the field distributor. They contain patch panels, covers, tower overparts and other multimedia accessories, and can be ordered with just one product code:



Overview of UM00Mx multimedia set

UM00M1 contains patch panel VZ12MM.
UM00M2 contains patch panel VZ12MMO.
UM00M3 contains patch panel UM00K3.
UM00M4 contains patch panel UM00K4.
UM00M5 contains patch panel UM00K5.
UM00M6 contains patch panel UM00K6.

7 Accessories for interior fittings

7.1 Coding

The order number code for new accessories for the univers FW series contains:

- the enclosure type: **FWU**…
- the number 00 (accessory): FWU**00**...
- the accessory designation: FWU00**V**3
- and if applicable, information about the housing dimensions (height or width): FWU00V**3**

Accessories	Designation
FWU00C3	Internal side cover for FWU height 3
FWU00C4	Internal side cover for FWU height 4
FWU00C5	Internal side cover for FWU height 5
FWU00C6	Internal side cover for FWU height 6
FWU00C7	Internal side cover for FWU height 7
FWU00C8	Internal side cover for FWU height 8
FWU00F1	univers FW connection set
FWU00P1	Slider, FWU flush-mounted field distributor
FWU00V3	Vertical partition for FWU height 3
FWU00V4	Vertical partition for FWU height 4
FWU00V5	Vertical partition for FWU height 5
FWU00V6	Vertical partition for FWU height 6
FWU00V7	Vertical partition for FWU height 7

In the univers system, additional accessories are compatible with the FWU enclosure. The corresponding product codes begin with:

FZ…	DIN rails, door accessories, etc.
U…, UT…	DIN rails, partitions, etc.
US…	covers, etc.
UN…, UM…	kits, vertical uprights, multimedia accessories, etc.
UW…	kits, supporting structures, etc.
UZ…, ZZ…	towers, mounting plates, screws, etc.

Accessories from other product ranges can also be integrated in the new FWU enclosure. The corresponding product codes begin with:

FD00…	New VegaD
VZ…	Volta, Vector
M72…, LFH60…	LFH cable duct
WH37…	FLF socket, type 13 (Switzerland)
926002509 + …	Berker Integro Design Flow sockets and inserts

7.2 General accessories in detail

7.2.1 Hollow wall anchor VZ405N

For hollow wall applications, the enclosure can be quickly attached using the VZ405N fastening set (as used with Volta and New VegaD). The enclosure body is pre-equipped for mounting the hollow wall anchor. The installation is similar to the installation with Volta or New VegaD.

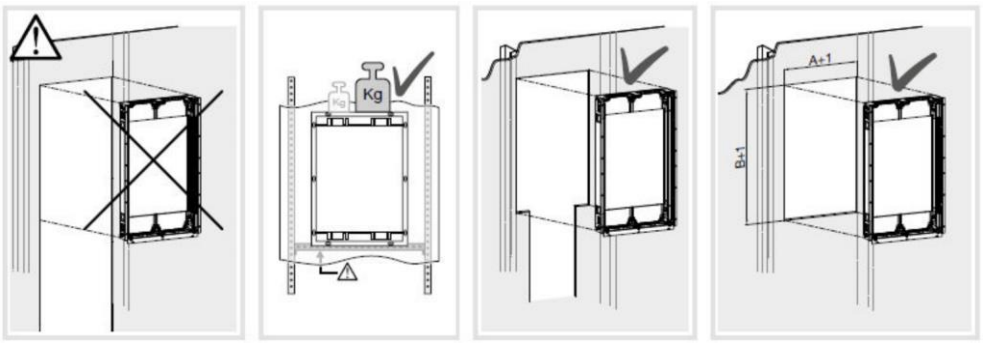
Suitable wall thickness: 6–26 mm

Hollow wall anchor VZ405N

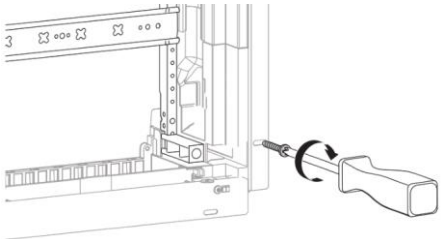
Bracing the enclosure weight with supports

As the hollow wall anchors only engage into the wall laterally, part of the enclosure's weight must be supported from below.

- Support the base of the enclosure to take up the weight of the wired enclosure.
- If the enclosure is very heavy, Hager recommends mounting a transverse batten beneath it. To do so, see also installation manual 6LE005468A supplied with the enclosure.

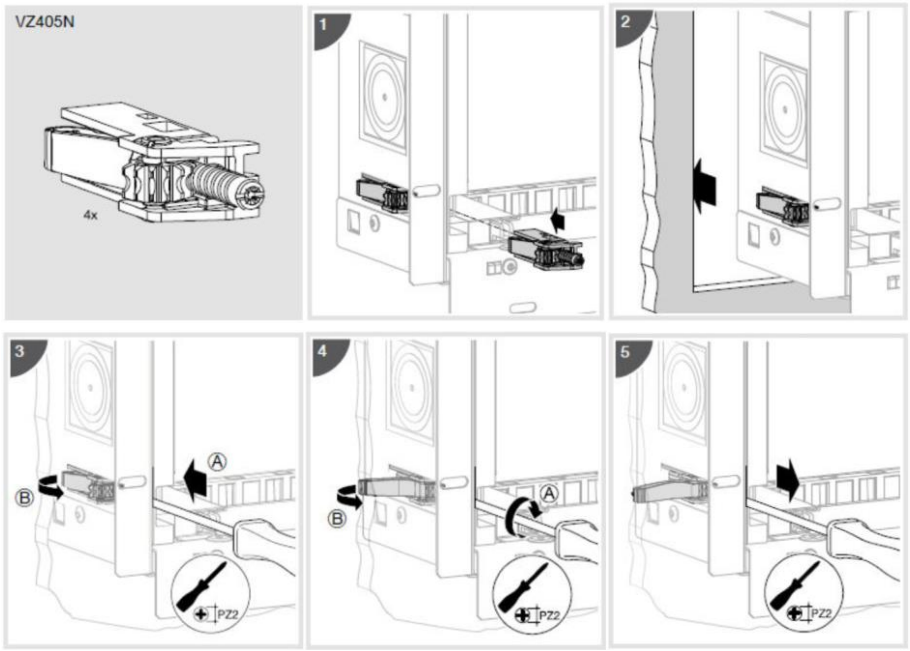


For a hollow wall installation, support the weight of the enclosure from below. If the enclosure is very heavy, mount a transverse batten beneath the enclosure to support it.



You can also secure the wall cabinet initially by screwing it through the elongated holes on the side walls of the body.

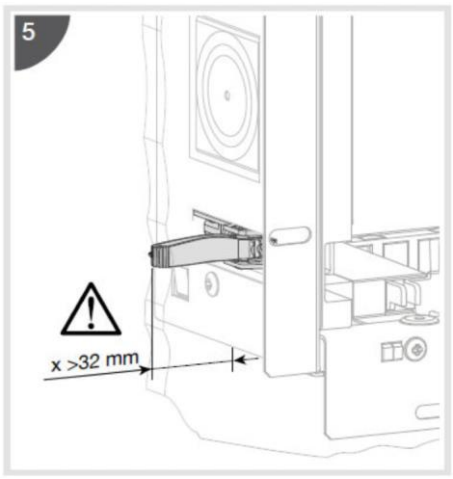
Mounting hollow wall anchors



Mounting the VZ405N hollow wall anchor in wall cabinets

Keeping space free around the sides in the wall cavity

To mount the VZ405N hollow wall anchor, a minimum distance of 32 mm must be kept free around the sides so that the hollow wall anchor can be flipped forward unhampered.

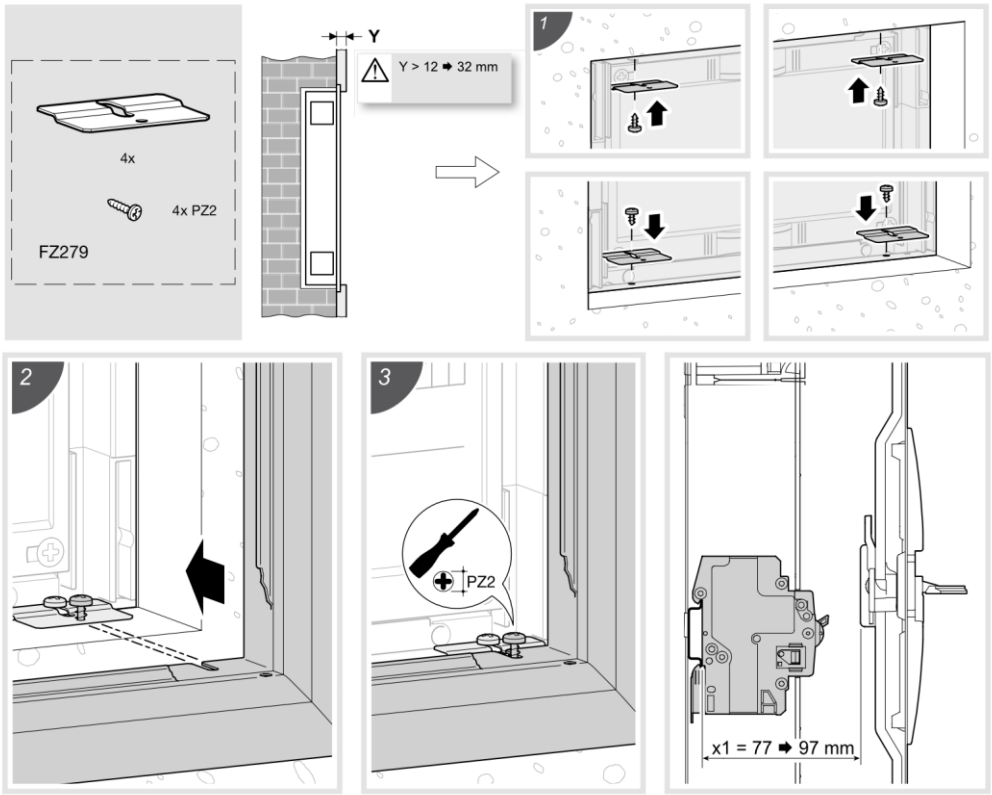


Keep a space of at least 32 mm around the sides so that the hollow wall anchor can be flipped forward

7.2.2 Frame plaster compensation: Depth adjustment set FZ279

The standard depth adjustment in the wall cabinet is up to 12 mm over the elongated holes in the frame. With the depth adjustment set FZ279, the frame can be moved up to 32 mm forward, increasing the distance between the device and the door or the door sash lock by up to 20 mm.

FZ279



Mounting depth adjustment set FZ279: up to 20 mm more distance between the device and the door

7.2.3 Flange VZ741 for rear cable entry

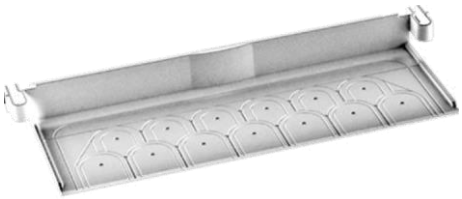
The rear cable entry can be closed using the dust-tight flange VZ741. To do so, the rear cable entry in the plastic head/foot section must be fully cut out (before installing the enclosure in the wall).

Cable entry flange VZ741, IP41

Dust-tight flange VZ741 mounted on the rear of the enclosure

7.2.4 Cable entry slider FWU00P1

The top/bottom cable entry plate can be ordered as a replacement part via product code FWU00P1.



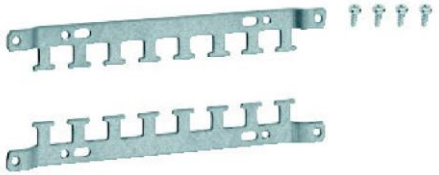
Cable entry slider FWU00P1,
with round pre-punches for cable conduit

This cable entry plate (also known as a slider), is clicked into place laterally in the head/foot section of the wall cabinet. After removing the slider, thick conduits can be inserted into the wall cabinet from the front. The slider also makes it easier to align the wall cabinet in a hollow wall above existing cables and conduits.

7.2.5 Cable strain relief FZ850F

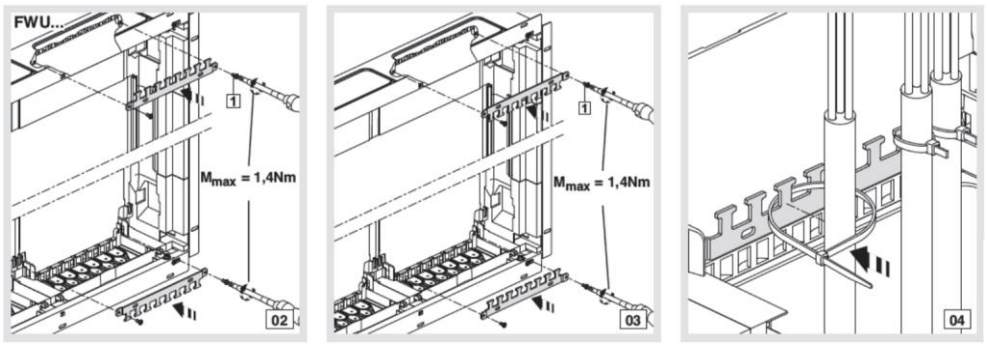
At the top and bottom, the FWU enclosure contains a built-in cable strain relief mechanism for attaching conduits and cables using cable ties.

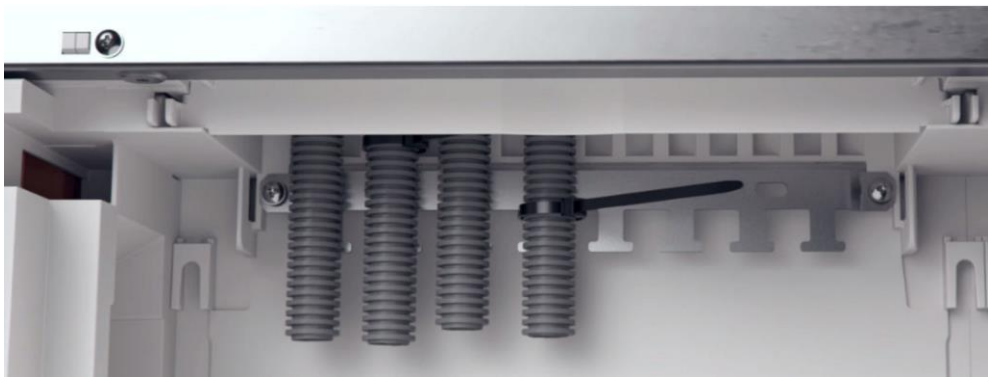
As another option for attaching cables/increasing strain relief, you can also mount FZ850 cable strain relief bars. One set contains 2 rails for FWU and 4 screws.



Accessory set FZ850F with 2 cable catch rails and 4 screws

The metal bars, made of galvanised steel, have been specially developed as accessories for the FWU enclosure. They comprise 8 claws to take cable ties, ensuring that conduits can be attached even more securely. The metal bar is screwed laterally into the plastic head/foot section in the enclosure. 2 screw holes have been provided for the purpose.

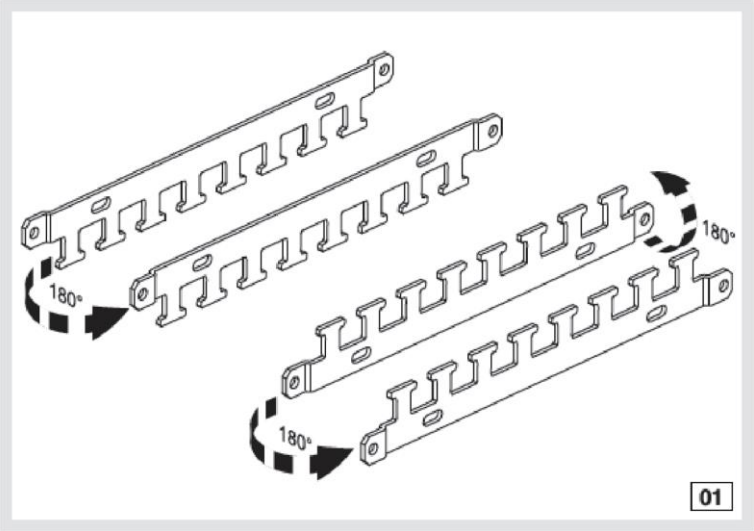




Attaching conduits and cables to the mounted FZ850F metal bar

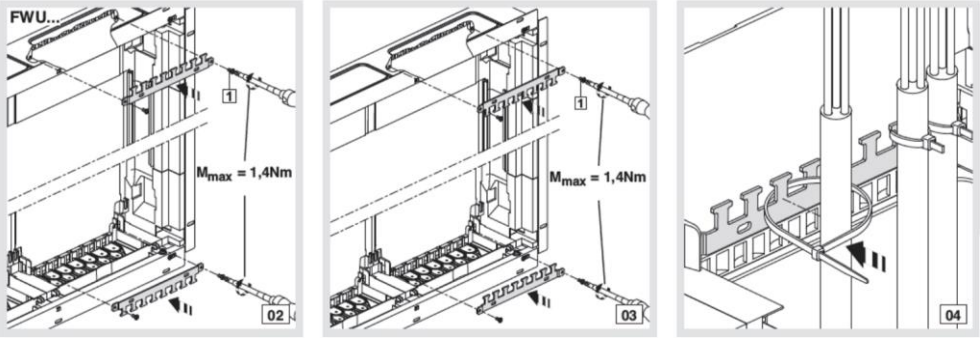
Mounting cable strain relief bar FZ850F

The bars can be turned 180° upwards or to the side.



Options for turning cable strain relief bar FZ850F

The screws must be fastened with a max. torque of 1.4 Nm.



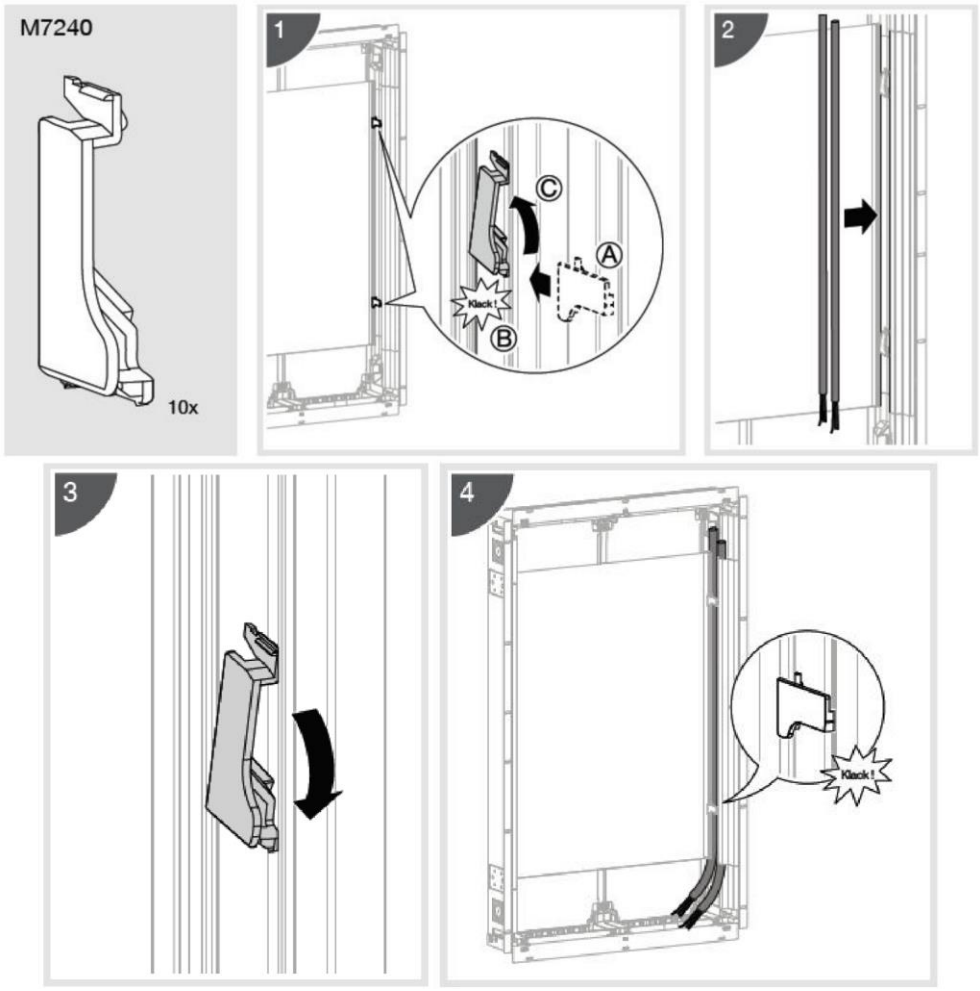
Mounting the FZ850F cable strain relief bar

7.2.6 Cable clips M7240 for lateral cable duct

4 cable clips are supplied with every FWU enclosure for attaching cables in the side cable duct (see section 4.2.1).

If more than 4 parts are required, accessory set M7240 with 10 parts can be ordered separately.

Assembly



Mounting the cable clips from accessory set M7240

Important note: The cable clips in accessory set M7240 are grey. They look very similar to the black clips from the Tehalit LFH cable entry system 60 mm (M7239). However, these black LFH clips cannot be installed – alignment (“C” in figure 1) is not possible as the plastic guide in the side part can break when trying to align the cabinet (figure 3).

7.2.7 Cable cover FWU00Cx for lateral cable duct

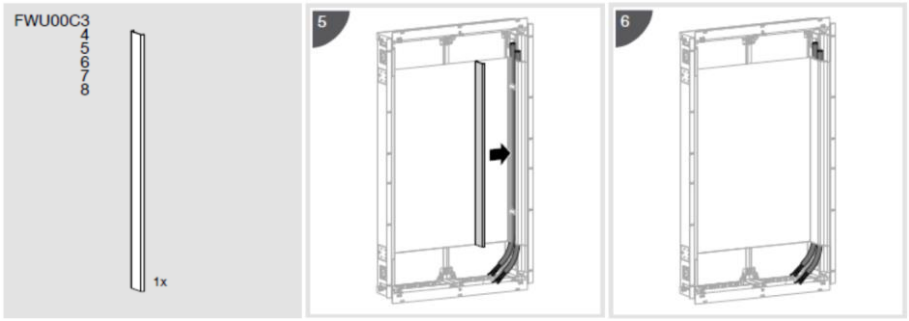
With multimedia enclosures (FWUxxK…), a cable duct cover is mounted at the side next to the multimedia panel. For other enclosures, the cover can be ordered as an accessory via product code FWU00Cx.

The halogen-free cover can also be clipped into place over the clips (similarly to the Tehalit LFH cable trunking system).

Enclosure height	Product code	Length (mm)
3 (500 mm)	FWU00C3	218
4 (650 mm)	FWU00C4	368
5 (800 mm)	FWU00C5	518
6 (950 mm)	FWU00C6	668
7 (1100 mm)	FWU00C7	818
8 (1250 mm)	FWU00C8	968

It is also possible to use the 2 m-long Tehalit LFH cover (width: 60 mm, product code LFH6029010). This must first be shortened to the required length.

Assembly



Mounting the FWU00Cx cable duct cover

7.2.8 Partitions

The univers FW kits can be partitioned vertically and horizontally.

Enclosure with mounted partitions

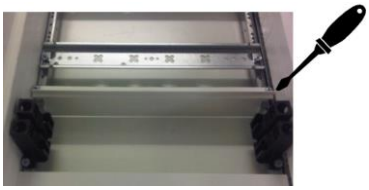
Horizontal partition

A horizontal partition inside a 250 mm-wide field (separation) can be made using the parts UT44EN or ZZ10H.

UT44EN: Screwing onto the vertical uprights

This 250 mm-wide partition is screwed directly onto the vertical uprights.

Horizontal partition UT44EN



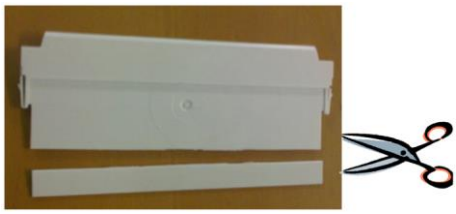
UT44EN installation

Screwing directly onto the vertical uprights

ZZ10H: Clicking into double towers UZ04A1

This 250 mm-wide partition is clicked into the double towers UZ04A1. This partition is also an accessory of the FWB surface-mounted field distributor. For installation in the flush-mounted FWU field distributor, the part must be cut off at the bottom.

Horizontal partition ZZ10H



Preparing ZZ10H for installation
in the FWU flush-mounted field distributor

Prior to installation, the bottom part of the partition must be cut off as shown in the illustration on the left.

ZZ10H installation

Clicking into UZ04A1 double towers

Vertical partition FWU00Vx

Two kits next to one another can also be separated vertically. The new FWU00Vx partitions have been designed for the purpose. They replace FW partitions UT44AN, BN, CN, DN and FN.

Vertical partition FWU00V4

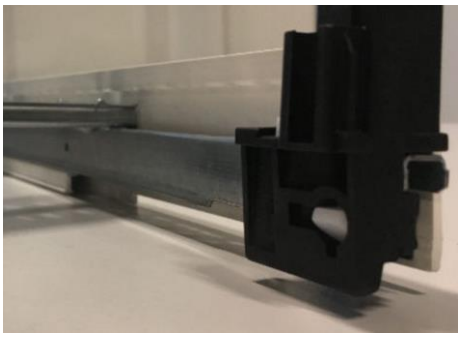
Enclosure height	Product code	Length (mm)
3 (500 mm)	FWU00V3	448
4 (650 mm)	FWU00V4	598
5 (800 mm)	FWU00V5	748
6 (950 mm)	FWU00V6	898
7 (1100 mm)	FWU00V7	1048

The new partitions no longer need to be screwed onto the vertical uprights. They are simply clicked in at the side beneath the vertical upright.

The FWU00Vx partitions have interesting features:

- Cut-outs in the centre for installing double tower UZ04A1

- Top/bottom pre-punches for cable entry



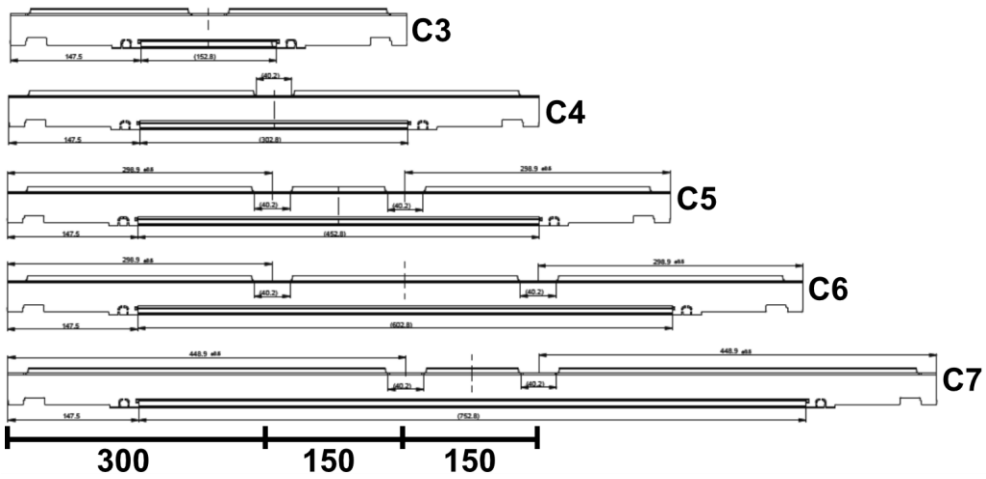
- Small cable ducting system (8 x 8 mm) below the vertical upright

The FWUU00Vx vertical partition is also compatible with the new vertical KCL… busbar, enabling devices with up to 3 rows to be quickly and compactly connected together at intervals of 125 mm.

Partition FWU00Vx also compatible with the vertical KCL… busbar system

Mounting instructions: Positions for installing double towers

The positions for installing double towers are shown in the following illustration using a grid of 150 mm:



Positions for installing double towers

7.2.9 Screw set ZZ44SF for vertical upright fixing

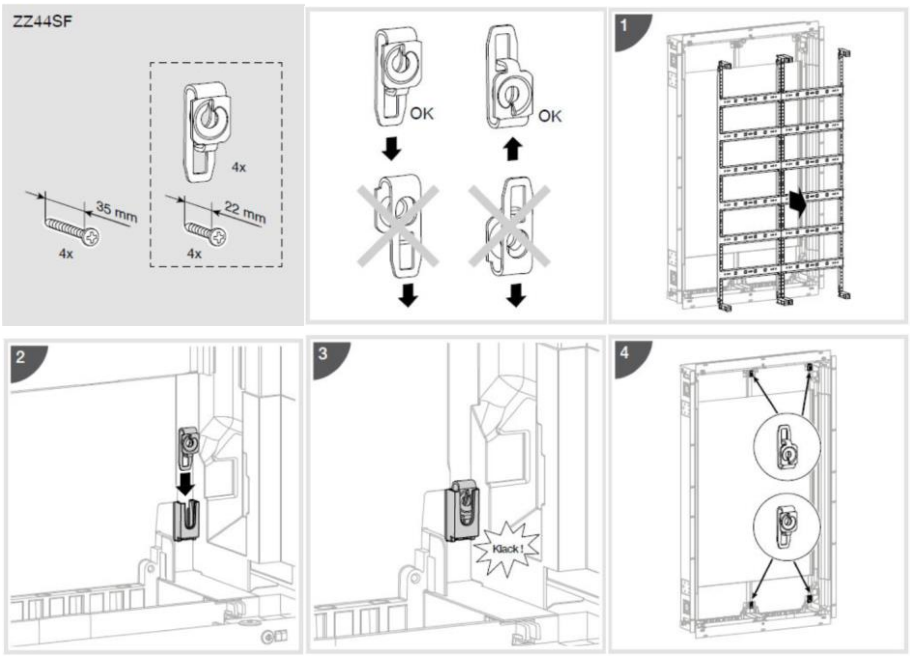
If required, kits can be screwed on using the ZZ44SF accessory set.

One set contains 4 screws for FWB, 4 screws for FWU and 4 counternuts.

For the FWU installation, 4 counternuts are first pushed into the duct provided in the plastic head/foot section. Then, the 22 mm-long screws are inserted through the tracks and screwed in place.

The 35 mm-long screws in the accessory set are used in FWB, FP or meter board applications.

Assembly



Mounting the ZZ44SF screw set to fix the vertical upright

8 Inspection and maintenance

Important for safe operation

- Regular preventative maintenance is important for the safe operation of switchgear and controlgear assemblies.

Checks and maintenance only by electrically skilled person with appropriate testing experience

- Tests and maintenance must be carried out by electrically skilled persons who have experience in testing switchgear and controlgear assemblies.

8.1 Testing intervals for recurring tests

In the interest of ensuring a high level of operational safety, the commercial switchgear and controlgear assembly should be tested at least every 4 years by an electrically skilled person to check that it is in perfect working order (recommendation of the German Social Accident Insurance regulation 3 (DGUV) (formerly BGV A3)). National or insurer regulations may extend or shorten the test interval. Shortened intervals may be defined to ensure proper functionality and safe operation due to:

- the demands on the operating equipment,
- external influences,
- changes to the operating parameters and ambient conditions,
- special kinds of compartments and systems according to DIN VDE 100 group 700,
- in the event of complicated operating conditions, special circumstances, such as shocks and exposure to moisture,
- the specifications of the device or operating equipment manufacturer set forth in their instructions,
- according to applicable national standards and regulations.

Hager recommends performing a test at least once a year:

- a visual inspection (external inspection),
- switching operations of individual protective devices and switching devices (operation of RCD test buttons every six months),
- document all tests, for example, in an inspection book.

Recommended recurring tests

System / operating equipment	Test interval	Type of test	Inspector
Electrical systems and stationary operating equipment	4 years	For perfect working order	Electrically skilled person (with testing experience)
Electrical systems and stationary operating equipment in operating sites, special kinds of spaces and systems according to DIN VDE 100 group 700	1 year	For perfect working order	Electrically skilled person (with testing experience)

System / operating equipment	Test interval	Type of test	Inspector
Enclosure, jacketing and protective devices	1 year Recommendation	External visual inspection Switching operation / functional testing	Electrically skilled person (with testing experience)
RCD (earth-leakage circuit breaker)	Every six months	Operate test switch	Ordinary person

8.2 Minimum inspection/maintenance measures

The minimum maintenance conditions for switchgear and controlgear assemblies with FWU distribution enclosures are listed below (compliance based on VDE 0100, part 610 for switchgear assemblies):

The recurring tests during commissioning, in the event of changes, after faults or at suitable intervals include:

- Inspections
- Measurements
- Testing
- Documenting test results
- Eliminating the identified defects, for example, by replacing the faulty operating equipment or devices
- Documenting the performed work and changes.

Tests through inspection

In the inspection, the electrically skilled person checks the electrical switchgear for perfect working order, including its operating equipment and devices. The inspection includes both the equipment exterior/environment and the internal fittings.

- Check the protection against the direct and indirect contact of active parts.
- Check the basic protection and the basic insulation.
- Check the additional insulation for fault protection.
- Check all necessary covers for personal protection.
- Check for signs of ageing.
- Check for mechanical, chemical, electrical and thermal stress.

External inspections, tests	Test values, comments, remedy
Test the ambient conditions	- Effectiveness of the ventilation system and heating of operating space - Room temperature, relative humidity, aggressive air components, dust
Accessibility, minimum distances	Escape routes, clearances
Visual inspection of covers and jacketings	Damage that adversely affect the type of protection, such as: - Missing parts - Locking of doors - Paintwork damage

Inspections	Remarks
Condition of jacketing, attachment, cover	If necessary, improve or replace housing parts, clean soiling, and fix the fastenings, observing the installation manuals in doing so
Check for corrosion traces	- Repair damage with a suitable FZ791N touch-up stick. For more significant damage, grind, clean (e.g. with white spirit, spot-removing spirit or universal thinner) and then paint - Check the operating conditions and ambient conditions
Ventilation/traces of a rise in temperature	Ensure clearance in front of ventilation inserts, take suitable measures
Hinge pin lock	Lock, replace missing hinge pins
Check that the door hinges can be moved easily	If necessary, spray anhydrous lubricant that protects against corrosion
If necessary, check that the lock and locking parts can be moved easily	Spray dry lubricant on moving locking parts and replace seals if necessary
Seals, flange, contact hazard protection covers	Replace if damaged
Check according to protection class and protection type	Protection class II on multimedia and hybrid panels: check the use of double-insulated devices and wiring or the use of a suitable cover on individual towers UZ01A2 on multimedia devices, insulation on active protective conductors
type label/marking of the switchgear and controlgear assembly for legibility	If necessary, clean and ensure legibility
Documentation for completeness/legibility	Ensure completeness and legibility

8.3 Cleaning

For operational safety reasons, soiling must be removed. Dirt deposits can cause overheating. During cleaning, observe at least the following safety points:

External cleaning (outside of door and frame)

External cleaning (when door is not open) by ordinary persons is permitted on distribution boards that may be operated by ordinary persons (DBO) according to EN 61439-3.

- Clean the outside of the door and frame with a dry, lint-free cloth
- Do not use scouring agents.
- Do not use liquids, do not carry out wet cleaning.

The inside may only be cleaned by electrically skilled persons

- Cleaning inside the switchgear and controlgear assembly may only be carried out by electrically skilled persons after the system has been disconnected from the power supply
- Cleaning must only be performed by vacuuming (vacuum cleaner) and with dry cloths (dry cleaning with a vacuum cleaner). During cleaning work, an electrostatic charge in the jet nozzle may result in direct or indirect hazards to personnel.
- Do not use compressed air for cleaning.
- No wet cleaning.
- Remove all dirt.
- Hager offers a cleaning agent for plastic surfaces under order number VZ404.

9 Decommissioning, disassembly and disposal

Decommissioning

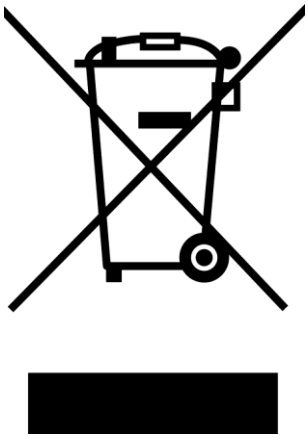
Decommissioning only by electrically skilled persons

- Switch off the system
- Observe the residual energies, residual voltages and residual heat
- Disconnect the system and supply lines from all poles and on all sides
- Secure against reconnection
- Ensure that no voltage is present
- Disconnect the supply line / incoming unit
- Securely lock the system
- Attach a sign indicating decommissioning

Disassembly and disposal

Disassembly only by electrically skilled persons

- Check the disconnection and absence of voltage
- Disassemble the system in reverse order of the assembly and installation procedure.

	Devices marked with this symbol are subject to European directive 2012/19/EU for WEEE (Waste Electrical and Electronic Equipment). Electrical and electronic equipment may not be disposed of in domestic waste. Dispose of them according to the local applicable regulations. Separate the available raw materials of the system by disposal type and material: Parts containing copper, such as busbars and lines Electrical scrap: Terminals, short circuit devices Metal scrap: Jacketing, mounting plates

10 List of all product codes

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FWU00C4	100
FWU00C5	100
FWU00C6	100
FWU00C7	100
FWU00C8	100
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11 Glossary

Degree of pollution

The degree of pollution defines the ambient conditions of a switching device. If the switching device is installed in an enclosure, the ambient conditions within the enclosure apply. The degree of pollution according to EN 61439 refers to the ambient conditions that are intended for the switchgear and controlgear assembly.

The four defined degrees of pollution are used to assess the clearances and creepage distances in the microenvironment. The degree of pollution 3 is defined as conductive pollution or dry, non-conductive pollution, which is expected to become conductive due to condensation. The degree of pollution 2 is defined only as non-conductive pollution in which, however, temporary conductivity can be expected due to condensation.

Distribution boards for operation by ordinary people (DBO) according to EN 61439-3

DBO. According to EN 61439-3, a DBO is a distribution boards for operating by ordinary persons (Distribution Board intended to be operated by ordinary persons). This is a switchgear and controlgear assembly for distributing electrical energy for applications in residential areas and other locations where operation is intended by ordinary persons.

The distribution boards are manufactured and tested for operation by ordinary persons (DBO) according to EN 61439 Part 1 and Part 3. Part 3 of the standard 61439 defines the specific requirements for distribution boards for operation by ordinary persons (DBO).

A switchgear and controlgear assembly that allows operation by ordinary persons must include a type plate that specifies the standard EN 61439-3 (VDE 0660-600-3) as the applied standard.

Characteristic features of such a switchgear and controlgear assembly:

❶ They are intended for operation by ordinary persons, including switching operations and changing fuse inserts. They are applications in residential areas or similar household applications in a functional building.

❷ The outgoing circuits contain short circuit devices that are intended for operation by ordinary persons. Additional information is provided in section 8 of EN 61439-3.

❸ The rated voltage against earth is maximum 300 V alternating current.

❹ The rated current (I_{nc}) of the outgoing circuit is maximum 125 A; the rated current of the switchgear and controlgear assembly (I_{nA}) is maximum 250 A. The FWU field distributor is designed for a maximum supply current of 125 A (rated current I_{nA} max. 125 A).

❺ The switchgear and controlgear assembly is intended for distributing electrical energy and may also include the appropriate controlling and signalling devices.

❻ The switchgear and controlgear assembly is closed and fixed.

❼ The switchgear and controlgear assembly may be intended for indoor or outdoor installation (for the FWU field distributor: indoor installation). The protection type of a DBO for indoor installation must be at least IP2XC. The IK code against mechanical influence must correspond to at least IK05 for indoor installation. At least the degree of pollution 2 applies.

Additional information is provided in EN 61439 Part 1 as well as Part 3.

EN 61439 / IEC 61439 / VDE 0660-600

The EN 61439 standard series replaced the EN 60439 standard series. The EN 61439 standard series has the goal of harmonising the rules and requirements for low-voltage switching equipment combinations.

The valid part of the EN 61439 standard series is always the applicable part of the standard, e.g. EN 61439-6 for busbar trunking systems (busways) together with Part 1 of the standard (EN 61439-1).

Connection between European standard and International standard

European standard	International standard	German standard	Classification VDE specifications
EN 61439 (all parts)	IEC 61439 (all parts)	DIN EN 61439 (VDE 0660-600) (all parts)	VDE 0660-600 (all parts)

Parts of EN 61439 standard

Part of European standard	Content
EN 61439-1	Low-voltage switchgear and controlgear assemblies - Part 1: General rules
EN 61439-2	Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies (PSC)
EN 61439-3	Low-voltage switching controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons
EN 61439-4	Low-voltage switchgear and controlgear assemblies - Part 4: Particular requirements for assemblies for construction sites (ACS)
EN 61439-5	Low-voltage switchgear and controlgear assemblies - Part 5: Assemblies for power distribution in public networks
EN 61439-6	Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways)
EN 61439-7	Low-voltage switchgear and controlgear assemblies - Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electrical vehicles charging stations

Supplements for parts of the EN 61439 standard

Part of European standard	Content
EN 61439-1 Supplement 1	General rules: Guidance to specifying switchgear and controlgear assemblies
EN 61439-1 Supplement 2	General rules: A method of temperature-rise verification of low-voltage switchgear and controlgear assemblies by calculation
EN 61439-2 Supplement 1	Power switchgear and controlgear assemblies: Guide for testing under conditions of arcing due to internal fault

Protection type / IP degree of protection

For each switchgear and controlgear assembly, the protection type with the IP code is specified according to IEC 60529 and verified according to EN 61439

- with regard to protection against contact with active parts and preventing solid foreign bodies from entering the system,
- with regard to preventing water from entering the system.

The protection type is important for ensuring protection against electrical shock. The protection type applies to jacketings, covers and housings. The protection type is specified by two code numbers of the IP protection type and optionally an additional letter.

- The first code number (0-6) indicates the protection against solid foreign objects from entering the system and the protection against contact with dangerous parts.
- The second code number (0-8) indicates the protection against water from entering the system.
- The additional letter (A-D) indicates the protection against contact with dangerous parts.

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